The Freedom of Information Act and the Race Towards Information Acquisition

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We document a little-known source of information exploited by sophisticated institutional investors: the Freedom of Information Act (FOIA), a law that allows for the disclosure of previously unreleased information by the U.S. Government. Through FOIA requests, we identify several sophisticated institutional investors, chiefly hedge funds, that request information from the FDA. We explore the type of information commonly requested by funds and the types of firms that are targets of FDA-FOIA requests, and we show that FOIA requests allow these investors to generate abnormal returns. Thus, we illustrate a detailed mechanism through which costly information becomes incorporated into market prices.

"When SAC Capital Advisors LP was weighing an investment in Vertex Pharmaceuticals Inc., the hedge-fund firm contacted a source it knew would provide nonpublic information without blinking: the federal government." Wall Street Journal, Sept. 23, 2013

1 Introduction

On July 4, 1966, President Lyndon B. Johnson signed the Freedom of Information Act (FOIA), a law that allows for the full or partial disclosure of previously unreleased information and documents in the domain of agencies of the Executive Branch of the United States government. It provides that any "person" (including U.S. citizens, foreign nationals, organizations, associations, and universities) has the right, enforceable in court, to obtain access to federal agency records, with some restrictions.[1] While the practice of submitting FOIA requests is known to be common among news agencies and law firms, it is less known that, over the years, it has become a common approach for sophisticated institutional investors, such as hedge funds, to obtain potentially value-relevant information about corporations.

Specifically, institutional investors routinely take advantage of FOIA to acquire information from over forty-two federal agencies, such as the Food and Drug Administration, the Securities and Exchange Commission, the Environmental Protection Agency, and the Department of Energy. To a large extent, this should not be surprising. Being among the first to know that a pharmaceutical company receives warnings from the FDA, that an investment bank is under investigation by the SEC, or that new environmental regulations are being discussed by the EPA can provide potentially profitable trading opportunities in securities of the corporations that may be affected by such events. This information can be particularly important because, while it is public and legal to trade on, it is not always publicly disseminated and, therefore, is not always available to the rest of the marketplace. Analogous to the current debate about high-frequency traders achieving faster access to security pricing data, one might wonder how certain institutional investors obtain public information faster than other investors, and the advantage conferred by this faster access in generating trading profits.

In this paper, we focus on FOIA requests submitted to the Food and Drug Administration (FDA),

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[1]There are nine exemptions to FOIA. Among these are information related to national security, trade secrets, personal privacy, and examinations of financial institutions maintained by agencies of the U.S. Government.

which is responsible for protecting public health through the supervision of matters including food safety and over-the-counter pharmaceutical drugs. We focus on FDA FOIA requests because we believe that such information is especially likely to be value-relevant to investors. Specifically, pharmaceutical companies – the target of the majority of FDA FOIA requests – invest an enormous amount of human capital and monetary resources in the development of new drugs, and several studies show that FDA decisions have a large impact on stock prices. For example, using an event-study methodology, Bosh and Lee (1994) and Sharma and Lacey (2004) show that FDA decisions on new products are not fully anticipated by the market, and are associated with positive or negative abnormal returns on the day that the FDA announces the approval or rejection of a drug.

There are several significant information events in the life of a new drug, which allow several opportunities to study the impact of FDA FOIA requests on security prices. Even after a drug has been approved, many of its side effects are unknown until it is released to the consumer market. At this stage of drug development, the FDA conducts a so-called "post-market surveillance" which entails initiating investigations, issuing warning letters, and even recalling drugs from the market. Jarrell and Peltzman (1985) show that these recalls have a disproportionately large impact on the stock price of the pharmaceutical company, compared to the direct costs associated with the recall. Dowdell, Govindaraj, and Jain (1992) focus on the Tylenol incident, and show that a single FDA packaging regulation resulted in a total of $11 billion in capitalization losses across the pharma companies affected, much more than the direct costs associated with the newly introduced regulation.

Furthermore, FOIA requests do not always involve trivial costs, as the FOIA requester is required to pay fees that range from a few dollars to several thousand dollars, depending on the complexity of the request. And, much of the information obtained through FDA FOIA requests, such as the results of clinical trials, is highly technical and requires specific scientific competence to be properly interpreted. Thus, the type of FOIA-requested information represents information that often carries significant search costs, and the fact that we observe FOIA requests is consistent with theoretical frameworks that model security prices as sufficiently noisy to provide investors with an incentive for costly information acquisition; see, for example, Grossman and Stiglitz (1980), Hellwig (1980) and Verrecchia (1982).

All of this suggests that large, sophisticated institutional investors should be very natural FDA FOIA requesters, since they have the scale to hire the specialized human capital required to process technical information, and the skills necessary to trade on it. Accordingly, we identify a set of institutional investors that have submitted FOIA requests for FDA filings of U.S. publicly listed firms. Then, we study how the holdings of stocks of these firms by the institutional investors change, prior to and after they receive the FOIA information, to assess whether the changes in their holdings predict future returns. In other words, we study whether these institutional investors use FOIA information to achieve abnormal returns on their portfolios.

Specifically, we focus on FOIA requests submitted to the FDA by large institutional investors, that is, those