# Do Hedge Funds Profit from Public Information?

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**Abstract**

We examine whether hedge funds profit from public information. Unique data on hedge funds' acquisition of publicly-available SEC filings show funds that access filings subsequently exhibit 1.5% higher annualized abnormal returns than non-users. Top-quartile users earn even higher returns. Acquisition of filings is not merely a proxy for differences in fund ability. Funds appear to act on acquired information as fund returns are systematically related to filings' characteristics and viewed stocks' returns. Profitability is not driven by funds specializing in information processing. Rather, filing views predict stock-specific events, consistent with funds using public information to complement private signals.

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## 1. Introduction

Do hedge funds profit from public information? Theory suggests that investors with complementary private signals or an information processing advantage can profit from widely available signals (Kim and Verrecchia, 1994, 1997; Grossman and Stiglitz, 1980; Garleanu and Pedersen, 2018). On the other hand, evidence from mutual funds suggests that more sophisticated investors respond less to public signals (Kacperczyk and Seru, 2007). Hedge funds may find alternative strategies more attractive than those utilizing public information because of their flexibility to invest in a wide variety of strategies (e.g., Fung and Hsieh, 2001; Stulz, 2007; Sun et al., 2012) or if they believe prices are efficient with respect to public disclosures (Fama, 1970, 1991). Despite a large literature dedicated to understanding both the performance and investment activities of hedge funds (for a survey treatment, see Agarwal et al., 2015), relatively little is known about whether hedge funds actually acquire public information, whether such activity is profitable, and if so, why. In this paper, we examine these questions in the context of information that is the epitome of public—mandated financial reports available to all market participants.

A necessary condition for hedge funds to profit from public information is that they acquire it in some way. However, this is difficult to test as we generally do not observe hedge funds' information sets. We overcome this challenge by using unique data that allows us to observe a subset of the information hedge funds acquire. This information is the very definition of public—SEC filings available to anyone with an internet connection.[1] We compile a database of hedge funds' acquisition of financial disclosures from the SEC's EDGAR server. By mapping hedge fund internet protocol (IP) addresses to those accessing financial filings, we are able to identify public information acquisition by hedge funds, including notable funds such as Renaissance Technologies, PanAgora, and AQR.

Hedge funds exhibit substantial variation in public information acquisition both across

[1]While filings are free to access, processing and understanding filings may be costly as evidenced by the high salaries and extensive training of hedge-fund employees.

funds and within fund. We test whether this variation is related to performance. Hedge funds that access at least one filing have higher abnormal returns in the next month compared to funds that do not access filings. The result is statistically significant and economically large, representing a difference in abnormal returns of about 1.5% per year. More intensive information acquisition is also associated with higher subsequent abnormal returns, with the top-quartile users generating 1.73%-per-year higher returns than non-users.[2]

A substantial literature on hedge fund performance documents differences in managerial ability.[3] It is possible that usage of public filings may merely be correlated with hedge fund types that outperform. To rule out such selection concerns, we examine within-fund variation in usage. Even within fund, performance is better subsequent to periods when those funds access public information. This suggests that the relation we observe is more than just a selection effect where SEC filing usage proxies for fund type. Moreover, we find that this relation varies as a function of the filing characteristics and content of the filings, even within fund. This finding provides evidence that funds use the filings, and the relation is not an artifact from due-diligence document collection.

Analysis of stock-level performance of viewed securities provides additional evidence that the acquired public information is related to profitable trades. If hedge funds were simply acquiring filings in companies but not investing in those stocks, then subsequent abnormal stock-level performance should not explain fund-level performance. Instead, the performance of stocks whose filings are viewed by funds is strongly related to the overall performance of the funds. On average, viewed stocks have positive cumulative abnormal returns following

[2]It is worth noting that we do not observe information acquisition of public filings from other information intermediaries such as Bloomberg. If all funds obtain public information but do so from different sources, then we should observe no return differential as a function of EDGAR usage. That is, unobserved usage should bias *against* our findings. This is true unless there is a selection effect in which better funds use the SEC website rather than other sources. The following within-fund analysis rules out such selection effects.

[3]For example, Brunnermeier and Nagel (2004) show that some hedge funds were able to profitably ride the internet bubble, while others did not. Funds with more distinctive strategies perform better (Sun, Wang, and Zheng, 2012). Funds with lower $R$-squareds exhibit better performance (Titman and Tiu, 2011), but it is possible these funds are exposed to an omitted risk factor (Bollen, 2013). Manager characteristics, such as undergraduate university quality (Li, Zhang, and Zhao, 2011) and sensation-seeking (Brown et al., 2018), are related to performance.

hedge fund views. Importantly, fund-level returns are higher when the average or median abnormal returns for stocks viewed by the fund are higher. This relation holds even within fund, so it is not just the case that better funds have both higher returns and research stocks that outperform. Rather, the stock-level analysis suggests that funds are making profitable trades in the securities whose filings are viewed. Analysis of holdings data also provides corroborating evidence that funds initiate and close positions in viewed securities.

We perform several analyses to investigate the potential economic channel underlying how funds profit from public information. As discussed above, public information may be profitable if funds exhibit a processing advantage over other investors. Research shows that markets do not fully incorporate all information embedded in public filings (e.g., Ball and Brown, 1968) and that sophisticated investors have an information processing advantage (Engelberg et al., 2012). Given these findings, one might expect hedge funds to acquire large amounts of new filings. For example, recent work by Cohen et al. (2018) suggests textual processing of public filings is potentially quite lucrative, with long-short portfolios sorted on changes in filings generating alphas of 7% per year.[4] A second possible mechanism for profitable use of public information is that hedge funds may possess private information that is more valuable when used in conjunction with public information. For instance, Tetlock (2010) provides evidence of privately-informed investors trading ahead of public news events. Existing public financial information may complement the private information possessed by these traders.[5] To evaluate complementary private information as an economic mechanism, we test whether public information acquisition predicts future news events. To evaluate information processing as an economic mechanism, we test whether the relation between the acquisition of public information and fund returns is stronger for funds that are more likely

[4]Consistent with this reasoning, a quantitative hedge fund in our sample explained to us that getting the raw "text" of filings is most easily done through the SEC EDGAR database and is less accessible through commercial databases.

[5]Note that private information is not necessarily illegal insider information but could instead stem from hard-to-get or costly data sources (e.g., satellite data, mobile phone data) or proprietary strategies used to narrow the large universe of stocks.

to be information processors.

First, if funds use public information in conjunction with private information, their public information acquisition behavior should have predictive content for future news events for firms. We show, using stock fixed effects, that filing views by hedge funds predict future filings of 8-Ks (unscheduled material events) and future large returns for viewed firms, consistent with them being informed traders as in Tetlock (2010). We use a news database to explore the types of events about which hedge funds may have private information. Hedge fund acquisition of a company's annual (10-K) and quarterly filings (10-Q) predicts certain subsequent news stories, including news about stock price movements, future debt issuance, bankruptcy, analyst and credit rating changes, and legal and regulatory actions for the firms. These findings are consistent with the notion that public filings complement private signals concerning the upcoming news events.

Second, we examine several subsets of users that are ex-ante likely to have an information processing advantage. First, we identify hedge funds that systematically use computer programs to gather large quantities of public filings automatically from the SEC website. These "scrapers" are likely more focused on processing large amounts of public information and, insofar as private signals are scarce, unlikely to have acquired similar volumes of complementary private information. While scrapers earn 1.8% higher annualized abnormal returns than non-scrapers, they do not generally exhibit a positive return-acquisition relation at a monthly horizon. The proportion of scrapers in our sample (7%) is unconditionally low; therefore, it is not surprising that scrapers do not drive the results. Moreover, we also do not find an increased return-acquisition relation for processors defined under an alternative definition that captures timely acquisition of new filings. Second, we classify a subset of funds as financial statement analysis specialists based on a fund's propensity to access 10-K/Q reports. We do not find that usage by specialists of 10-K/Q filings is significantly related to differences in subsequent performance. Rather the return-acquisition relation is driven by generalists (i.e., non-specialists), which is less consistent with hedge funds developing an

advantage at processing a certain filing type. Overall, these results are more consistent with hedge funds using public information to complement private signals.

Our work contributes to a growing recent literature on information acquisition by hedge funds.[6] Massoud, Nandy, Saunders, and Song (2011) find that hedge funds trade on private information obtained from syndicated loan participation. Gao and Huang (2016) show that funds connected to lobbyists outperform on their political holdings. Gargano, Rossi, and Wermers (2017) show that funds trade profitably on information from the FDA that can be obtained through Freedom of Information Act requests. A contribution of our paper is to show that information acquisition of quintessentially public information is profitable for hedge funds. Another contribution is to show that the return-acquisition relation is not driven by simple processing of public filings but rather is more consistent with funds using public filings to contextualize private signals.

Our paper complements and contributes to several contemporaneous working papers examining trade-level profitability of institutional investors in relation to public information. Chen, Cohen, Gurun, Lou, and Malloy (2017) examine EDGAR search behavior of 13-F filers, predominantly mutual funds. They find that mutual fund managers follow trades of company insiders for a particular set of firms, that the set is highly persistent, and that investor trades related to these "tracked" firms are more informative than other trades for future stock performance. Dyer (2017) studies whether local institutional investors (13-F filers) use public information to generate an information advantage to make profitable trades in local stocks. Investors are more likely to acquire information for local investments and make more profitable trades when also acquiring public information. Like our work, Chen, Cohen, Gurun, Lou, and Malloy (2017) and Dyer (2017) also unmask IPs accessing

[6]Unsurprisingly, hedge funds are quite wary of information acquisition activities by other investors. In particular, these investors delay disclosure for positions which subsequently outperform (Agarwal, Jiang, Tang, and Yang, 2013; Aragon, Hertzel, and Shi, 2013; Shi, 2017). Consistent with these concerns having merit, an institutional investor has informed the authors that it has used the EDGAR log files and filing access patterns to develop trading strategies.

EDGAR.[7] Chen, Kelly, and Wu (2018) show that hedge funds trade more aggressively in stocks with less analyst coverage resulting from brokerage house closures and these trades are more profitable. They provide suggestive evidence that EDGAR traffic for these firms' filings is higher in geographic areas closer to hedge funds, but they do not directly link EDGAR activity to hedge funds' IP addresses.

The empirical designs of these related studies all rely on stock holdings reported in 13-F filings as the primary unit of observation. Our study considers profitability at the level of the hedge fund company. The related papers do not address whether the aggregate benefit of stock-level return predictability offsets the costs of paying attention to the release of public filings, processing public information, and trading on the information. Factors such as transaction costs and fees as well as dis-economies of scale may mean that trade-level profitability does not translate into fund-level profitability. Our paper fills this gap in this nascent literature and connects it to the broader literature on hedge fund information acquisition. Our paper also is the first to detail the cross-sectional and time-series variation in hedge-fund specific usage of public filings and to provide evidence of the channel behind the return-usage relation, i.e., that hedge funds use public information in conjunction with private information.

The remainder of our paper is organized as follows: Section 2 details the creation of the dataset of hedge funds' acquisition of SEC filings. Section 3 summarizes the extent and determinants of financial filing usage by hedge funds. Section 4 examines how public information acquisition is related to subsequent fund performance. Section 5 explores the economic channel through which hedge funds profit from public filings. Section 6 concludes.

[7]Several other papers use IP addresses to identify specific EDGAR users outside the asset management space. Specifically, Bozanic, Hoopes, Thornock, and Williams (2017) identifies IRS usage, Li, Lind, Ramesh, and Shen (2017) identifies Federal Reserve and FDIC usage, and Gibbons, Iliev, and Kalodimos (2018) identifies analyst usage. For determinants of EDGAR usage more generally, see Drake, Roulstone, and Thornock (2015, 2016), Drake, Quinn, and Thornock (2017), and Loughran and McDonald (2017). For additional evidence relating EDGAR search volume to stock-level performance, see Li and Sun (2017).

## 2. Data and Sample Construction

An innovation of this paper is to identify hedge fund usage of the SEC EDGAR database and relate usage and subsequent stock performance to fund-level performance. The primary analysis uses data from four main sources: the SEC's EDGAR server log files, the American Registry for Internet Numbers (ARIN), MaxMind, and the Hedge Fund Research (HFR) database. We now detail the steps used to construct the primary panel dataset used in the analysis.

### *2.1. Step 1: Identify IP addresses of hedge funds*

Our sample of hedge funds is initially determined by all hedge funds in the HFR database, which is survivorship-bias free because it includes alive and dead funds. HFR provides each fund's monthly returns and often the monthly AUM of the fund. We also have details about the strategies and fees of the funds.

For each sample hedge fund, we search three sources for associated IP addresses. The first two sources are cross-sectional snapshots in 2014 and 2017 of the ARIN WHOIS database. We match records using the organization's name in ARIN and the hedge fund's name in HFR. A challenge is that the ARIN WHOIS database only provides bulk snapshots of the current IP registration landscape. As a result, funds that exit the HFR sample before 2014 may or may not be present in the ARIN snapshots. To mitigate this issue, we use a third "IP address book" from MaxMind that provides historical mappings of organizations to IP ranges for 2006 to 2017.[8] Name-matching between HFR and MaxMind produces additional hedge fund-IP matches. Another way to resolve the potential IP survivorship issue is to limit the sample to the 2014-2017 period for which we have two snapshots of the ARIN WHOIS database. We find similar results using this subsample.

[8]We choose not to use the MaxMind panel alone because of potential data quality concerns. In particular, there is an abnormal temporary spike of registrations in 2011, and some funds that are matched using ARIN are present for only a couple of months in 2011 in MaxMind.

The above procedure results in a number of potential hedge fund-IP address matches resulting either from the (1) 2014 ARIN, (2) 2017 ARIN, or (3) MaxMind IP address registrars. For each potential match, we use the ARIN WHOWAS database to determine the dates a hedge fund used a particular IP. ARIN WHOWAS provides historical information about the ownership of particular IP addresses, including registration start and end dates for each hedge fund's IPs.[9] We restrict our study to IP-related activity between these registration dates.

### *2.2. Step 2: Identify hedge fund use in EDGAR logs*

For each HFR hedge fund and associated ARIN IP, we examine the IP's activity on the SEC EDGAR server. The EDGAR server tracks all usage, including which files were downloaded and all clicks users make when navigating the database (including views of the EDGAR file directory).[10] Each record includes the IP address of the user and precise timestamps of the IP's activity on the server. The server reports the CIK of the firm being examined by the IP. For example, an investor studying CIK 21344 would be requesting files related to Coca-Cola Enterprises. We also have an accession number, which uniquely identifies each filing on EDGAR. If the investor clicks on a file with accession number 21344-17-000026, the investor would be looking at the Coca-Cola 10-Q filed on 2017-07-27. The data also provide the file name, which allows us to see whether the investor is accessing the 10-Q or one of the various exhibits. We obtained the server log files for the SEC EDGAR database for all days from January 1, 2003 to March 31, 2017, with the exception of September 24, 2005 to May 11, 2006. The SEC did not retain log data for these days (Bauguess et al., 2013).

One challenge is that the fourth section of the IP addresses provided by the SEC EDGAR server logs is obfuscated (e.g., 191.191.191.abc). To resolve this challenge, we link IP activity

[9]We cannot use ARIN WHOWAS for the initial match to HFR because ARIN does not provide bulk downloads of ARIN WHOWAS. Historical registration details for IPs can only be accessed one IP at a time.

[10]We do not count such index views towards information acquisition totals in our subsequent analyses.

on the EDGAR server to hedge funds in the constructed HFR-ARIN sample using the first three sections of an IP address. Often, hedge funds register the full range of possible IPs available in the fourth section of the IP address (xxx.xxx.xxx.0 to xxx.xxx.xxx.255). Even if a fund only registers a portion of the 0 to 255 range, the other registered owners are frequently unrelated to the financial industry.

### *2.3. Step 3: Create panel datasets for analysis*

The analyses in the subsequent sections make use of several panel datasets. The primary "hedge fund-month" panel consists of monthly statistics on returns, AUM, and EDGAR usage at the hedge fund level (aggregating across IPs to determine hedge fund EDGAR usage). This panel results from combining HFR data with monthly aggregate EDGAR usage statistics. We determine funds' abnormal returns using the Fama and French (2015) five factor model augmented with the Carhart (1997) momentum factor and limit the sample to funds with at least 36 months of returns data.[11] While the HFR database is at the fund level, EDGAR usage is at the management-company level; thus, we aggregate fund-level returns to the institution level by weighting by assets under management in each fund. An advantage of studying hedge funds is that hedge funds typically manage a few related funds rather than a wide variety of funds, typical of, for example, mutual fund complexes.

We also filter the sample based on fund strategy. Unsurprisingly, macro funds access firm-specific filings much less frequently than equity long-short funds. We exclude macro hedge funds and fund-of-funds. Our sample consists of "Event-Driven," "Equity-Hedge," and "Relative Value" funds.

For some auxiliary analyses, we also utilize firm-level information from CRSP and Compustat as well as Thompson Reuters 13F holdings data. We use the SEC master files to reference the set of filings made by firms in EDGAR.

[11] We use this benchmark because we restrict the sample to equity-oriented funds. The results are similar when using the risk factors developed in Fung and Hsieh (2001) to capture more esoteric hedge fund strategies. We report these results in the Internet Appendix.

## 3. Public Information Acquisition by Hedge Funds

### *3.1. Sample summary statistics*

We restrict the sample to funds whose IP addresses we identify in ARIN or MaxMind and that report return information to HFR. Panel A of Table 1 reports summary statistics of the 557 hedge funds in the sample. The median fund has $615 million in assets under management. The median management fee is 1.5% and the median incentive fee is 20%. The median market beta from the benchmark model is 0.35, indicating that funds are hedged relative to market risk to some extent.

Panel B of Table 1 reports information acquisition statistics of the fund-month panel used in our subsequent performance analysis. In the median fund-month, the total number of unique filings downloaded is only 4 filings. For the 90th percentile fund-month, the total number of downloads is 217. Panel B of Table 1 also reports the relative proportion of form types accessed in a given fund-month. On average, a third of the filings are annual or quarterly financial reports, i.e. 10-Ks or 10-Qs. The next most common filing accessed is the disclosure of unscheduled material events reported in the 8-K, which accounts for 18% of the average fund-month's downloads. Insider trading filings (Form 4s) are the next most accessed filing—they account for 5% of downloads for the average fund-month.

### *3.2. Information acquisition by notable hedge funds*

Figure 1 reports information acquisition for some prominent hedge funds—Renaissance Technologies, PanAgora, and AQR—based on the IP addresses we link to these firms. The figure reports the time series of total downloads as well as the time series of downloads of various company reports (10-K/Q, 8-K) and investor reports (4, 13-D/F/G). Some funds consistently use EDGAR. For instance, AQR regularly downloads 400-500 filings each month, apart from a handful of months when the firm downloads over 100,000 filings in a single month. In the early part of the sample, downloads by Renaissance Technologies also number in the hundreds before jumping higher. In late 2011, Renaissance Technologies downloaded

over 3 million Form 4 filings in a single month and then, in subsequent months, continued to download thousands of Form 4 filings. The shift in information acquisition behavior suggests a shift in strategy. PanAgora has increasingly accessed public financial information from the SEC since 2008. Its use of various forms is somewhat episodic. For instance, for a period from mid-2010 to 2012, the firm downloaded over 500 10-Qs each month, but then the use of quarterly reports fell in 2013. Similarly, PanAgora's use of 8-Ks is also more pronounced in the latter part of the sample.

### *3.3. Heterogeneity of public information acquisition*

Table 2 reports the top 30 hedge fund users of EDGAR in our sample.[12] Renaissance Technologies, PanAgora, and Blackrock are the top users, although the proportions of various types of filings they view are not the same. For reference, the underlying frequencies of filing types in the SEC EDGAR database are: Form 10-K/Q 5%, Form 8-K 9%, Form 4 43%, Form 13-D 2%, Form 13-F 2%, Form 13-G 6%, other 34%. Relative to these filing-type frequencies, PanAgora focuses on company financial reports and disclosures (10-K/Qs and 8-Ks), while Renaissance Technologies and Blackrock focus on disclosures of trading by insiders (Form 4s). Clearly, there is some heterogeneity in the types of information that asset managers acquire from public filings.

To explore this further, Figure 2 plots the time series of public information acquisition by hedge funds. The figure reports the fraction of the cross-section accessing filings in a given month (left column) as well as the cross-sectional median and the 25th, 75th, and 90th percentiles of EDGAR usage, conditional on a fund downloading a given filing type. Panels (a) and (b) report these time series for all downloads. The remaining panels report statistics for various firm and investor filings.

[12]It is worth noting that some of the investment companies presented in this table also have mutual funds. We cannot identify from the logs whether a view comes from hedge fund or mutual fund managers. Therefore, these totals represent the entire management company. Subsequent performance analyses use returns that are specific to the hedge funds. Any noise in the independent variable induced by capturing mutual fund views should bias any coefficients in the performance regressions toward zero.

The fraction of the cross-section accessing at least one file is fairly static over the sample. About two-thirds of the funds in the sample access a filing each month. The intensive margin of EDGAR use, on the other hand, rises over the sample period (panel (b)) for all but the lowest percentiles of users. For funds accessing some filing, the median number of filings downloaded increases from 10-20 per month to around 40 per month. The increase is more dramatic for the 75th and 90th percentiles of use. The 90th percentile of use rises from about 50 filings per month in 2003 to around 1,000 per month in 2017. Panels (c)-(f) show that similar patterns hold for the major corporate financial filings (10-K/Q and 8-K). The rise in EDGAR use by hedge funds mirrors the overall rise in EDGAR usage unconditionally (i.e., including non-hedge funds). This increased demand suggests financial market participants value these disclosures.

Some hedge funds access information on what other investors are doing. Panels (g)-(n) report hedge fund attention to various investor filings. Form 4 reports trading by company insiders. Forms 13-D, 13-F, and 13-G report holdings of activists, institutional investors, and passive investors, respectively. About 1 in 5 hedge funds in the sample access one of these filings, but, conditional on use, the usage of investor filings is fairly modest.

Funds in the sample also exhibit heterogeneity in the intensity with which they use different types of filings. Recall from Table 2 that PanAgora primarily accesses company financial disclosures while Renaissance primarily accesses trade disclosures by company insiders. To examine this more generally, we calculate the fraction of a fund's total downloads that are due to a particular type of filing. Figure 3 plots the cross-sectional distributions of this metric for common filings. The forms that generally comprise the most common public information acquisition by funds are the annual and quarterly 10-K/Q reports, as well as the more timely 8-K disclosures of material events. However, there are sizable fractions of the cross-section which never access these reports. The filing accounting for the next largest fraction of filings is Form 4. The use of other investor filings like 13-D/F/G comprises an even smaller fraction of funds' total downloads for the vast majority of hedge funds.

Hedge funds' use of EDGAR varies systematically both over time and with fund characteristics. In the Internet Appendix, we provide evidence that larger funds and more hedged funds (lower beta) funds are more likely to acquire public information. We also examine the characteristics of firms whose filings are downloaded by hedge funds. Internet Appendix Table IA.2 shows that hedge funds are more likely to view filings associated with higher leverage firms and growth firms.

## 4. Public Information Acquisition and Performance

### *4.1. Hedge Fund Usage of EDGAR and Fund Returns*

This section shows that public information acquisition by hedge funds is positively related to the funds' subsequent abnormal performance. We first examine how the decision to seek any public information relates to subsequent abnormal performance. Table 3 reports that funds with any download activity exhibit higher abnormal returns in the subsequent month, where abnormal return is calculated using the Fama-French Five Factor model plus Momentum. The point estimate indicates that funds downloading at least one filing in a month subsequently experience 1.5% higher annualized abnormal return than funds that do not acquire public information from EDGAR.

For columns 2-7, the explanatory variables are indicator variables for whether a fund accessed any filing of the specified type in a given month. The improved performance is statistically significant for funds accessing both scheduled and unscheduled financial disclosures (10-K/Q, 8-K) as well as various investor filings (Forms 13-D, 13-F, and 13-G). The resulting annualized abnormal performance ranges from 0.8% per year (13-F) to 1.4% per year (10-K/Q, 8-K, 13-D). The relation between accessing trade disclosures by firm insiders (Form 4s) and performance is smaller in magnitude at 0.6% per year and is statistically insignificant.

We next consider whether higher levels of information acquisition acquisition behavior are associated with higher performance. Table 4 reports regressions of abnormal returns

on a continuous measure of the number of filings of a given type accessed by the fund in a given month. Specifically, download activity is measured as the log of one plus the number of filings downloaded. Conditional on any download activity, the median log download measure is 3.14 (i.e., 21 downloads). The estimate from the first column of Table 4 indicates that the median fund accessing filings exhibits a 1.16% higher annualized return in the following month. Funds at the first and third quartiles (conditional on use) exhibit 60 and 173 bps higher returns than non-users. For 10-K/Q and 8-K filings, median users of filings earn about 1.1% higher annualized returns in the subsequent month. For the remaining filings types, the economic magnitudes are lower, but still nontrivial. The median users of investor filings Form 4, Schedules 13-D, 13-F, and 13-G exhibit higher subsequent returns of 54, 77, 63, and 83 bps (annualized).[13] Overall, the results suggest usage is positively related to subsequent performance, which is consistent with hedge funds deriving value from public information.[14]

*4.2. Do differences in hedge fund type explain the profitability of public information?*

One concern with the analysis thus far is that public information acquisition may just proxy for differential investment abilities across funds. A given investment fund may have superior information processing technology, access to other data providers (e.g., Bloomberg), or private information. The observable public information acquisition on EDGAR may proxy for these differences across funds. To address these possibilities, we consider whether within-fund variation in hedge funds' public information acquisition predicts subsequent within-fund performance.[15] Table 5 shows that this is indeed the case. We model within-fund variation in two ways: (1) using a fund fixed effect to absorb average fund ability, and (2) allowing for time-varying strategies for each fund. On the extensive margin, the annualized point

[13]Conditional on use, the median number of downloads for Forms 10-K/Q, 8-K, 4, 13-D, 13-F, and 13-G are 22, 12, 8, 4, 2, 3, and 3 downloads per month, respectively.

[14]In the Internet Appendix, we report placebo tests strongly supporting the notion that the documented return/acquisition relationship is not due to chance.

[15]Within-fund analysis also has the benefit of addressing potential selection bias concerns associated with selective reporting to or backfilling of the HFR database. HFR reports the first date the fund reports returns. Results are similar if we exclude returns prior to this date.

estimate of the value of public information acquisition for next-month's returns only drops from 1.5% per year to 94 bps per year with the addition of fund fixed effects (moving from column (1) to (2) in Panel A). Public information acquisition is thus associated with a non-trivial performance differential *even within-fund*, suggesting that fixed differences in processing ability or private information acquisition across funds do not fully account for the observed profitability.[16] When considering the continuous measure of information acquisition (column 4), the point estimates suggest that the subsequent outperformance for median information acquisition drops from 1.16% to 87 bps per year. The performance-usage relation is significant even controlling for time-invariant fund types.[17]

It is possible that fund types may not be fixed through time. That is, a fund's information acquisition strategy may vary through time due to new ideas or time-varying efficiency of prices. To account for this, we consider a more flexible way to account for within-fund variation in Panel B of Table 5. Specifically, we identify changes in a fund's public-information-acquisition strategy and relate these changes to subsequent abnormal returns. A fund's abnormal usage is calculated as a z-score of downloads in month $t$ relative to the distribution of the fund's usage during the previous 24 months. The fixed effects specification used in Panel A essentially compares a fund's use to its full sample average. In contrast, the results in Panel B use a rolling window of the past 24 months as the firm's baseline for comparison.

Abnormal public information acquisition is positively related to performance (column (1) of Panel B in Table 5). Because information-gathering strategies can shift to more or less intensive strategies, column (2) reports separate estimates for abnormal usage falling below the 25th percentile and above the 75th percentile, relative to the prior 24 months.

[16]The fact that the point estimates drop in magnitude indicates that there are some differences in fund type. It may be that funds using EDGAR are more skilled investors or that they are more frugal in terms of paying for data providers.

[17]We report the analogues of Tables 3 and 4 with fund fixed effects in Internet Appendix Tables IA.3 and IA.4. The profitability of public information acquisition within-fund is mainly driven by use of 10-K/Qs and 8-Ks.

High abnormal usage is positively related to future performance and the relation is highly significant. In the month following increased public information acquisition, funds with abnormally high usage exhibit approximately 1.3% higher returns (annualized). In contrast, low abnormal usage is not significantly related to future performance. This indicates that discontinuing information acquisition is not associated with declines in performance and is consistent with funds rationally taking into account the costs and benefits of information acquisition when considering whether to acquire additional information.

*4.3. Do Funds Use the Public Information?*

It is possible that funds acquire public information but do not actually utilize this information. For example, firms may create repositories of documents in response to investment opportunities, merely for the purposes of due diligence, even if they glean no additional information from the filings. However, if funds do not actually use the filings, then we do not expect the relation between fund returns and public information acquisition to vary as a function of characteristics of the filings themselves. In this subsection, we show that the profitability of public information acquisition varies systematically with characteristics of the filing accessed. In particular, we interact the amount of acquisition activity with various filing characteristics. We focus on 10-K/Q filings because these filings are most commonly requested by funds and file attributes vary significantly across file types, such as file size.

We consider the following filing characteristics: age, file size, the amount of uncertain language in the filing, whether other funds view the filing, and whether the downloading firm "tracks" the filer. For each fund-month and characteristic, we take the median filing characteristic within firm-month across all 10-K/Qs accessed by the fund. In Panel A of Table 6, we estimate the return-acquisition relation separately for fund-months where the characteristic falls in the top quartile, the interquartile range, or the bottom quartile of the overall distribution of the filing characteristic (conditional on use). In Panel B, we also interact filing age with the other four characteristics. Throughout, we control for the median log market capitalization of the filers viewed by a fund in order to capture any systematic

differences in the types of firms viewed by different funds. For the same reason, we also include a fund fixed effect.

We first consider how old the public information is. Older filings are less likely to contain non-priced information but may contain essential contextual information for an investment idea. Moreover, the age of the financial statements is exogenous to the firm's information environment in that all public companies are required to make such filings at regular intervals. Column (1) of Table 6 shows that the relation between profitability and filing age is U-shaped. Funds looking at both new filings and old filings subsequently outperform while there is not a strong relation between returns and download activity of filings of intermediate age. If funds are using the information in filings, it is not surprising that the age of the filing is related to the profitability. On the other hand, if funds disregard information in viewed filings, we would not expect such a U-shaped relation. Moreover, the fact that we see a non-linear relation suggests funds might be using filings in different ways. In other words, the U-shaped pattern is consistent with the return-acquisition relation being due to both funds processing new developments and funds using older filings to develop a context for private signals. This relation strongly suggests that the information in the filing itself is being put to use.

Prior evidence suggests that greater 10-K file size is associated with more post-filing volatility (Loughran and McDonald, 2014). If various fund strategies require reading disclosures of different length, then we would expect the profitability of filing views to vary systematically with filing length. On the other hand, if firms are merely acquiring such information for due diligence and it goes entirely unused, we would not generally expect such a relation. Table 6, column (2), shows that the value of public information in financial reports is largest when funds access smaller filings. In general, funds accessing longer, more complex corporate filings earn less rather than more.

We retrieve from the WRDS SEC Analytics Suite the proportion of uncertain words in SEC filings, determined using the Loughran-McDonald lexicon (Loughran and McDonald, 2011). Textual uncertainty may arise when company management is unsure of the implica-

tions of the financial results or when there exists uncertainty concerning future cash flows of the firm. Examples of uncertain words include "Variability", "Doubt", and "Random." Column (3) of Table 6 reports that textual uncertainty in the financial reports viewed by hedge funds is strongly related to subsequent fund returns. The magnitude is large. Median use of filings with high textual uncertainty is associated with subsequent performance improvements of about 1.8% per year relative to non-users. Such a relation suggests there is relevant information in the actual text of the filings that relates to fund performance.

Column (4) of Table 6 shows that more intensive public information acquisition is significantly more profitable when other hedge funds also view a filing. Since the number of other hedge fund views is generally small, this is consistent with a few hedge funds receiving correlated private signals that are complementary to public information.

Some funds regularly view the filings of certain firms. Chen et al. (2017) show that trades following Form 4 filings made by insiders at tracked firms are more profitable, arguing that investors are likely to also possess complementary private information about these tracked filers. We test whether tracking certain filers results in more profitable use of public information found in financial statements (10-K/Qs). Column (5) of Table 6 shows that tracking status is positively related to profitability of public information acquisition.

Panel B of Table 6 reports the profitability relation when interacting the latter four filing characteristic quartile indicator variables with the filing age quartile indicator variables. This specification allows us to see whether the profitability of each characteristic is driven by young or old filings or both. We saw previously that small filings are associated with higher profitability. Based on the evidence presented thus far, it is theoretically possible (but unlikely) that time-varying investment opportunities are just correlated with the characteristics (other than age of the filing) considered above. For instance, funds tend to see private signals in firms with small filings, and funds subsequently acquire these filings as part of a due diligence process. The results of the filing size interacted with age refute this potential explanation. Panel B, column (1) shows that the profitability of viewing smaller sized filings

is due to both young and old filings, but much less so for filings of intermediate age. Since most companies should have old, young, and intermediate-aged filings available, we see no reason a priori to believe that time-varying investment opportunities should be associated only with old and young filings, but not those of intermediate age. Rather, the most likely explanation is that funds are using the information in these filings.

The other filing characteristics also exhibit variation in profitability as a function of filing age. For funds looking at more uncertain filings (column (2)), the profitability stems from filings of intermediate age. Funds may see private signals after some time has passed from the uncertain filing and then review management's view from prior filings to contextualize this information. When filings are viewed by other hedge funds in the same month (column (3)), the profitability is primarily related to viewing older filings. On the other hand, the profitability of the most tracked filings is U-shaped in age. The young-filing profitability may stem from being able to quickly interpret new public news about the firm, while the old-filing profitability may be due to the complementarity of the filing's information content used in conjunction with more timely private signals.

The fact that profitability varies systematically with the characteristics of the filings accessed by the funds makes it unlikely that funds are downloading the filings and then discarding them without making use of their information content. If this were true, we would not expect the return-acquisition relation to vary with filing characteristics, especially filing age.

### *4.4. Fund performance and viewed filings' stock performance*

We do not observe hedge funds' trades, so it is challenging to determine how exactly funds act on the information gleaned from viewing public filings. Moreover, we do not observe trade-by-trade profitability. Rather, the previous analysis relates *fund-level* returns to prior public information acquisition activity. However, we do observe which filings funds view and can observe the ex post performance of the stocks underlying these filings. We test whether the ex post performance at the stock level is abnormal on average, and more

importantly, whether variation in the underlying security performance relates to variation in fund level performance.

We match viewed filings to underlying stock returns and calculate market-adjusted abnormal returns over various 5-trading day periods following a fund's viewing of the security's filing. Figure 4 reports the average abnormal cumulative returns following funds' viewings of 10-K/Q filings. The underlying stocks exhibit positive excess returns that level off after about 30-40 trading days. The average cumulative abnormal return for this horizon is approximately 50 basis points, so the annualized outperformance is about 4% (=50bps*252/30). Our primary analysis earlier in the section relates fund returns in month $t+1$ to public information acquisition in month $t$. Thus, the horizon of stock-level abnormal performance roughly corresponds with this one-month lag for the fund-level performance. We also calculate stock-level abnormal returns *prior* to the fund's public information acquisition. On average, stocks whose filings are viewed by funds exhibit large negative abnormal performance prior to the fund viewing their financial statements (panel (b) of Figure 4).

Table 7 reports regressions of fund-level performance in month $t+1$ on statistics of 30-trading day stock-level performance for the stocks whose filings are viewed by a given fund in month $t$.[18] For these stocks, we calculate the average, median, minimum, and maximum performance of the underlying viewed stocks. These statistics take a value of zero for fund-months with no financial statement views. Panel A of Table 7 reports specifications with year-month fixed effects. The regressions in the bottom panel also include fund fixed effects.

Stock-level performance following public information acquisition is strongly related to fund-level performance. Funds earn higher returns coincident with higher average or median performance of securities whose filings are viewed. The stock-level statistics are standardized conditional on non-zero viewing, so a one-standard deviation change in average stock-level performance is associated with a 66 basis point difference in annualized fund performance.

[18]The 30-trading day window is chosen to correspond to the monthly timing used in previous tests. A typical month has about 21 trading days. On average, there are about 10 trading days remaining in viewing month $t$ and another 21 trading days in month $t+1$.

Some of the public information acquisition could relate to short positions. Consistent with this behavior, the minimum stock-level abnormal return, which is generally negative, is negatively related to fund returns. The maximum stock-level return is positively related to fund performance. The strong relation with stock-level performance statistics and fund returns holds within-fund as well (Panel B of Table 7), with the exception of the extreme stock-level performance.

The relation between the stock and fund level returns provides strong evidence that funds are trading in stocks for which they view filing information. For a subset of funds that we are able to match to 13-F filings, we also check whether institutions report stock holdings of the companies whose filings are viewed. There are a number of potential sources of noise when examining holdings, so the following analysis should be viewed with caution. First, the 13-F data only contains long positions. To the extent that some use of the public information relates to short positions (which the stock level return results above suggest), we cannot observe this activity. Similarly, exposure through options is not observed in the Thomson Reuters 13-F database. Second, the 13-F data is at the institution level, so we are unable to determine whether holdings relate to hedge fund or mutual fund activity for any management firms running both types side-by-side.[19] Third, the analysis of stock-level abnormal returns above indicates that the horizon of abnormal performance is likely less than the quarterly frequency at which management companies report 13-F holdings. As such, some positions may be initiated and closed within a quarter and never reported on a 13-F.

In spite of these challenges, there is evidence that funds hold securities whose filings have been viewed. In untabulated results, we find that hedge funds report holding 20% of the stocks viewed in that quarter. Moreover, funds open new positions (have positive holdings at the end of the current quarter and none in the prior quarter) on 4% of the stocks whose filings

[19]We previously analyzed hedge fund returns as a function of institutional viewing of EDGAR filings. For our primary hedge fund performance analyses in Sections 4.1-4.3, side-by-side management only introduces potential measurement error into our right-hand side variable (views of public filings), which should work against finding a relation between public information acquisition and subsequent fund-level returns.

are viewed and completely close positions (have positive positions in the prior quarter and none in the current quarter) on another 5% of the viewed stocks. Funds are also statistically more likely to open positions on viewed stocks that have higher returns over the next 30 days. Overall, these results are consistent with the return evidence and suggest funds trade in stocks for which they view filings.

## 5. Why is public information profitable?

As discussed in the introduction, public information may be profitable if hedge funds are skilled information processors. Alternatively, private information may be more valuable when used in conjunction with public information. Private signals could stem from a myriad of sources including costly acquisition of alternative data such as satellite data, proprietary research models, or even inside information.[20] These channels are not mutually exclusive, of course. In this section, we show evidence suggesting that the predominant channel is the latter complementary private information mechanism.

The ways in which profitability varies with filing characteristics discussed in the previous section already hint as to the predominant channel. In particular, the fact that funds perform better when files are shorter (and simpler) rather than longer (and therefore more complex) goes against the processing advantage channel. Moreover, the fact that the filing-performance relation is stronger in "tracked firms" is also more consistent with having access to private information as discussed by Chen et al. (2017). These results are at best suggestive, but point in the direction that funds' use of filings helps complement other information they may have. In the subsections that follow, we conduct additional tests to disentangle these channels.

[20]Since first circulating this paper, the authors have received numerous inquiries from hedge funds about the potential use of the EDGAR log data itself as one such source of private signals. At least one institutional investor is already using the EDGAR log files to extract signals. Anecdotal evidence suggests it is common to link unique data with publicly available financial information.

*5.1. Hedge Fund Attention Predicts Material Firm Events*

To explore these possible channels, we first examine the relation between hedge fund information acquisition and material firm events. On the one hand, if hedge funds have private information about material changes at companies, they may acquire past public information prior to the official announcement of unscheduled material changes in order to contextualize the private signal. Thus, the channel that private information complements public information suggests a positive relation between hedge fund attention and the disclosure of subsequent unscheduled material changes. On the other hand, if hedge funds are primarily profiting from processing public filings, then hedge fund attention should not forecast future unscheduled material changes. That is, funds focused on processing financial statements to forecast future news would have to download filings by both firms that experience future events and those that do not. If funds use filings from both types of firms to predict which firms will experience firm-specific events, these funds' download activity should not predict events.

To test these hypotheses, we examine the relation between the number of hedge funds viewing a company's 10-K/Q filings on EDGAR and the occurrence of material changes disclosed through Form 8-K filings. An attractive feature of 8-K filings for this analysis is that companies must file an 8-K filing within five business days of a material change. We create a weekly panel of 8-K disclosure activity for all stocks in EDGAR and hedge fund information acquisition activity. We require that included companies have filed a 10-K/Q at least once and have at least one hedge fund view at some point in the panel. Also, because earnings announcements are predictable events and firms are required to file an 8-K if a press release is provided, we exclude from regressions all weeks $t$ that have a 10-K/Q filing during weeks $t$, $t+1$ and $t+2$.

Table 8 column (1) shows that the number of hedge funds acquiring 10-K/Q filings in a given week is positively related to the probability of an 8-K occurring in the subsequent week $t+1$. If any hedge fund acquires filings on a company in a given week, the probability

of an 8-K occurring in the next week increases by 2.15%, which is 23% of the unconditional probability of an 8-K occurring. These results are within-company and include year-week fixed effects, and they hold controlling for the intensity of views by all EDGAR users of the company's filings.

The private signals do not all become public immediately. Hedge fund public information acquisition predicts elevated probabilities of 8-K filings in weeks $t+2$ and $t+3$ as well. Again this is consistent with the hypothesis that hedge funds have private signals about material changes at firms.[21]

### *5.2. Hedge Fund Attention Predicts Return Magnitudes around Material Events*

Asset managers have limited time to research investment ideas and evaluate potential signals (Kacperczyk et al., 2014, 2016). We expect funds to focus their information acquisition activities on investment prospects with the largest magnitude returns (either positive or negative since hedge funds can go long or short). If the profitability of public information is purely driven by information processing, then we expect hedge funds to extract information about which investments are potentially most valuable from the filings themselves. The *content* of the filing should be related to ex post return magnitudes rather than the viewing itself. In this case, hedge funds views should not be systematically related to the ex post magnitude of returns. On the other hand, if funds receive many private signals and only research those signals which they expect to be most profitable, we expect their filing views to be related to the ex post magnitude of returns.

To test these alternatives, we consider hedge fund views that precede identifiable material events (i.e., 8-K filings). We test whether the magnitude of the price reactions for these events are systematically related to whether or not a hedge fund viewed the firm's past 10K/Q filings in the week *prior* to the 8-K filing. Specifically, Table 9 presents regressions of stock-level

[21] Companies have five business days to disclose material changes in an 8-K filing, so it is possible that firms issue a press release to announce a material change in week $t$ and then file a corresponding 8-K in the subsequent week $t+1$. The fact that the predictive power lasts beyond a one week horizon eliminates any concerns that the predictive power is solely due to such filing delays.

absolute value of returns in weeks $t+1$, $t+2$, and $t+3$ on a hedge fund view indicator variable at week $t$, conditional on an 8-K filing in week $t+1$.

We find a strong relation between fund views and future absolute abnormal returns. That is, for two firms that both report material events, the magnitude of returns is higher for the firm that was researched by a hedge fund compared to the firm that was not. This should not be the case if funds are using the filings to determine which investments will have larger magnitude returns. It is consistent with funds endogenously choosing to acquire complementary public information about the most attractive potential investments from a set of private signals.

### *5.3. What Events Are Predicted By Hedge Fund Attention?*

In order to shed more light on the nature of hedge funds' private information, we examine what types of events are predicted by hedge fund attention utilizing the RavenPack news database. As discussed above, systematic hedge fund views prior to a news event is consistent with funds having private information. If funds were forecasting such news from processing the filings, then we would not expect such a relation as they would have to view filings of firms both with and without news in the future to make such a forecast. We test whether hedge fund views are higher prior to firm actions like M&A activity, debt or equity issuance, bankruptcy, or trades by company insiders. We also test whether hedge funds appear to have private information about external events like analyst and credit rating changes as well as legal and regulatory issues for the firm. The Ravenpack database also captures when stock price movements make news headlines, so we also test whether hedge fund views predict noteworthy stock price movements. We classify a stock-week as having one of these events if there exists a Ravenpack news story concerning the firm with a relevance score of at least 75 (out of 100) with one of the aforementioned event categories. The results are tabulated in Panel A of Table 10.

The first column of Table 10 shows that hedge fund views predict news stories covering large stock price movements for firms. This is consistent with the prior results that hedge

fund information acquisition is related to subsequent stock price movements in the underlying securities. Hedge fund views predict stories about both upward and downward price movements (untabulated). Hedge fund views are informative about both external and internal events for the firm. Fund views predict subsequent debt actions by firms, primarily debt issuance. Stocks with hedge fund attention have 5 bps higher incidence of debt issuance, which is 9% of the unconditional frequency of issuance (0.56%). Bankruptcy is about 66% more likely than the unconditional probability following hedge fund views. Hedge fund views also predict trades by company insiders. On the other hand, there is not a statistically significant relationship between views and M&A activity or equity issuance.

Hedge fund views also predict events initiated outside of the firm. Views predict both analyst and credit rating changes. The effects are 4% and 18% of the unconditional frequencies, respectively. If we separate rating changes to upgrades and downgrades (untabulated), views predict both upgrades and downgrades for both analysts and ratings agencies. Hedge fund information acquisition also predicts legal and regulatory issues for the underlying firms. Both of these effects indicate that stocks researched by hedge funds are about 7-8% more likely to experience legal or regulatory actions relative to the unconditional probabilities of these events. The legal events are generally when these firms are named as defendants in lawsuits. The regulatory events correspond to initiations of regulatory investigations. Overall, these results are consistent with hedge fund possessing private information about upcoming events for firms and researching the firms ahead of the public revelation of this information.

In Panel B of Table 10, we examine if views of filing types other than 10-K/Qs predict specific events. If public information is complementary to private signals the funds receive, then we might expect variation in what public information is relevant depending on what future events are expected. We find evidence consistent with this reasoning. Specially, some of the events examined in Panel A are also systematically preceded by views of other filings (including 8-K, Form 4, 13-D, 13-G, and 13-F views).[22] For example, funds systematically

[22]Since these other filings are not filed by the firms on a regular pre-determined schedule, we control for

view other filings in addition to 10-K/Qs prior to stock price movements, credit actions, bankruptcy, insider trading, and credit rating events. On the other hand, some events are predicted only by these other filing views (e.g., M&A activity and equity actions) while still others are predicted only by the 10-K/Q views (analyst ratings and regulatory events). Overall, these results provide strong support for the view that public information is being used to complement private signals.

### *5.4. The Return/Information Acquisition Relation and Information Processing Funds*

We also examine whether the return/information acquisition relation exists for several subsets of users that are ex-ante likely to have an information processing advantage: (1) funds that systematically use computer programs to acquire large numbers of filings from the SEC website ("scrapers"), (2) funds that acquire filings in a more timely manner than other funds, and (3) funds that appear to specialize in financial statement analysis based on their propensity to access 10-K/Q reports.

#### *5.4.1. Robotic and Timely Information Acquisition*

One set of investors likely dependent on information processing is hedge funds using robotic means to acquire SEC filings. We classify a fund-month as robotic if the fund accessed more than 50 filings in a single day and the median time between downloads that day was less than 30 seconds. If a fund has more than one robotic month, we label the fund as a "Scraper."[23]

Table 11, Panel A, reports regressions of abnormal returns on the "Scraper" designation as well as its interaction with public information acquisition (as measured by any usage, the continuous usage measure, and abnormal usage). "Scraper" funds significantly outperform non-scraper funds. Scrapers earn 1.8% higher abnormal annualized returns when compared

whether there are new firm filings in any of these categories in the current period to ensure the results are not a mechanical artifact of filings systematically preceding these events.

[23]There are some funds that may access filings automatically in real time as filings are posted. If the intervals between filings are longer than 30 seconds, we would not capture such funds as "Scrapers."

to non-scrapers. The profitability of scraping is not immediate though, as its interactions with each measure of information acquisition are negative and offset the estimated profitability found for the full sample. Rather, it seems that scraping is related to the development of new strategies and information processing that creates value on a longer horizon than a single month. Controlling for these extreme information processors, modest users of public financial information continue to outperform non-EDGAR users by roughly 1.5% per year. While the results suggest funds crawling EDGAR outperform managers that manually retrieve and process filings unconditionally, the latter group of managers still outperforms non-users and the latter group is responsible for the positive performance-acquisition relation. Thus, extreme information processing is not the channel explaining the full sample's return-acquisition relation.

Another set of investors that are more likely processing information is the set of funds that focus more on new filings. We classify funds as timely information acquirors based on the fraction of downloads occurring on the filing date. Specifically, for each fund-month, we calculate the fraction of files acquired that were filed on the date the fund acquired the file. We then take the mean of this fraction across all months a fund is in the sample. If in the cross-section of funds, the fund has an average fraction of views of new files that exceeds the 75th percentile of 0.09, we set the indicator variable "Timely" to one. Panel B of Table 11 shows that the return/acquisition relation is not driven by these timely information processor funds.

*5.4.2. Financial statement analysis specialists*

Some funds specialize in acquiring annual and quarterly financial statements, the most prevalent type of public information accessed by hedge funds. We hypothesize that funds that specialize in processing will focus on a smaller set of financial filings given that developing processing expertise for each additional filing type is costly. Therefore, specialists should have a stronger return-acquisition relation if processing activity is mainly driving the return-acquisition relation, relative to funds exhibiting a more generalist public information

acquisition strategy. The relation would be weaker for specialists if the full-sample results are mostly due to funds with private complementary signals. We identify financial statement analysis specialists as funds for which both (1) the proportion of their total EDGAR usage that is due to 10-K/Q filings[24] and (2) the total number of 10-K/Q filings they access (scaled by months in the sample) are above the cross-sectional medians for each measure. All other funds are classified as generalists.

Table 12 reports estimates of the relation between public information acquisition and subsequent fund returns for financial statement specialists and generalists. We report specifications with and without fund fixed effects and use both discrete and continuous measures of information acquisition. Financial statement analysis specialists do not exhibit statistically significantly higher performance following months in which they view financial reports.

In contrast, the performance of generalist funds is significantly more related to financial statement views. Generalist funds that access at least one filing exhibit 1.6% higher subsequent returns (annualized), and is fairly insensitive to the addition of fund fixed effects. The greater sensitivity of performance to 10-K/Q filing usage for generalists but not for specialists is more consistent with hedge funds profitably using public information in conjunction with private signals, rather than hedge funds simply having processing advantages.

## 6. Conclusion

Hedge funds profit from public information that they obtain directly from the SEC web site. Funds accessing filings from EDGAR in a month exhibit 1.5% higher annualized abnormal returns in the following month than non-users. Top-quartile users earn even higher returns. The effect is not merely due to fund-type differences as the profitability exists even in within-fund analysis. The profitability varies with the age of the filings viewed, consistent with usage of the filings' content. Fund returns are higher when the stocks whose filings are viewed exhibit higher returns.

[24] 10-K/Qs comprise about 30% of all filing views for the median fund.

We investigate whether this profitable use of public information is due to hedge funds being superior information processors or if it is due to them using public information in conjunction with private signals about firm values. Several analyses suggest the latter channel is the predominant source of the profits. Hedge fund information acquisition predicts firm-specific events, and firms whose filings are viewed by funds experience larger magnitude subsequent information events than other firms also experiencing material events. Also, the use of public information results in less subsequent abnormal performance for funds that specialize in information processing. Both robotic information acquisition funds and financial statement analysis specialists do not significantly profit from accessing financial reports, although the former group of funds outperforms unconditionally. Overall, our results show that hedge funds use and profit from public information, and the evidence is most consistent with this profitability stemming from the complementarity of public and private information.

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Table 1: Summary Statistics

Panel A reports distributional statistics of the cross-section of hedge funds in the sample. The Fama-French Five Factor betas plus a Momentum beta are estimated using a hedge fund's full time series of fund-level returns net of fees reported to the Hedge Fund Research database. Hedge funds may have multiple funds; we collapse returns to the firm level and use AUM-weighted returns. Panel B reports distributional statistics of the monthly download activity of hedge funds in the sample. "Downloads" is the number of unique filings downloaded from the SEC's EDGAR database by a given hedge fund in a month. We then report the number of downloads by form-type and, conditional on downloading in a given month, the proportion of monthly downloads by form type. We also report, conditional on downloading, the median characteristics of the form 10-K/Q files examined by a hedge fund that month, including the number of other unique hedge funds viewing the same filing (Competing Views), the age of the filing in days since the filing date (Age), and the size of the filing in KB (File Size).

*Panel A. Hedge Fund Characteristics*

| | Mean | Std. Dev | 25th | Median | 75th | 90th | 99th |
|---|---|---|---|---|---|---|---|
| Firm Assets (mm) | 28838.60 | 260067.13 | 132.00 | 615.00 | 3851.00 | 22400.00 | 490700.00 |
| Months in HFR | 149.91 | 79.04 | 88.00 | 132.63 | 203.29 | 257.27 | 373.00 |
| Months in Sample | 79.16 | 43.95 | 43.00 | 74.00 | 115.00 | 146.00 | 160.00 |
| Age in Months | 149.76 | 78.87 | 88.00 | 132.63 | 203.29 | 257.00 | 373.00 |
| VW Excess Ret | 0.41 | 0.72 | 0.12 | 0.42 | 0.70 | 1.07 | 2.37 |
| VW Abnormal Return | 0.05 | 0.63 | -0.21 | 0.09 | 0.38 | 0.65 | 1.63 |
| Incentive Fee | 18.97 | 4.43 | 20.00 | 20.00 | 20.00 | 20.00 | 28.55 |
| Management Fee | 1.50 | 0.45 | 1.00 | 1.50 | 2.00 | 2.00 | 2.50 |
| Market Beta | 0.37 | 0.35 | 0.13 | 0.35 | 0.56 | 0.85 | 1.34 |
| SMB Beta | 0.10 | 0.26 | -0.01 | 0.08 | 0.20 | 0.39 | 0.74 |
| HML Beta | -0.03 | 0.23 | -0.14 | -0.02 | 0.09 | 0.19 | 0.61 |
| RMW Beta | -0.06 | 0.32 | -0.18 | -0.04 | 0.07 | 0.24 | 0.65 |
| CMA Beta | -0.05 | 0.37 | -0.17 | -0.03 | 0.11 | 0.26 | 0.85 |
| MOM Beta | -0.01 | 0.24 | -0.09 | -0.01 | 0.06 | 0.16 | 0.42 |
| Observations | 557 | | | | | | |

*Panel B. Public Information Acquisition by Hedge Funds*

| | Mean | Std. Dev | 25th | Median | 75th | 90th | 99th |
|---|---|---|---|---|---|---|---|
| Downloads | 672 | 19476 | 0 | 4 | 47 | 217 | 5464 |
| Downloads of 10-K or 10-Q | 101 | 3945 | 0 | 1 | 14 | 71 | 620 |
| Downloads of 8-K | 140 | 7340 | 0 | 0 | 7 | 38 | 587 |
| Downloads of Form 4 | 290 | 16601 | 0 | 0 | 1 | 6 | 93 |
| Downloads of 13-D | 11 | 833 | 0 | 0 | 0 | 3 | 29 |
| Downloads of 13-F | 49 | 2068 | 0 | 0 | 0 | 4 | 68 |
| Downloads of 13-G | 17 | 1820 | 0 | 0 | 0 | 3 | 30 |
| % 10-K/Q | 32 | 28 | 8 | 29 | 50 | 70 | 100 |
| % 8-K | 18 | 21 | 0 | 13 | 25 | 41 | 100 |
| % 4 | 5 | 15 | 0 | 0 | 3 | 13 | 97 |
| % 13-D | 2 | 8 | 0 | 0 | 1 | 5 | 33 |
| % 13-F | 4 | 13 | 0 | 0 | 2 | 9 | 80 |
| % 13-G | 2 | 8 | 0 | 0 | 1 | 5 | 36 |
| % Other | 37 | 29 | 14 | 32 | 51 | 85 | 100 |
| Competing Views 10K/Q | 1.3 | 2.1 | 0 | 1 | 2 | 3 | 9 |
| Filing Age 10K/Q | 324 | 648 | 68 | 133 | 271 | 668 | 3695 |
| Filing Size 10K/Q (KB) | 631 | 831 | 99 | 340 | 978 | 1429 | 3562 |
| Observations | 44180 | | | | | | |

Table 2: Top 30 Users of EDGAR since 2003

The table reports total download statistics and download activity by form type for the top 30 institutional users that match to the HFR database, sorted by total downloads (distinct within a month). We also report the end-of-sample assets under management. Referencing the entire SEC EDGAR database, the unconditional form type frequencies are 10-K/Q 5%, 8-K 9%, Form 4 43%, 13-D 2%, 13-F 2%, 13-G 6%, and other 34%.

| | | Form Type | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Firm Name | Total Downloads | 10-K/Q | 8-K | 4 | 13D | 13F | 13G | AUM (MM) |
| Renaissance Technologies Corp. | 4,016,439 | 3.5% | 2.0% | 85.8% | 0.2% | 0.2% | 0.9% | 50,941 |
| PanAgora Asset Management, Inc. | 3,969,668 | 24.2% | 21.6% | 10.9% | 4.9% | 15.0% | 7.2% | 42,798 |
| BlackRock | 3,704,596 | 3.5% | 0.7% | 92.4% | 0.1% | 0.1% | 0.2% | 5,689,273 |
| Hutchin Hill Capital, LP | 3,044,555 | 5.6% | 8.8% | 79.6% | 0.0% | 4.1% | 0.0% | 3,300 |
| Tradeworx Inc. | 2,068,017 | 11.2% | 5.6% | 51.4% | 5.0% | 11.0% | 15.2% | 61 |
| First Pacific Advisors, LLC | 2,003,707 | 0.0% | 73.8% | 0.0% | 0.0% | 26.0% | 0.0% | 30,800 |
| AQR Capital Management | 1,944,446 | 41.7% | 0.5% | 0.1% | 0.0% | 8.6% | 0.1% | 194,900 |
| Jennison Associates LLC | 1,857,445 | 4.4% | 87.7% | 1.5% | 1.0% | 0.0% | 0.3% | 167,000 |
| Schroder Investment Management Ltd | 1,590,526 | 39.4% | 55.1% | 0.0% | 0.0% | 4.7% | 0.0% | 490,700 |
| Zacks Investment Management | 1,540,158 | 1.8% | 0.3% | 96.8% | 0.0% | 0.2% | 0.0% | 4,736 |
| Ten Asset Management | 1,044,195 | 26.8% | 7.2% | 27.1% | 8.3% | 19.8% | 4.2% | 36 |
| Neuberger Berman | 915,603 | 3.9% | 1.7% | 89.3% | 0.9% | 0.3% | 0.3% | 270,728 |
| Bailard | 804,938 | 1.1% | 0.2% | 98.0% | 0.0% | 0.0% | 0.0% | 2,421 |
| LIM Advisors Limited | 424,800 | 1.6% | 5.8% | 76.8% | 0.7% | 0.7% | 2.4% | 1,800 |
| Benchmark Capital Advisors | 309,561 | 0.1% | 14.4% | 84.3% | 0.0% | 0.0% | 0.0% | 250 |
| Weiss Asset Management | 236,780 | 24.3% | 52.1% | 0.1% | 0.2% | 0.2% | 0.3% | 1,807 |
| Numeric Investors LLC | 230,576 | 41.8% | 0.6% | 3.0% | 0.1% | 0.1% | 0.1% | 30,367 |
| AllianceBernstein L.P. | 199,882 | 40.2% | 18.2% | 2.9% | 0.7% | 3.8% | 1.4% | 497,875 |
| BlueCrest Capital Management LLP | 197,330 | 36.9% | 11.7% | 0.0% | 0.0% | 50.9% | 0.0% | 14,000 |
| Wellington Management Company, LLP | 159,928 | 40.4% | 17.9% | 1.3% | 0.7% | 0.9% | 1.9% | 1,018,744 |
| Marshall Wace LLP | 157,094 | 13.6% | 24.6% | 2.7% | 2.9% | 0.7% | 1.8% | 22,000 |
| Thornburg Investment Management | 133,468 | 29.0% | 8.4% | 32.2% | 0.9% | 5.7% | 0.9% | 52,805 |
| Ivory Investment Management, LLC | 113,702 | 17.6% | 26.5% | 2.5% | 2.3% | 0.7% | 1.8% | 2,733 |
| First Trust Advisors, L.P. | 109,219 | 61.1% | 4.0% | 1.7% | 0.2% | 3.3% | 0.8% | 111,774 |
| Oaktree Capital Management, LLC | 102,263 | 41.3% | 25.4% | 2.3% | 1.3% | 1.1% | 1.4% | 99,260 |
| Clinton Group, Inc. | 88,109 | 5.0% | 2.9% | 0.8% | 0.6% | 85.1% | 0.2% | 650 |
| Bronson Point Management | 80,586 | 2.4% | 0.9% | 0.2% | 0.4% | 92.9% | 0.1% | 245 |
| Alpha Equity Management LLC | 73,095 | 14.7% | 26.8% | 4.4% | 3.1% | 0.5% | 2.1% | 177 |
| HG Vora Capital Management, LLC | 64,955 | 16.7% | 27.0% | 2.9% | 4.6% | 0.7% | 2.0% | 3,400 |
| Calamos Investments | 58,490 | 33.0% | 16.0% | 2.8% | 0.4% | 1.2% | 1.4% | 19,089 |

Table 3: Information Acquisition and Performance

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. Download activity for each form type ("Any") is an indicator variable for whether the fund accessed any forms of the indicated type in month $t$. AUM is standardized for interpretation. Regressions contain year-month fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Any Download | 0.1258*** | | | | | | |
| | (3.37) | | | | | | |
| Any 10K/Q | | 0.1150*** | | | | | |
| | | (3.42) | | | | | |
| Any 8K | | | 0.1157*** | | | | |
| | | | (3.56) | | | | |
| Any 4 | | | | 0.0511 | | | |
| | | | | (1.49) | | | |
| Any 13d | | | | | 0.1196*** | | |
| | | | | | (3.69) | | |
| Any 13f | | | | | | 0.0697* | |
| | | | | | | (1.94) | |
| Any 13g | | | | | | | 0.0858*** |
| | | | | | | | (2.73) |
| AUM (t) | 0.0164 | 0.0144 | 0.0131 | 0.0222 | 0.0156 | 0.0206 | 0.0188 |
| | (0.68) | (0.60) | (0.55) | (0.91) | (0.65) | (0.85) | (0.79) |
| Abn Ret (t) | 0.1042*** | 0.1043*** | 0.1043*** | 0.1044*** | 0.1042*** | 0.1044*** | 0.1044*** |
| | (4.99) | (4.99) | (4.98) | (4.99) | (4.98) | (4.99) | (4.99) |
| Date FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| Number Firms | 557 | 557 | 557 | 557 | 557 | 557 | 557 |
| Observations | 43435 | 43435 | 43435 | 43435 | 43435 | 43435 | 43435 |

Table 4: Information Acquisition and Performance: Continuous Acquisition Measure

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). AUM is also standardized for interpretation. Regressions contain year-month fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Downloads | 0.0308*** | | | | | | |
| | (4.06) | | | | | | |
| Downloads 10K/Q | | 0.0354*** | | | | | |
| | | (3.92) | | | | | |
| Downloads 8K | | | 0.0408*** | | | | |
| | | | (4.04) | | | | |
| Downloads 4 | | | | 0.0282* | | | |
| | | | | (1.87) | | | |
| Downloads 13d | | | | | 0.0590*** | | |
| | | | | | (3.03) | | |
| Downloads 13f | | | | | | 0.0380** | |
| | | | | | | (2.29) | |
| Downloads 13g | | | | | | | 0.0501*** |
| | | | | | | | (2.67) |
| AUM (t) | 0.0068 | 0.0082 | 0.0075 | 0.0212 | 0.0171 | 0.0203 | 0.0180 |
| | (0.28) | (0.33) | (0.31) | (0.87) | (0.69) | (0.83) | (0.74) |
| Abn Ret (t) | 0.1042*** | 0.1042*** | 0.1042*** | 0.1044*** | 0.1044*** | 0.1045*** | 0.1044*** |
| | (4.98) | (4.99) | (4.98) | (4.98) | (4.99) | (4.99) | (4.99) |
| Date FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| Number Firms | 557 | 557 | 557 | 557 | 557 | 557 | 557 |
| Observations | 43435 | 43435 | 43435 | 43435 | 43435 | 43435 | 43435 |

## Table 5: Information Acquisition and Performance: Within-Fund Variation

The table presents the within-fund relation between download activity in month $t$ and a fund's abnormal return (measured in percent) in month $t+1$. Abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. Panel A uses hedge-fund fixed effects. "Any Download" indicates whether the fund accessed any filings in month $t$. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). Panel B uses a measure of abnormal downloads. For each fund-month, a standardized trailing download measure is calculated as the fund-month's downloads in excess of the fund's trailing 24 month average downloads, divided by the standard deviation of the fund's download activity over the trailing 24-month period. If there is no variation in download activity over the prior 24 months, the standardized trailing download measure is set to zero if the month's number of downloads is zero, or is set to an arbitrarily large (small) number if the month's number of downloads is greater (less) than the fund's trailing average monthly download. "Abnormal Downloads" is the $p$-value resulting from applying the standard normal distribution function to the standardized trailing download measure. Thus, "Abnormal Downloads" takes values from 0 to 1. "High (Low) Abnormal Downloads" is an indicator variable for Abnormal Downloads taking a value greater than 0.75 (less than 0.25). AUM is standardized for interpretation. All regressions contain year-month fixed effects, and columns 2 and 4 in Panel A contain fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Panel A: Fund Fixed Effects*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Any Download | 0.1258*** | 0.0776* | | |
| | (3.37) | (1.82) | | |
| Downloads | | | 0.0308*** | 0.0235** |
| | | | (4.06) | (2.29) |
| AUM (t) | 0.0164 | -0.4795*** | 0.0068 | -0.4833*** |
| | (0.68) | (-7.00) | (0.28) | (-7.03) |
| Abn Ret (t) | 0.1042*** | 0.0749*** | 0.1042*** | 0.0749*** |
| | (4.99) | (3.62) | (4.98) | (3.62) |
| Firm FE | No | Yes | No | Yes |
| Date FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.09 | 0.08 | 0.09 |
| Number Firms | 557 | 556 | 557 | 556 |
| Observations | 43435 | 43434 | 43435 | 43434 |

*Panel B: Abnormal Time-Varying Strategies*

| | Dependent Variable: Abnormal Return (t+1) | |
|---|---|---|
| | (1) | (2) |
| Abnormal Downloads(t) | 0.1063** | |
| | (2.41) | |
| High Abnormal Downloads(t) | | 0.1118*** |
| | | (3.01) |
| Low Abnormal Downloads(t) | | 0.0447 |
| | | (1.08) |
| AUM (t) | 0.0312 | 0.0294 |
| | (1.35) | (1.28) |
| Abn Ret (t) | 0.1004*** | 0.1004*** |
| | (4.64) | (4.64) |
| Date FE | Yes | Yes |
| Fund FE | No | No |
| Adjusted $R^2$ | 0.08 | 0.08 |
| Number Firms | 555 | 555 |
| Observations | 42321 | 42321 |

Table 6: The Return/Information Acquisition Relation and Filing Characteristics

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The relation is separately estimated based on where various characteristics of viewed filings fall in their distributions. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). In Panel A, "Downloads" is interacted with indicator variables for whether the median characteristic of a fund's viewed filings is in the top quartile, the bottom quartile, or the interquartile range for the following filing characteristics: the age (in days) of the accessed 10-K/Qs, the file size (in KB) of the accessed 10-K/Qs, the level of textual uncertainty in the accessed 10-K/Qs (measured using the proportion of uncertain words determined using the Loughran and McDonald (2011) lexicon), the number of other hedge funds viewing the accessed 10-K/Qs, and the intensity with which the hedge fund tracked the filer (measured as number of downloads of firm filings in prior months). In each case, the median is taken within firm-month across all 10-K/Qs accessed by the fund. The quartile indicators are determined across all fund-months with non-zero EDGAR usage. Panel B reports the profitability relation when interacting the latter four filing characteristic quartile indicator variables with the filing age quartile indicator variables. AUM and the median log market capitalization of viewed stocks are standardized. Regressions contain year-month and fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Panel A: Filing Characteristics*

| | Dependent Variable: Abnormal Return (t+1) | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Filing Characteristic | Age | File Size | Uncertainty | Other HF Views | Tracked |
| Downloads 10K/Q | | | | | |
| - x Top Quartile Indicator | 0.0287* | 0.0120 | 0.0485*** | 0.0428** | 0.0361** |
| | (1.75) | (0.63) | (3.18) | (2.05) | (2.52) |
| - x Interquartile Indicator | 0.0110 | 0.0187 | 0.0210 | 0.0260* | 0.0142 |
| | (0.80) | (1.35) | (1.57) | (1.92) | (1.01) |
| - x Bottom Quartile Indicator | 0.0353** | 0.0377** | -0.0026 | 0.0077 | 0.0131 |
| | (2.22) | (2.52) | (-0.16) | (0.54) | (0.81) |
| Median Ln Market Cap | -0.0085 | -0.0082 | -0.0095 | -0.0130 | -0.0084 |
| | (-0.40) | (-0.39) | (-0.45) | (-0.62) | (-0.40) |
| AUM (t) | -0.4814*** | -0.4826*** | -0.4828*** | -0.4828*** | -0.4840*** |
| | (-7.00) | (-7.01) | (-7.04) | (-7.03) | (-7.04) |
| Abn Ret (t) | 0.0750*** | 0.0749*** | 0.0750*** | 0.0750*** | 0.0749*** |
| | (3.63) | (3.62) | (3.62) | (3.62) | (3.62) |
| Date FE | Yes | Yes | Yes | Yes | Yes |
| Fund FE | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Number Firms | 556 | 556 | 556 | 556 | 556 |
| Observations | 43434 | 43434 | 43434 | 43434 | 43434 |

*Panel B: Interactions of Filing Characteristics with Filing Age*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| Filing Characteristic | (1) File Size | (2) Uncertainty | (3) Other HF Views | (4) Tracked |
| Downloads 10K/Q | | | | |
| - x Top Quartile Characteristic Indicator | | | | |
| - x Top Quartile Age Indicator | -0.0126 | 0.0236 | 0.1392*** | 0.0357* |
| | (-0.40) | (0.79) | (2.69) | (1.96) |
| - x Interquartile Age Indicator | 0.0103 | 0.0739*** | 0.0370 | 0.0282 |
| | (0.47) | (3.75) | (1.17) | (1.63) |
| - x Bottom Quartile Age Indicator | 0.0291 | 0.0168 | 0.0388 | 0.0551*** |
| | (0.93) | (0.68) | (1.52) | (3.08) |
| Downloads 10K/Q | | | | |
| - x Interquartile Characteristic Indicator | | | | |
| - x Top Quartile Age Indicator | 0.0248 | 0.0306* | 0.0209 | 0.0183 |
| | (1.26) | (1.67) | (1.05) | (0.78) |
| - x Interquartile Age Indicator | 0.0124 | 0.0091 | 0.0204 | 0.0045 |
| | (0.81) | (0.58) | (1.30) | (0.27) |
| - x Bottom Quartile Age Indicator | 0.0267 | 0.0397** | 0.0478** | 0.0336* |
| | (1.43) | (2.40) | (2.12) | (1.91) |
| Downloads 10K/Q | | | | |
| - x Bottom Quartile Characteristic Indicator | | | | |
| - x Top Quartile Age Indicator | 0.0674*** | 0.0262 | 0.0325* | 0.0403 |
| | (2.93) | (1.06) | (1.67) | (1.37) |
| - x Interquartile Age Indicator | 0.0113 | -0.0357* | -0.0101 | 0.0005 |
| | (0.65) | (-1.67) | (-0.64) | (0.03) |
| - x Bottom Quartile Age Indicator | 0.0676** | 0.0375 | 0.0065 | 0.0142 |
| | (2.56) | (1.18) | (0.21) | (0.43) |
| Median Ln Market Cap | -0.0084 | -0.0093 | -0.0154 | -0.0088 |
| | (-0.40) | (-0.45) | (-0.73) | (-0.42) |
| AUM (t) | -0.4819*** | -0.4809*** | -0.4824*** | -0.4832*** |
| | (-7.00) | (-7.00) | (-7.00) | (-7.02) |
| Abn Ret (t) | 0.0750*** | 0.0749*** | 0.0749*** | 0.0750*** |
| | (3.62) | (3.62) | (3.62) | (3.62) |
| Date FE | Yes | Yes | Yes | Yes |
| Fund FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.09 | 0.09 | 0.09 | 0.09 |
| Number Firms | 556 | 556 | 556 | 556 |
| Observations | 43434 | 43434 | 43434 | 43434 |

Table 7: Funds Perform Better When Viewed Stocks Perform Better

The table reports the relation between performance of stocks whose filings are viewed by a fund and the fund's abnormal returns (measured in percent) in month $t+1$. Cumulative abnormal returns (in excess of the market return) are calculated for each stock whose 10-K/Q filings were viewed by a fund in a given month for the 30-trading day window following the filing viewing. The explanatory variables are the average, median, minimum, and maximum values of these stock-level excess returns for each fund-month. For fund-months with no access activity, these variables take a value of zero. These stock-level summary statistics are standardized by the standard deviation calculated conditional on non-zero access activity. Standard errors are clustered by fund. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Panel A: Time Fixed Effects*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Average Return of Viewed Stocks | 0.0550** | | | |
| | (2.46) | | | |
| Median Return of Viewed Stocks | | 0.0485** | | |
| | | (2.29) | | |
| Min Return of Viewed Stocks | | | -0.0427** | |
| | | | (-2.21) | |
| Max Return of Viewed Stocks | | | | 0.0674*** |
| | | | | (3.52) |
| AUM (t) | 0.0267 | 0.0269 | 0.0181 | 0.0159 |
| | (1.35) | (1.36) | (0.89) | (0.79) |
| Abn Ret (t) | 0.1044*** | 0.1044*** | 0.1044*** | 0.1043*** |
| | (8.75) | (8.75) | (8.75) | (8.74) |
| Date FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.08 | 0.08 | 0.08 |
| Number Firms | 557 | 557 | 557 | 557 |
| Observations | 43435 | 43435 | 43435 | 43435 |

*Panel B: Time and Fund Fixed Effects*

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Average Return of Viewed Stocks | 0.0592*** | | | |
| | (2.62) | | | |
| Median Return of Viewed Stocks | | 0.0570*** | | |
| | | (2.67) | | |
| Min Return of Viewed Stocks | | | 0.0113 | |
| | | | (0.44) | |
| Max Return of Viewed Stocks | | | | 0.0363 |
| | | | | (1.54) |
| AUM (t) | -0.4790*** | -0.4793*** | -0.4780*** | -0.4813*** |
| | (-8.13) | (-8.13) | (-8.10) | (-8.18) |
| Abn Ret (t) | 0.0748*** | 0.0748*** | 0.0749*** | 0.0749*** |
| | (6.24) | (6.25) | (6.26) | (6.25) |
| Date FE | Yes | Yes | Yes | Yes |
| Fund FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0 | 0 | 0 | 0 |
| Number Firms | 556 | 556 | 556 | 556 |
| Observations | 43434 | 43434 | 43434 | 43434 |

Table 8: Information Acquisition Predicts Firm-Specific Events

The table reports the relation between whether hedge funds acquired a stock's 10-K/Q filings during a calendar week and the occurrence of 8-K filings in subsequent calendar weeks, using the full SEC EDGAR filing database from 2003 to 2017. "Any 8-K Filing" is 1 if an 8-K is filed in week $t+k$ and 0 otherwise. "Any Hedge Funds Looked" is 1 if a hedge fund looked at a stock's 10-K/Q filings in week $t$ and zero otherwise. "Log Total Views (t)" is calculated as Ln(1+Views), where Views is the total number of views of a given stock's filings by any EDGAR user in week t. The unit of observation of the panel is a stock-week. We exclude earnings announcement windows by excluding any weeks $t$ for which a company filed a 10-K/Q in weeks $t$, $t+1$, or $t+2$. All regressions contain year-week fixed effects and stock fixed effects. Standard errors are clustered by year-week and company. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Any 8-K Filing Week $t+k$ | | |
|---|---|---|---|
| | t+1 | t+2 | t+3 |
| | (1) | (2) | (3) |
| Any Hedge Funds Looked (t) | 0.0215*** | 0.0165*** | 0.0155*** |
| | (18.59) | (13.15) | (9.07) |
| Log Total Views (t) | 0.0147*** | 0.0140*** | 0.0151*** |
| | (26.17) | (21.80) | (17.87) |
| Year-Week FE | Yes | Yes | Yes |
| Stock FE | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.09 | 0.10 | 0.11 |
| Number Companies | 20387 | 20387 | 20382 |
| Observations | 7182789 | 7182789 | 7164014 |

Table 9: Information Acquisition Predicts Stock Return Magnitudes around Material Events
The table reports the relation between whether hedge funds acquired a stock's 10-K/Q filings in week $t$ and the magnitude of abnormal weekly returns (measured in percent and in excess of the market return) for weeks $t+k$ conditional on the stock disclosing a Form-8K in week $t+1$. "Any Hedge Funds Looked" is 1 if a hedge fund looked at a stock's 10-K/Q filings in week $t$ and zero otherwise. "Log Total Views (t)" is calculated as Ln(1+Views), where Views is the total number of views of a given stock's filings by any EDGAR user in week t. The unit of observation of the panel is a stock-week. We exclude earnings announcement windows by excluding any weeks $t$ for which a company filed a 10-K/Q in weeks $t$, $t+1$, or $t+2$. All regressions contain year-week fixed effects and stock fixed effects. Returns are winsorized at the 1% level. Standard errors are clustered by year-week and company. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Absolute Abnormal Weekly Return (t+k) | | |
|---|---|---|---|
| | t+1 | t+2 | t+3 |
| | (1) | (2) | (3) |
| Any Hedge Funds Looked (t) | 0.0974*** | 0.0893*** | 0.0878*** |
| | (4.57) | (4.58) | (4.76) |
| Log Total Views (t) | -0.0326** | 0.0485*** | 0.0429*** |
| | (-2.41) | (4.08) | (3.62) |
| Absolute Return (t) | 0.1122*** | 0.0811*** | 0.0745*** |
| | (39.38) | (30.88) | (29.12) |
| Log Market Capitalization (t) | -0.9807*** | -0.9767*** | -0.9556*** |
| | (-35.32) | (-35.83) | (-35.06) |
| Year-Week FE | Yes | Yes | Yes |
| Stock FE | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.22 | 0.25 | 0.25 |
| Number Companies | 8145 | 8145 | 8145 |
| Observations | 424148 | 424148 | 424148 |

Table 10: Event Types Predicted by Information Acquisition

The table reports the relation between whether hedge funds acquired a stock's 10-K/Q filings or other filings during a calendar week and the occurrence of various subsequent events at the two week horizon. The dependent variable is an indicator variable (expressed in %) of whether a given event occurred in week $t+2$. In both panels, "Any Hedge Funds Looked-10K/Q" is 1 if a hedge fund looked at a stock's 10-K/Q filings in week $t$ and zero otherwise. In Panel B, "Any Hedge Funds Looked-Other Forms" is 1 if a hedge fund looked at a stock's 8-K, 4, 13-D, 13-F, or 13-G in week $t$ and zero otherwise. "Log Total Views (t)" is calculated as Ln(1+Views), where Views is the total number of views of a given stock's filings by any EDGAR user in week t. The unit of observation of the panel is a stock-week. We exclude earnings announcement windows by excluding any weeks $t$ for which a company filed a 10-K/Q in weeks $t$, $t+1$, or $t+2$. All regressions contain year-week fixed effects and stock fixed effects as well as indicator variables for whether the stock filed new 10-K/Q, 8-K, 4, 13-D, 13-F, or 13-G filings in week $t$. Standard errors are clustered by year-week and company. $t$ statistics are in parentheses, and statistical significance is represented by * $p<0.10$, ** $p<0.05$, and *** $p<0.01$. Unconditional frequencies of each event type are reported in % at the bottom of each column.

*Panel A: Financial Statement Views Predict Various Events*

| | Dependent Variable: Any Event Type in Week $t+2$ (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Internal Events | | | | | External Events | | | |
| Category | Stock Prices | M&A | Equity Actions | Credit Actions | Bankruptcy | Insider Trading | Analyst Ratings | Credit Ratings | Legal | Regulatory |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Any HF Looks - 10K/Q (t) | 0.1149*** | -0.0345 | 0.0275 | 0.0504*** | 0.0089*** | 0.2612*** | 0.1376*** | 0.1907*** | 0.0310* | 0.0140* |
| | (3.91) | (-1.02) | (0.76) | (2.87) | (3.10) | (3.26) | (2.68) | (6.21) | (1.86) | (1.89) |
| Log Total Views (t) | -0.0223 | 0.2393*** | 0.3113*** | 0.0795*** | 0.0023 | 1.1520*** | 0.3271*** | 0.1638*** | 0.0973*** | 0.0107 |
| | (-0.89) | (9.03) | (8.77) | (6.43) | (1.13) | (10.97) | (6.47) | (6.52) | (7.10) | (1.55) |
| Any Category News (t) | 0.0250*** | 0.0329*** | 0.0366*** | 0.0325*** | 0.0261** | 0.1432*** | 0.0089*** | 0.0232*** | 0.0232*** | 0.0244*** |
| | (5.07) | (17.03) | (10.71) | (11.81) | (2.43) | (55.06) | (6.53) | (6.49) | (7.13) | (2.67) |
| Any Category News (t-1) | 0.0279*** | 0.0285*** | 0.0282*** | 0.0119*** | 0.0279** | 0.0832*** | 0.0117*** | 0.0169*** | 0.0206*** | 0.0204*** |
| | (5.22) | (15.88) | (9.40) | (4.94) | (2.45) | (39.49) | (8.42) | (5.23) | (5.86) | (2.79) |
| Any News (t) | 0.0009*** | 0.0001 | 0.0015*** | 0.0003** | 0.0000 | 0.0126*** | 0.0010** | 0.0004** | 0.0003*** | 0.0001 |
| | (4.18) | (0.50) | (4.02) | (2.33) | (0.39) | (13.22) | (2.33) | (2.30) | (2.72) | (1.23) |
| Any News (t-1) | -0.0001 | -0.0000 | -0.0003 | 0.0004*** | 0.0001** | 0.0075*** | 0.0004 | 0.0001 | 0.0003*** | 0.0002*** |
| | (-0.49) | (-0.03) | (-0.83) | (2.92) | (2.58) | (8.99) | (1.10) | (0.79) | (2.78) | (2.95) |
| Abnormal Return (t) | -0.0028** | 0.0043*** | -0.0009 | 0.0007 | -0.0013*** | 0.0666*** | 0.0026 | -0.0024* | -0.0033*** | -0.0015*** |
| | (-2.13) | (3.23) | (-0.32) | (0.76) | (-4.12) | (13.90) | (0.98) | (-1.86) | (-4.15) | (-2.61) |
| Abnormal Return (t-1) | -0.0039*** | 0.0025* | -0.0041* | 0.0007 | -0.0012*** | 0.0484*** | -0.0001 | -0.0029** | -0.0031*** | -0.0013** |
| | (-2.88) | (1.72) | (-1.84) | (0.92) | (-3.87) | (10.57) | (-0.06) | (-2.42) | (-3.88) | (-2.55) |
| Unconditional Frequency (%) | 0.94 | 1.86 | 1.97 | 0.56 | 0.01 | 12.66 | 3.42 | 1.08 | 0.41 | 0.12 |
| Year-Week FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Stock FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| New Filing Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.05 | 0.04 | 0.03 | 0.01 | 0.19 | 0.07 | 0.08 | 0.04 | 0.05 |
| Number Companies | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 |
| Observations | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 |

*Panel B: Financial Statement Views vs. Views of Other Form*

| | Dependent Variable: Any Event Type in Week $t+2$ (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Internal Events | | | | | External Events | | | |
| Category | Stock Prices | M&A | Equity Actions | Credit Actions | Bankruptcy | Insider Trading | Analyst Ratings | Credit Ratings | Legal | Regulatory |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Any HF Looks - 10K/Q (t) | 0.0938*** | -0.0560* | 0.0163 | 0.0434** | 0.0075*** | 0.2325*** | 0.1557*** | 0.1566*** | 0.0232 | 0.0131* |
| | (3.28) | (-1.69) | (0.44) | (2.46) | (2.66) | (2.93) | (3.00) | (5.49) | (1.42) | (1.75) |
| Any HF Looks - Other Forms (t) | 0.1144*** | 0.1168*** | 0.0608* | 0.0379** | 0.0078** | 0.1555* | -0.0981** | 0.1848*** | 0.0422** | 0.0052 |
| | (3.69) | (3.60) | (1.65) | (2.15) | (2.11) | (1.92) | (-2.21) | (4.41) | (2.19) | (0.52) |
| Log Total Views (t) | -0.0230 | 0.2386*** | 0.3110*** | 0.0793*** | 0.0022 | 1.1511*** | 0.3277*** | 0.1627*** | 0.0970*** | 0.0106 |
| | (-0.91) | (8.99) | (8.76) | (6.40) | (1.11) | (10.96) | (6.48) | (6.50) | (7.06) | (1.54) |
| Any Category News (t) | 0.0250*** | 0.0329*** | 0.0366*** | 0.0325*** | 0.0261** | 0.1432*** | 0.0089*** | 0.0231*** | 0.0232*** | 0.0244*** |
| | (5.06) | (17.03) | (10.70) | (11.81) | (2.43) | (55.06) | (6.53) | (6.49) | (7.14) | (2.67) |
| Any Category News (t-1) | 0.0278*** | 0.0284*** | 0.0282*** | 0.0119*** | 0.0279** | 0.0832*** | 0.0117*** | 0.0169*** | 0.0206*** | 0.0204*** |
| | (5.21) | (15.83) | (9.39) | (4.93) | (2.45) | (39.49) | (8.42) | (5.23) | (5.86) | (2.79) |
| Any News (t) | 0.0009*** | 0.0002 | 0.0015*** | 0.0003** | 0.0000 | 0.0126*** | 0.0010** | 0.0005** | 0.0003*** | 0.0001 |
| | (4.23) | (0.53) | (4.03) | (2.34) | (0.41) | (13.24) | (2.31) | (2.39) | (2.75) | (1.24) |
| Any News (t-1) | -0.0001 | -0.0000 | -0.0003 | 0.0004*** | 0.0001** | 0.0074*** | 0.0004 | 0.0001 | 0.0003*** | 0.0002*** |
| | (-0.55) | (-0.06) | (-0.85) | (2.89) | (2.55) | (8.97) | (1.13) | (0.68) | (2.75) | (2.94) |
| Abnormal Return (t) | -0.0028** | 0.0044*** | -0.0008 | 0.0007 | -0.0013*** | 0.0667*** | 0.0025 | -0.0023* | -0.0033*** | -0.0015*** |
| | (-2.12) | (3.25) | (-0.31) | (0.77) | (-4.11) | (13.91) | (0.97) | (-1.83) | (-4.13) | (-2.61) |
| Abnormal Return (t-1) | -0.0039*** | 0.0026* | -0.0041* | 0.0008 | -0.0012*** | 0.0484*** | -0.0001 | -0.0029** | -0.0031*** | -0.0013** |
| | (-2.87) | (1.73) | (-1.84) | (0.93) | (-3.87) | (10.57) | (-0.06) | (-2.40) | (-3.88) | (-2.54) |
| Unconditional Frequency (%) | 0.94 | 1.86 | 1.97 | 0.56 | 0.01 | 12.66 | 3.42 | 1.08 | 0.41 | 0.12 |
| Year-Week FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Stock FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| New Filing Controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.05 | 0.04 | 0.03 | 0.01 | 0.19 | 0.07 | 0.08 | 0.04 | 0.05 |
| Number Companies | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 | 8417 |
| Observations | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 | 2218169 |

Table 11: Robotic and Timely Information Acquisition

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. In Panel A, a fund's monthly download activity is determined to be robot-initiated if a fund downloaded 50 or more filings in a day and the median time interval between downloads was less than 30 seconds that day. If a fund's activity is robot-initiated in more than one month in the sample, then the fund is deemed a "Scraper." In Panel B, funds are classified as timely information acquirors based on the fraction of downloads occurring on the filing date. Specifically, for each fund-month, we calculate the fraction of files acquired that were released on the date the fund acquired the file. We then take the mean of this fraction across all months a fund is in the sample. If in the cross-section of funds, the fund has an average fraction of views of new files that exceeds the 75th percentile of 0.09, we set the indicator variable "Timely" to one. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. "Any Download" indicates whether the fund accessed any filings in month $t$. "Downloads" is the fund's standardized log number of downloads in month $t$, Ln(1+# of downloads). "Abnormal Downloads" is the rolling measure of abnormal acquisition behavior described in Table 5. AUM is standardized for interpretation. Regressions contain year-month fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Panel A: Robotic Information Acquisition*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Scraper | 0.1514*** | 0.3072*** | 0.2609*** | 0.1908*** |
| | (3.50) | (4.22) | (4.07) | (3.01) |
| Any Downloads | | 0.1197*** | | |
| | | (2.84) | | |
| Any Downloads x Scraper | | -0.2104*** | | |
| | | (-2.81) | | |
| Downloads | | | 0.0393*** | |
| | | | (3.53) | |
| Downloads x Scraper | | | -0.0491*** | |
| | | | (-3.42) | |
| Abnormal Downloads | | | | 0.1158** |
| | | | | (2.03) |
| Abnormal Downloads x Scraper | | | | -0.0871 |
| | | | | (-0.95) |
| AUM (t) | 0.0122 | 0.0072 | 0.0022 | 0.0171 |
| | (0.49) | (0.29) | (0.09) | (0.71) |
| Abn Ret (t) | 0.1041*** | 0.1039*** | 0.1038*** | 0.1000*** |
| | (4.98) | (4.98) | (4.97) | (4.63) |
| Date FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.08 | 0.08 | 0.08 |
| Number Firms | 557 | 557 | 557 | 555 |
| Observations | 43435 | 43435 | 43435 | 42321 |

*Panel B: Timely Information Acquisition*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Timely | 0.0140 | -0.0594 | -0.0035 | 0.0442 |
| | (0.29) | (-0.66) | (-0.05) | (0.58) |
| Any Downloads | | 0.0996** | | |
| | | (2.37) | | |
| Any Downloads x Timely | | 0.1126 | | |
| | | (1.17) | | |
| Downloads | | | 0.0287*** | |
| | | | (3.27) | |
| Downloads x Timely | | | 0.0086 | |
| | | | (0.57) | |
| Abnormal Downloads | | | | 0.1212** |
| | | | | (2.20) |
| Abnormal Downloads x Timely | | | | -0.0634 |
| | | | | (-0.60) |
| AUM (t) | 0.0266 | 0.0160 | 0.0067 | 0.0308 |
| | (1.11) | (0.66) | (0.27) | (1.32) |
| Abn Ret (t) | 0.1045*** | 0.1041*** | 0.1042*** | 0.1004*** |
| | (4.99) | (4.99) | (4.98) | (4.64) |
| Date FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.08 | 0.08 | 0.08 | 0.08 |
| Number Firms | 557 | 557 | 557 | 555 |
| Observations | 43435 | 43435 | 43435 | 42321 |

Table 12: Financial Statement Analysis Specialists vs. Generalists

This table compares the performance-usage relations of funds that specialize in processing form 10-K/Q filings (Panel A) and those that do not (Panel B). A fund is classified as a Form 10-K/Q specialist or a generalist. Financial statement analysis specialists are defined as funds for which both (1) the proportion of their total EDGAR usage that is due to 10-K/Q filings and (2) the total number of 10-K/Q filings they access (scaled by months in the sample) are above the cross-sectional medians for each measure. Generalists are non-10-K/Q specialists. For specialists and generalists, the table reports the relation between the fund's abnormal return (measured in percent) in month $t+1$ and both an indicator variable for download activity and a continuous measure of download activity in month $t$. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. AUM is standardized for interpretation. All regressions contain year-month fixed effects, and columns 2 and 4 contain fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Panel A: Funds Specializing in 10K/Q Information Acquisition Strategy*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Any 10K/Q | 0.0525 | 0.0040 | | |
| | (0.99) | (0.07) | | |
| Downloads 10K/Q | | | 0.0127 | 0.0039 |
| | | | (1.30) | (0.21) |
| AUM (t) | 0.0442 | -0.3321*** | 0.0419 | -0.3330*** |
| | (1.40) | (-4.16) | (1.32) | (-4.14) |
| Abn Ret (t) | 0.1371*** | 0.1066*** | 0.1371*** | 0.1066*** |
| | (4.08) | (3.15) | (4.08) | (3.15) |
| Date FE | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | No | Yes |
| Adjusted $R^2$ | 0.11 | 0.12 | 0.11 | 0.12 |
| Number Firms | 182 | 181 | 182 | 181 |
| Observations | 15430 | 15429 | 15430 | 15429 |

*Panel B: Funds with Generalist Information Acquisition Strategy*

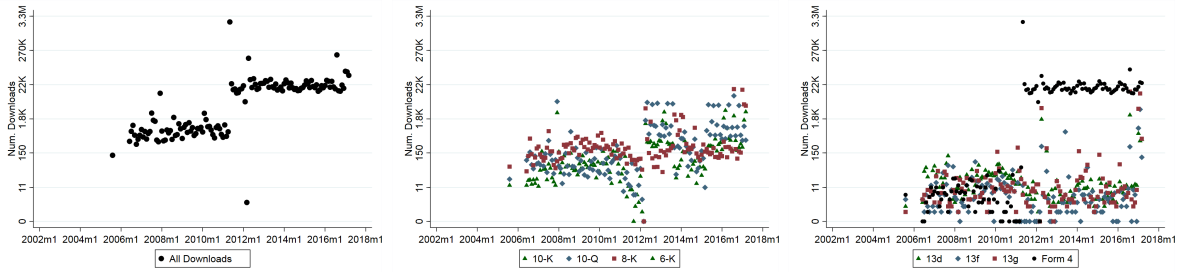
| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Any 10K/Q | 0.1305*** | 0.1138*** | | |
| | (3.13) | (2.84) | | |
| Downloads 10K/Q | | | 0.0533*** | 0.0465*** |
| | | | (3.90) | (2.85) |
| AUM (t) | -0.0083 | -0.5494*** | -0.0180 | -0.5558*** |
| | (-0.27) | (-6.29) | (-0.57) | (-6.37) |
| Abn Ret (t) | 0.0919*** | 0.0629*** | 0.0917*** | 0.0629*** |
| | (4.62) | (3.19) | (4.61) | (3.19) |
| Date FE | Yes | Yes | Yes | Yes |
| Fund FE | No | Yes | No | Yes |
| Adjusted $R^2$ | 0.07 | 0.08 | 0.07 | 0.08 |
| Number Firms | 375 | 375 | 375 | 375 |
| Observations | 28005 | 28005 | 28005 | 28005 |

Figure 1: Download activity of notable investment funds

The figure plots the time series of EDGAR usage by some notable hedge funds. The left-hand column plots total downloads. The center column plots downloads of filings containing corporate financial information. The right column plots downloads of filings concerning investor reports (including firm insiders). Downloads are plotted on a log scale. The time series have gaps in 2005-6 due to missing SEC server log files.

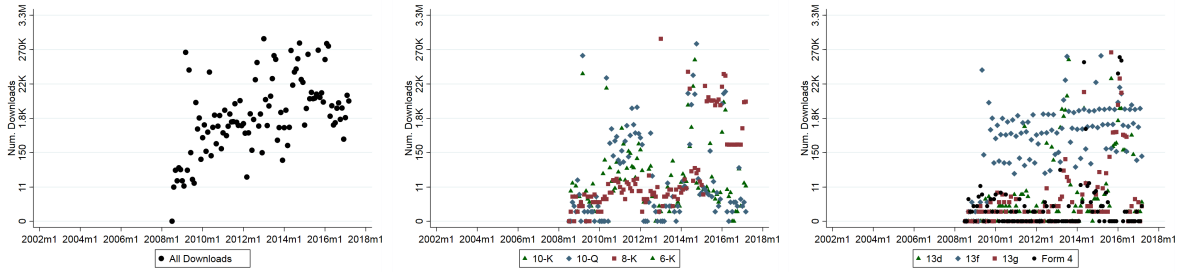
Panel A. Renaissance Technologies

(a) All Downloads (b) Company Reports (c) Investor Reports




Panel B. PanAgora

(d) All Downloads (e) Company Reports (f) Investor Reports




Panel C. AQR

(g) All Downloads (h) Company Reports (i) Investor Reports

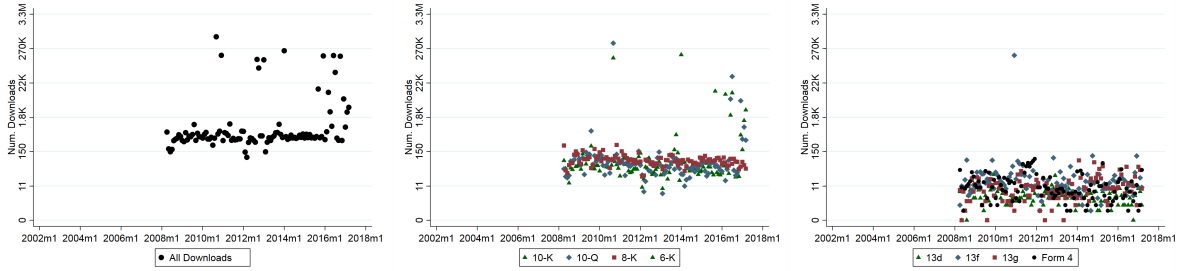
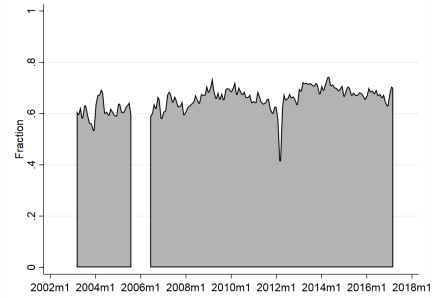


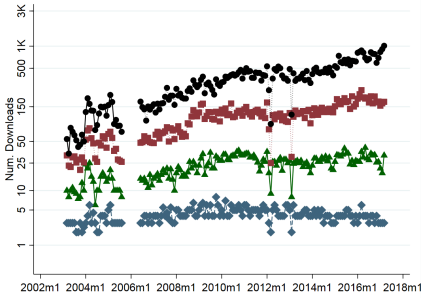
Figure 2: Time series of usage by form

The figure plots the time series of EDGAR usage by hedge funds. The left-hand column plots the fraction of the cross-section accessing a given file type. The right-hand column plots the time series of the cross-sectional 25th, 50th, 75th, and 90th percentiles of download activity of the indicated form type, conditional on a fund downloading that form type. Downloads are plotted on a log scale. The panel has a gap in 2005-6 due to missing SEC server log files.

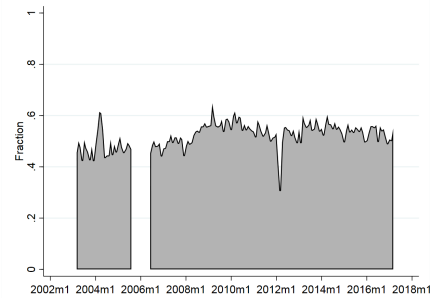
(a) All files



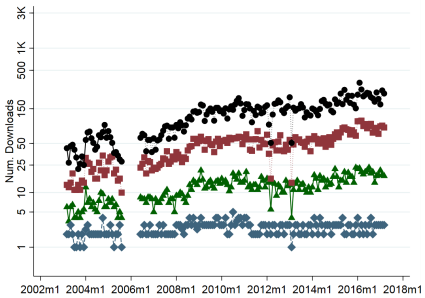

(b) All files



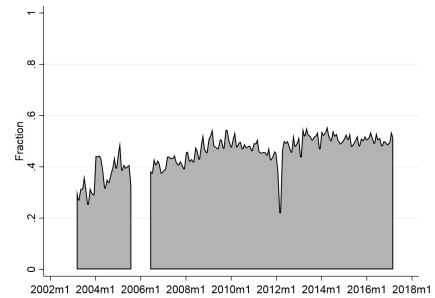

(c) 10-K/Q



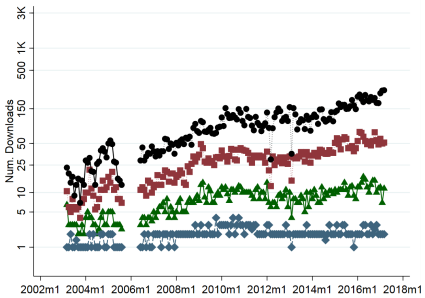

(d) 10-K/Q



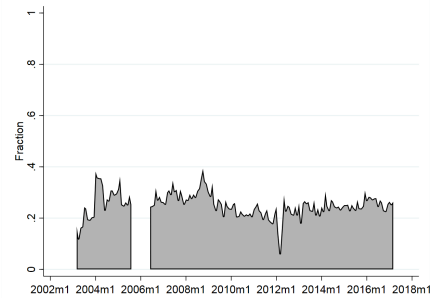

(e) 8-K




(f) 8-K




(g) Form 4




(h) Form 4

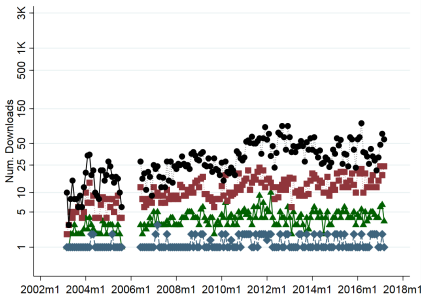
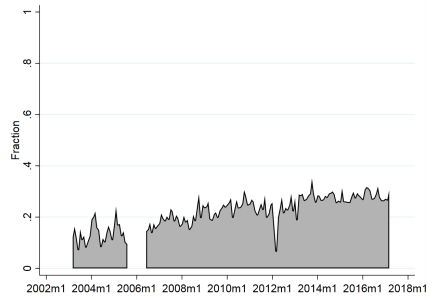
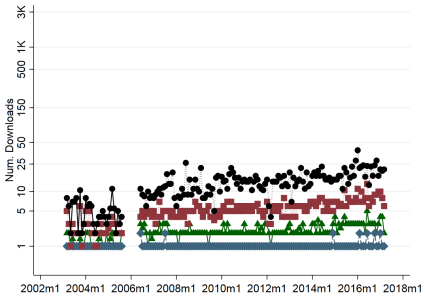


Figure 2: (continued) Time series of usage by form

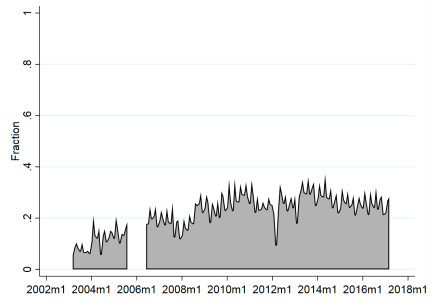
(i) 13-D



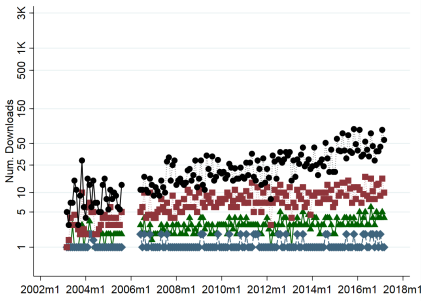

(j) 13-D



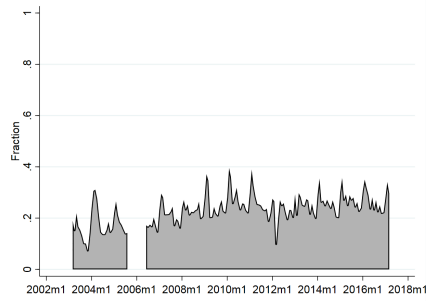

(k) 13-F




(l) 13-F




(m) 13-G




(n) 13-G

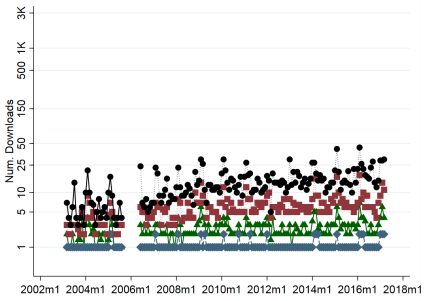
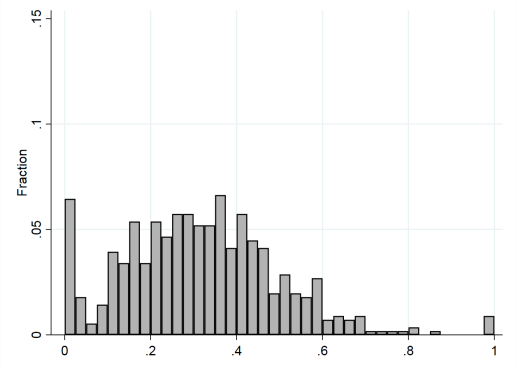


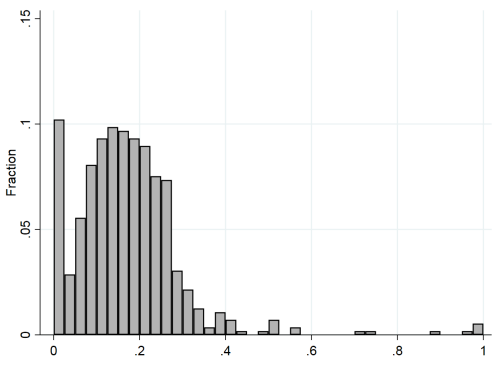
Figure 3: Cross-sectional distributions of the fraction of a fund's total usage due to form type

The figure plots the cross-sectional distributions of the fraction of all download activity for a fund that is due to a given form type. The vertical axis maximum value is 15% for panels (a)-(b) and 80% for the other panels.

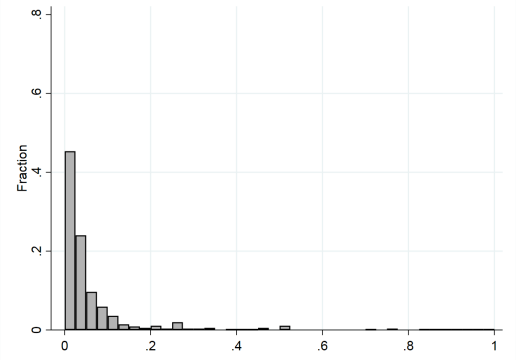
(a) 10-K/Q



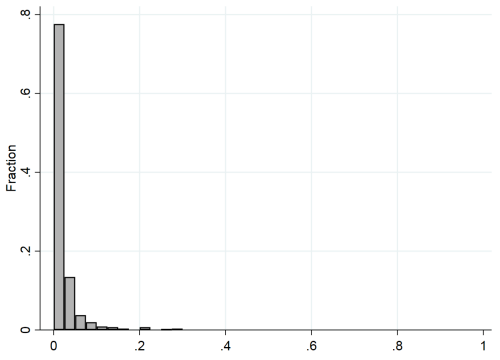

(b) 8-K



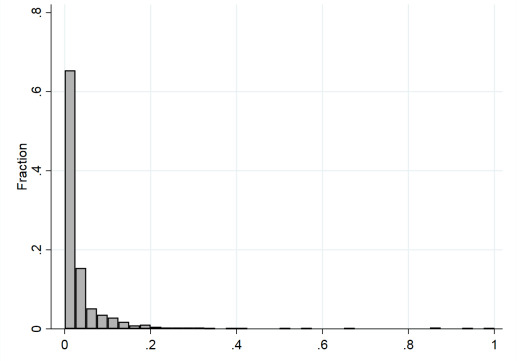

(c) Form 4




(d) 13-D




(e) 13-F




(f) 13-G

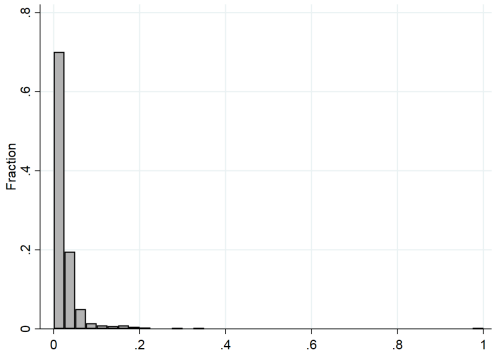
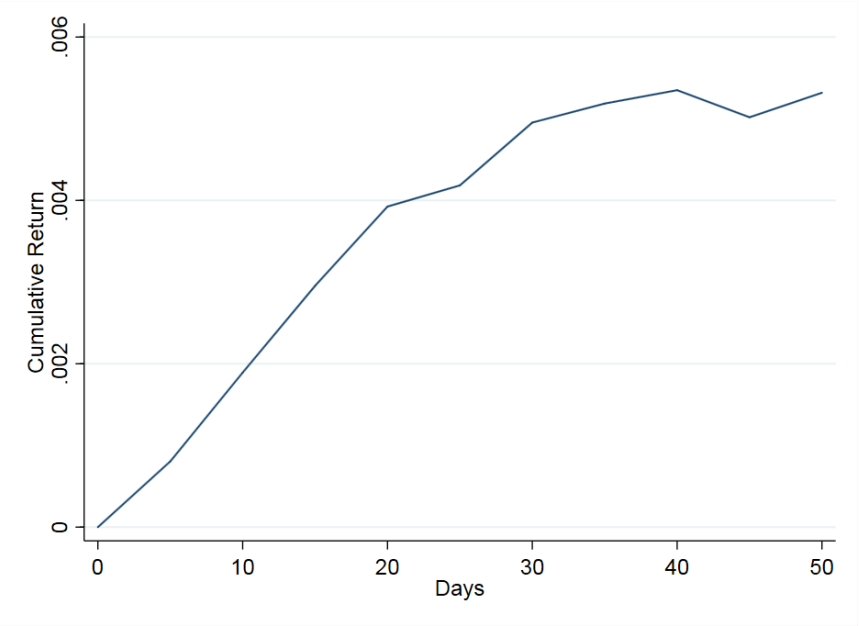


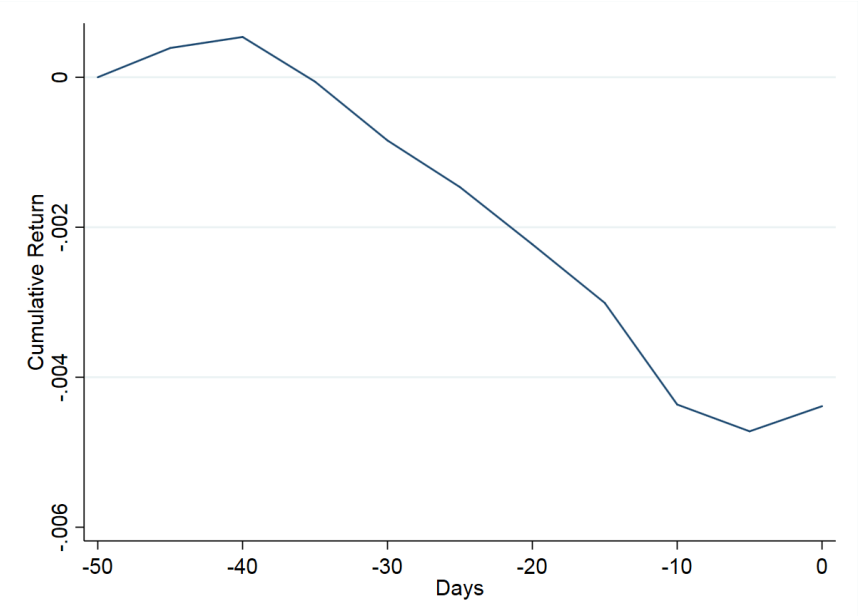
Figure 4: Cumulative Returns of Underlying Stocks with 10-K/Q Filings Viewed by Hedge Funds

The figure plots the average excess cumulative returns over the 50 trading days following a viewing of a firm's 10-K/Q. The second panel plots the average cumulative returns over the 50 trading days prior to the viewing of a firm's 10-K/Q. Excess returns are calculated relative to the market return.

(a) Post-Viewing Cumulative Return




(b) Pre-Viewing Cumulative Return



## Internet Appendix

This Internet Appendix contains supplementary analyses. These include the following:

1. Table IA.1 presents analysis of fund-level characteristics as determinants of hedge fund filing views.
2. Table IA.2 presents analysis of which firm level characteristics are associated with a firm's filings being viewed by hedge funds.
3. Table IA.3 replicates the tests in Table 3 with the addition of fund fixed effects.
4. Table IA.4 replicates the tests in Table 4 with the addition of fund fixed effects.
5. Table IA.5 replicates Table 3 from the paper under the Fung-Hsieh risk adjustments.
6. Table IA.6 replicates Table 4 from the paper under the Fung-Hsieh risk adjustments.
7. Table IA.7 replicates Table 5 from the paper under the Fung-Hsieh risk adjustments.
8. Table IA.8 replicates Table 6 (Panel A) under the Fung-Hsieh risk adjustments.
9. Figure IA.1 reports placebo tests of the significance of the return/acquisition relation shown in Table 3.
10. Figure IA.2 reports placebo tests of the significance of the return/acquisition relation shown in Table 4.

*IA.1. Determinants of public information acquisition by hedge funds*

Hedge funds' use of EDGAR varies systematically both over time and with fund characteristics. Table IA.1 reports regressions of a monthly indicator of public information acquisition by form type. The explanatory variables include fund characteristics as well as the lagged market excess return, a time trend, calendar month fixed effects, and the number of new filings on EDGAR that month of each type. The firm characteristics are fund age (log days since inception), log assets under management, incentive and management fees, lagged fund return, and factor loadings from the Fama-French Five Factors plus Momentum, estimated using the fund's full sample of returns. Consistent with the plots in Figure 2, the probabilities of accessing 8-Ks, 13-Ds, 13-Fs, and 13-Gs are increasing with time. There is

also evidence that funds are more likely to access filings of all types following months with negative market excess returns. In terms of firm characteristics, larger funds are more likely to access filings in a given month. Funds with greater exposure to the market (MKTRF Beta) tend to request fewer filings. When there is more public information of a particular type as proxied by more filings, funds are more likely to access information in annual/quarterly financials and disclosures of trading by insiders.

*IA.2. Determinants of which stocks are viewed*

What types of companies do hedge funds acquire public information about? We examine the characteristics of firms whose filings are downloaded by hedge funds. Specifically, we regress an indicator equal to 1 if any hedge fund accessed a given firm's filings in a given year, and 0 otherwise, on characteristics of that firm (as measured at the end of the prior year). We do this separately for each firm's 10-K/Qs, 8-Ks, and Form 4s. We include all Compustat firm-months available over our sample period. In calculating views, we exclude views from hedge fund companies that have side-by-side mutual funds, since we cannot determine whether the hedge funds specifically were accessing the files.[25] The results are reported in Table IA.2. On average, hedge funds are more likely to view filings associated with higher leverage firms and growth firms. These characteristics have the largest economic magnitudes, where a standard-deviation increase in market to book is associated with a 200% increase in the probability of a view and a standard-deviation increase in leverage is associated with a 300% increase. Several other characteristics are statistically significant determinants of views, but have a more modest economic impact. For example, smaller firms and firms that have recently issued equity are more likely to be viewed, while firms with higher idiosyncratic volatility and more tangible assets are less likely to be viewed. In general, these determinants are consistent across all three filing types examined.

[25]This concern does not affect the analysis of fund-level performance in the paper because these performance analyses use management company public information acquisition as an independent variable. Any noise induced by capturing mutual fund views should bias any coefficients in the performance regressions toward zero.

## Table IA.1: Determinants of Information Acquisition

The table reports regressions of whether a hedge fund downloaded a particular form in a given month on various fund and macroeconomic characteristics. The dependent variable is an indicator equal to 1 if the fund downloaded the filing type indicated at the top of the column, and 0 otherwise. Fund variables include the natural log of fund age since inception, the natural log of AUM, incentive fees, management fees, factor betas from the Fama-French 5-factor model plus Momentum, and lagged abnormal returns. Macroeconomic variables include the past month's market return and the number of SEC filings by type. Fixed effects for the calendar month are included to control for seasonality, and a time trend is included to test for increased usage of EDGAR over time. All independent variables are standardized. Standard errors are clustered by fund. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| | Any | 10-K/Q | 8-K | 4 | 13D | 13F | 13G |
| Log Age | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 |
| | (1.21) | (0.77) | (0.74) | (1.16) | (0.60) | (0.29) | (0.50) |
| Log AUM | 0.07*** | 0.10*** | 0.11*** | 0.08*** | 0.09*** | 0.08*** | 0.09*** |
| | (5.06) | (6.38) | (6.98) | (5.65) | (6.24) | (5.84) | (6.27) |
| Incentive Fee | -0.02 | -0.03* | -0.02 | -0.01 | -0.02* | -0.02* | -0.02* |
| | (-1.52) | (-1.81) | (-1.32) | (-1.08) | (-1.85) | (-1.90) | (-1.76) |
| Mgt Fee | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.00 | 0.01 |
| | (0.73) | (0.78) | (1.18) | (0.97) | (1.07) | (0.32) | (0.71) |
| MKTRF Beta | -0.04** | -0.04** | -0.04*** | -0.03*** | -0.02** | -0.02** | -0.03*** |
| | (-2.37) | (-2.55) | (-2.81) | (-3.11) | (-2.29) | (-2.27) | (-2.62) |
| SMB Beta | 0.01 | 0.02 | 0.01 | 0.00 | -0.00 | -0.00 | 0.00 |
| | (1.10) | (1.18) | (0.73) | (0.02) | (-0.43) | (-0.50) | (0.21) |
| HML Beta | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 | -0.00 |
| | (-0.35) | (-0.13) | (-0.19) | (-0.27) | (-0.02) | (-0.47) | (-0.14) |
| RMW Beta | -0.02 | -0.02 | -0.02 | -0.01 | -0.01 | 0.00 | -0.01 |
| | (-1.42) | (-1.56) | (-1.27) | (-0.53) | (-0.80) | (0.03) | (-0.87) |
| CMA Beta | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | 0.01 |
| | (0.71) | (1.28) | (1.08) | (0.98) | (1.23) | (0.26) | (1.06) |
| MOM Beta | -0.01 | 0.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.01 |
| | (-0.51) | (0.18) | (0.22) | (0.63) | (0.51) | (1.23) | (0.68) |
| RET(t-1) | 0.01* | 0.01** | 0.00 | 0.00 | 0.00* | 0.00* | 0.00* |
| | (1.87) | (2.03) | (1.50) | (0.27) | (1.93) | (1.81) | (1.73) |
| MKTRF(t-1) | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.01*** | -0.00*** | -0.01*** |
| | (-2.86) | (-2.75) | (-3.29) | (-6.28) | (-3.39) | (-2.65) | (-5.79) |
| Time | 0.01 | 0.00 | 0.03** | -0.01 | 0.04*** | 0.03*** | 0.01 |
| | (0.85) | (0.31) | (2.44) | (-1.40) | (4.34) | (4.19) | (1.57) |
| New SEC Filings | -0.00 | | | | | | |
| | (-0.17) | | | | | | |
| New SEC Filings-10K/Q | | 0.08*** | | | | | |
| | | (4.05) | | | | | |
| New SEC Filings-8K | | | -0.00 | | | | |
| | | | (-0.08) | | | | |
| New SEC Filings-4 | | | | 0.03*** | | | |
| | | | | (3.77) | | | |
| New SEC Filings-13D | | | | | 0.01 | | |
| | | | | | (1.16) | | |
| New SEC Filings-13F | | | | | | -0.01 | |
| | | | | | | (-0.69) | |
| New SEC Filings-13G | | | | | | | -0.01 |
| | | | | | | | (-0.69) |
| Calendar Month FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.04 | 0.06 | 0.07 | 0.05 | 0.06 | 0.06 | 0.06 |
| Number Firms | 554 | 554 | 554 | 554 | 554 | 554 | 554 |
| Observations | 43287 | 43287 | 43287 | 43287 | 43287 | 43287 | 43287 |

Table IA.2: Determinants of Firm Filing Views

The table reports regressions of whether a firm's filings were downloaded by any hedge fund on the firm's characteristics in the prior year. The dependent variable is an indicator equal to 1 if the firm's filing had a hedge fund view in that year, and 0 otherwise (column 1: 10-K/Q, column 2: 8-K, column 3: Form 4). Independent variables are scaled by the pooled standard deviation. Firm characteristics are measured the fiscal year values from the prior calendar year. Standard errors are clustered by firm and reported in parenthesis with significance represented according to: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

| | (1) | (2) | (3) |
|---|---|---|---|
| Ln(Market Equity) | -0.04*** | -0.05*** | -0.04*** |
| | (0.01) | (0.01) | (0.01) |
| Book Leverage | 3.08*** | 3.19*** | 2.84*** |
| | (0.53) | (0.52) | (0.51) |
| ROA | 0.45 | -0.03 | 0.28 |
| | (0.46) | (0.44) | (0.44) |
| Market to Book | 2.15*** | 2.05*** | 1.78*** |
| | (0.47) | (0.48) | (0.53) |
| Z-score | 1.35 | 0.69 | 1.32 |
| | (1.23) | (1.26) | (1.14) |
| Tangibility | -0.06*** | -0.06*** | -0.06*** |
| | (0.01) | (0.01) | (0.01) |
| Dividend Payer | -0.02* | -0.01 | -0.00 |
| | (0.01) | (0.01) | (0.01) |
| Pos. Net Equity Issue | 0.03*** | 0.04*** | 0.05*** |
| | (0.01) | (0.01) | (0.01) |
| Idio. Vol | -0.11*** | -0.10*** | -0.17*** |
| | (0.01) | (0.01) | (0.01) |
| Constant | 0.74*** | 0.60*** | 0.46*** |
| | (0.02) | (0.02) | (0.02) |
| Observations | 41921 | 41921 | 41921 |
| Adjusted $R^2$ | 0.09 | 0.14 | 0.10 |
| Form Type | 10-K | 8-K | 4 |
| Year FE | Yes | Yes | Yes |

Table IA.3: Information Acquisition and Performance—Within Fund by Form Type

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. Download activity for each form type ("Any") is an indicator variable for whether the fund accessed any forms of the indicated type in month $t$. AUM is standardized for interpretation. Regressions contain year-month and fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Any Download | 0.0776* | | | | | | |
| | (1.82) | | | | | | |
| Any 10K/Q | | 0.0762** | | | | | |
| | | (2.41) | | | | | |
| Any 8K | | | 0.0546 | | | | |
| | | | (1.30) | | | | |
| Any 4 | | | | -0.0292 | | | |
| | | | | (-0.70) | | | |
| Any 13d | | | | | 0.0766** | | |
| | | | | | (2.11) | | |
| Any 13f | | | | | | 0.0018 | |
| | | | | | | (0.04) | |
| Any 13g | | | | | | | 0.0165 |
| | | | | | | | (0.45) |
| AUM (t) | -0.4795*** | -0.4809*** | -0.4804*** | -0.4781*** | -0.4817*** | -0.4791*** | -0.4796*** |
| | (-7.00) | (-7.02) | (-7.03) | (-7.00) | (-7.03) | (-7.01) | (-7.02) |
| Abn Ret (t) | 0.0749*** | 0.0749*** | 0.0750*** | 0.0750*** | 0.0749*** | 0.0750*** | 0.0750*** |
| | (3.62) | (3.62) | (3.62) | (3.62) | (3.61) | (3.62) | (3.62) |
| Date FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Number Firms | 556 | 556 | 556 | 556 | 556 | 556 | 556 |
| Observations | 43434 | 43434 | 43434 | 43434 | 43434 | 43434 | 43434 |

Table IA.4: Information Acquisition and Performance: Continuous Acquisition Measure—Within Fund by Form Type

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The monthly abnormal returns are calculated using the Fama-French Five Factor Model plus Momentum. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). AUM is standardized for interpretation. Regressions contain year-month and fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Downloads | 0.0235** | | | | | | |
| | (2.29) | | | | | | |
| Downloads 10K/Q | | 0.0208* | | | | | |
| | | (1.75) | | | | | |
| Downloads 8K | | | 0.0239* | | | | |
| | | | (1.68) | | | | |
| Downloads 4 | | | | -0.0035 | | | |
| | | | | (-0.18) | | | |
| Downloads 13d | | | | | 0.0329 | | |
| | | | | | (1.26) | | |
| Downloads 13f | | | | | | 0.0263 | |
| | | | | | | (1.17) | |
| Downloads 13g | | | | | | | 0.0120 |
| | | | | | | | (0.46) |
| AUM (t) | -0.4833*** | -0.4833*** | -0.4832*** | -0.4788*** | -0.4814*** | -0.4812*** | -0.4799*** |
| | (-7.03) | (-7.04) | (-7.07) | (-7.01) | (-7.03) | (-7.04) | (-7.03) |
| Abn Ret (t) | 0.0749*** | 0.0750*** | 0.0750*** | 0.0750*** | 0.0749*** | 0.0750*** | 0.0750*** |
| | (3.62) | (3.62) | (3.62) | (3.62) | (3.62) | (3.62) | (3.62) |
| Date FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Fund FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Number Firms | 556 | 556 | 556 | 556 | 556 | 556 | 556 |
| Observations | 43434 | 43434 | 43434 | 43434 | 43434 | 43434 | 43434 |

Table IA.5: Information Acquisition and Performance (Fung-Hsieh)

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The monthly abnormal returns are calculated using the Fung-Hsieh seven factor model. Download activity for each form type ("Any") is an indicator variable for whether the fund accessed any forms of the indicated type in month $t$. AUM is standardized for interpretation. Regressions contain year-month fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Any Download | 0.0979*** | | | | | | |
| | (2.75) | | | | | | |
| Any 10K/Q | | 0.0933*** | | | | | |
| | | (2.88) | | | | | |
| Any 8K | | | 0.0971*** | | | | |
| | | | (3.13) | | | | |
| Any 4 | | | | 0.0399 | | | |
| | | | | (1.25) | | | |
| Any 13d | | | | | 0.0896*** | | |
| | | | | | (2.84) | | |
| Any 13f | | | | | | 0.0660* | |
| | | | | | | (1.93) | |
| Any 13g | | | | | | | 0.0781*** |
| | | | | | | | (2.66) |
| AUM (t) | 0.0265 | 0.0246 | 0.0231 | 0.0310 | 0.0263 | 0.0288 | 0.0274 |
| | (1.18) | (1.10) | (1.05) | (1.38) | (1.17) | (1.28) | (1.23) |
| Abn Ret (t) | 0.0873*** | 0.0873*** | 0.0873*** | 0.0874*** | 0.0872*** | 0.0874*** | 0.0873*** |
| | (5.25) | (5.25) | (5.25) | (5.25) | (5.24) | (5.25) | (5.25) |
| Date FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| Number Firms | 590 | 590 | 590 | 590 | 590 | 590 | 590 |
| Observations | 44340 | 44340 | 44340 | 44340 | 44340 | 44340 | 44340 |

Table IA.6: Information Acquisition and Performance: Continuous Acquisition Measure (Fung-Hsieh)

The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The monthly abnormal returns are calculated using the Fung-Hsieh seven factor model. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). AUM is standardized for interpretation. Regressions contain year-month fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | | | |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Downloads | 0.0244*** | | | | | | |
| | (3.31) | | | | | | |
| Downloads 10K/Q | | 0.0292*** | | | | | |
| | | (3.28) | | | | | |
| Downloads 8K | | | 0.0330*** | | | | |
| | | | (3.34) | | | | |
| Downloads 4 | | | | 0.0210 | | | |
| | | | | (1.46) | | | |
| Downloads 13d | | | | | 0.0491** | | |
| | | | | | (2.52) | | |
| Downloads 13f | | | | | | 0.0321** | |
| | | | | | | (1.98) | |
| Downloads 13g | | | | | | | 0.0432** |
| | | | | | | | (2.46) |
| ltot_aum | | | | | | | |
| Abn Ret (t) | 0.0854*** | 0.0855*** | 0.0855*** | 0.0856*** | 0.0855*** | 0.0856*** | 0.0856*** |
| | (5.10) | (5.10) | (5.10) | (5.10) | (5.10) | (5.10) | (5.10) |
| Date FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 |
| Number Firms | 557 | 557 | 557 | 557 | 557 | 557 | 557 |
| Observations | 43435 | 43435 | 43435 | 43435 | 43435 | 43435 | 43435 |

Table IA.7: Information Acquisition and Performance: Within-Fund Variation (Fung-Hsieh)

The table presents the within-fund relation between download activity in month $t$ and a fund's abnormal return (measured in percent) in month $t+1$. Abnormal returns are calculated using the Fung-Hsieh seven factor model. Panel A uses hedge-fund fixed effects. "Any Download" indicates whether the fund accessed any filings in month $t$. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). Panel B uses a measure of abnormal downloads. For each fund-month, a standardized trailing download measure is calculated as the fund-month's downloads in excess of the fund's trailing 24 month average downloads, divided by the standard deviation of the fund's download activity over the trailing 24-month period. If there is no variation in download activity over the prior 24 months, the standardized trailing download measure is set to zero if the month's number of downloads is zero, or is set to an arbitrarily large (small) number if the month's number of downloads is greater (less) than the fund's trailing average monthly download. "Abnormal Downloads" is the $p$-value resulting from applying the standard normal distribution function to the standardized trailing download measure. Thus, "Abnormal Downloads" takes values from 0 to 1. "High (Low) Abnormal Downloads" is an indicator variable for Abnormal Downloads taking a value greater than 0.75 (less than 0.25). AUM is standardized for interpretation. All regressions contain year-month fixed effects, and columns 2 and 4 in Panel A contain fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Panel A: Fund Fixed Effects*

| | Dependent Variable: Abnormal Return (t+1) | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Any Download | 0.0998*** | 0.0694 | | |
| | (2.72) | (1.60) | | |
| Downloads | | | 0.0244*** | 0.0221** |
| | | | (3.31) | (2.20) |
| AUM (t) | 0.0262 | -0.4047*** | 0.0187 | -0.4083*** |
| | (1.16) | (-6.30) | (0.81) | (-6.35) |
| Abn Ret (t) | 0.0855*** | 0.0557*** | 0.0854*** | 0.0557*** |
| | (5.10) | (3.25) | (5.10) | (3.25) |
| Firm FE | No | Yes | No | Yes |
| Date FE | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.06 | 0.07 | 0.06 | 0.07 |
| Number Firms | 557 | 556 | 557 | 556 |
| Observations | 43435 | 43434 | 43435 | 43434 |

*Panel B: Abnormal Time-Varying Strategies*

| | Dependent Variable: Abnormal Return (t+1) | |
|---|---|---|
| | (1) | (2) |
| Abnormal Downloads(t) | 0.0847* | |
| | (1.97) | |
| High Abnormal Downloads(t) | | 0.0996*** |
| | | (2.91) |
| Low Abnormal Downloads(t) | | 0.0395 |
| | | (1.00) |
| AUM (t) | 0.0391* | 0.0373* |
| | (1.77) | (1.70) |
| Abn Ret (t) | 0.0793*** | 0.0792*** |
| | (4.40) | (4.40) |
| Date FE | Yes | Yes |
| Fund FE | No | No |
| Adjusted $R^2$ | 0.06 | 0.06 |
| Number Firms | 555 | 555 |
| Observations | 42321 | 42321 |

Table IA.8: The Return/Information Acquisition Relation and Filing Characteristics (Fung-Hsieh)

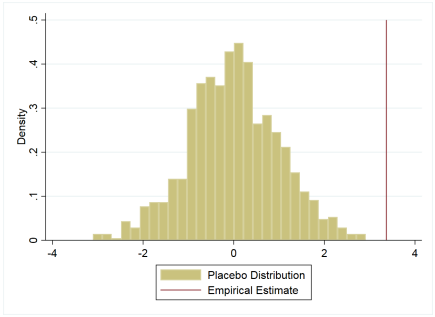
The table reports the relation between download activity by a hedge fund in month $t$ and the fund's abnormal return (measured in percent) in month $t+1$. The relation is separately estimated based on where various characteristics of viewed filings fall in their distributions. Abnormal returns are calculated using the Fung-Hsieh seven factor model. "Downloads" is the fund's log number of downloads in month $t$, Ln(1+# of downloads). "Downloads" is interacted with indicator variables for whether the median characteristic of a fund's viewed filings is in the top quartile, the bottom quartile, or the interquartile range for the following filing characteristics: the age (in days) of the accessed 10-K/Qs, the file size (in KB) of the accessed 10-K/Qs, the level of textual uncertainty in the accessed 10-K/Qs (measured using the proportion of uncertain words determined using the Loughran and McDonald (2011) lexicon), the number of other hedge funds viewing the accessed 10-K/Qs, and the intensity with which the hedge fund tracked the filer (measured as number of downloads of firm filings in prior months). In each case, the median is taken within firm-month across all 10-K/Qs accessed by the fund. The quartile indicators are determined across all fund-months with non-zero EDGAR usage. AUM and the median log market capitalization of viewed stocks are standardized. Regressions contain year-month and fund fixed effects. Standard errors are clustered by fund and year-month. $t$ statistics are in parentheses, and statistical significance is represented by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

| | Dependent Variable: Abnormal Return (t+1) | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Filing Characteristic | Age | File Size | Uncertainty | Other HF Views | Tracked |
| Downloads 10K/Q | | | | | |
| - x Top Quartile Indicator | 0.0250 | 0.0112 | 0.0497*** | 0.0414** | 0.0358*** |
| | (1.57) | (0.61) | (3.19) | (1.99) | (2.64) |
| - x Interquartile Indicator | 0.0147 | 0.0194 | 0.0216* | 0.0262** | 0.0188 |
| | (1.13) | (1.48) | (1.73) | (2.02) | (1.45) |
| - x Bottom Quartile Indicator | 0.0357** | 0.0410*** | 0.0004 | 0.0106 | 0.0109 |
| | (2.21) | (2.71) | (0.02) | (0.83) | (0.72) |
| Median Ln Market Cap | -0.0063 | -0.0062 | -0.0076 | -0.0106 | -0.0067 |
| | (-0.30) | (-0.29) | (-0.36) | (-0.50) | (-0.32) |
| AUM (t) | -0.4075*** | -0.4082*** | -0.4085*** | -0.4084*** | -0.4096*** |
| | (-6.31) | (-6.33) | (-6.36) | (-6.35) | (-6.36) |
| Abn Ret (t) | 0.0557*** | 0.0556*** | 0.0557*** | 0.0557*** | 0.0557*** |
| | (3.26) | (3.25) | (3.26) | (3.25) | (3.26) |
| Date FE | Yes | Yes | Yes | Yes | Yes |
| Fund FE | Yes | Yes | Yes | Yes | Yes |
| Adjusted $R^2$ | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
| Number Firms | 556 | 556 | 556 | 556 | 556 |
| Observations | 43434 | 43434 | 43434 | 43434 | 43434 |

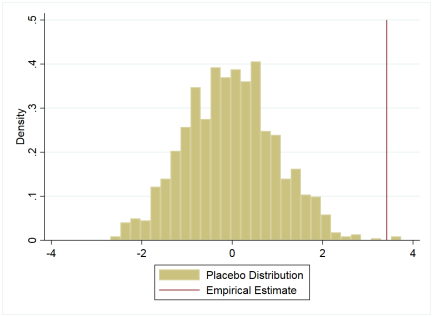
Figure IA.1: Placebo Tests of Return/Acquisition Relation—Indicator Variable

The figure plots the distribution of t-statistics for the model specification reported in Table 3 estimated on 1000 placebo samples of EDGAR usage. The vertical lines show the estimated empirical t-statistic from the actual sample for each filing type. The 1000 placebo samples are created by randomly assigning time-series of usage from the hedge fund sample across hedge funds in the sample. That is, in each placebo panel, a given fund's time-series of EDGAR usage is replaced by another, randomly-chosen (with replacement) fund's time-series of usage.

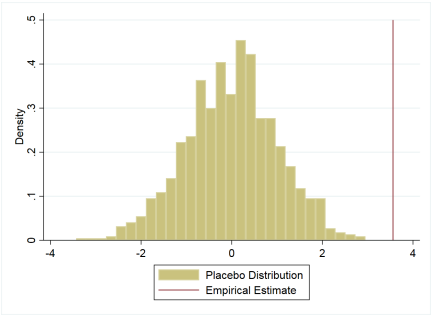
(a) All files



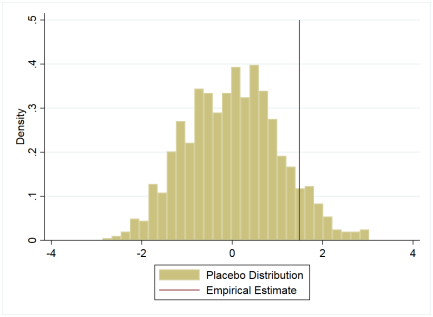

(b) 10-K/Q



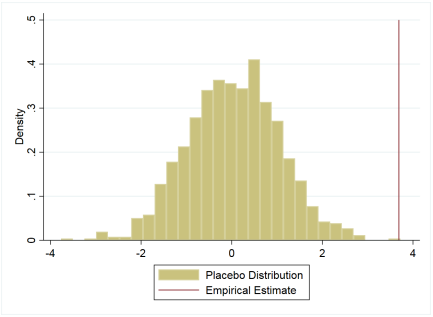

(c) 8-K



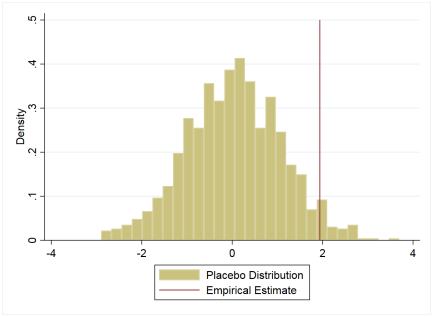

(d) Form 4




(e) 13-D




(f) 13-F




(g) 13-G

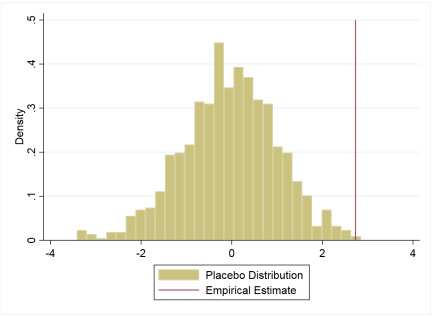
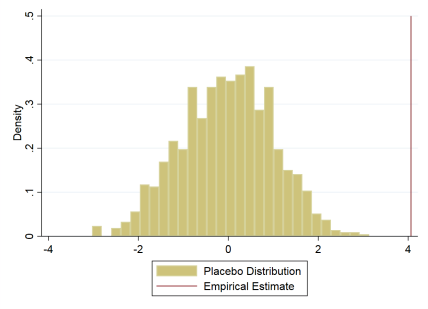


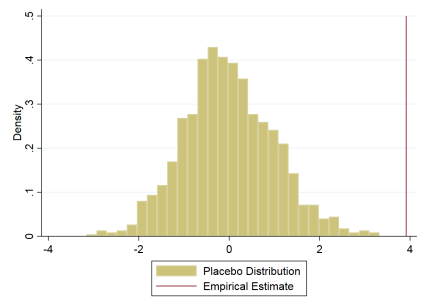
Figure IA.2: Placebo Tests of Return/Acquisition Relation—Continuous Acquisition Variable

The figure plots the distribution of t-statistics for the model specification reported in Table 4 estimated on 1000 placebo samples of EDGAR usage. The vertical lines show the estimated empirical t-statistic for the log number of downloads from the actual sample for each filing type. The 1000 placebo samples are created by randomly assigning time-series of usage from the hedge fund sample across hedge funds in the sample. That is, in each placebo panel, a given fund's time-series of EDGAR usage is replaced by another, randomly-chosen (with replacement) fund's time-series of usage.

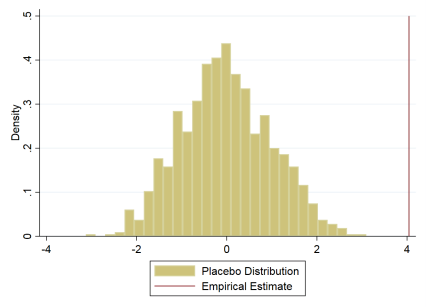
(a) All files



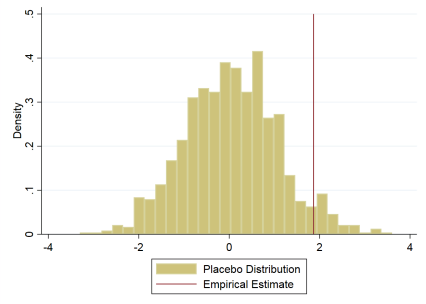

(b) 10-K/Q



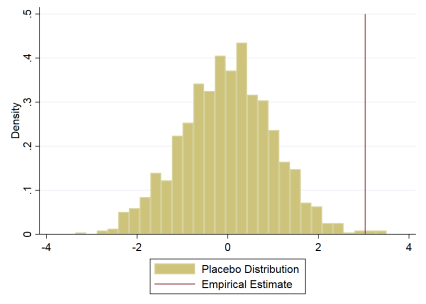

(c) 8-K



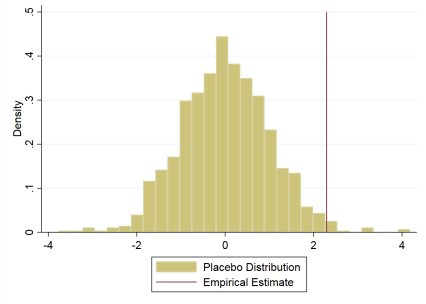

(d) Form 4




(e) 13-D




(f) 13-F




(g) 13-G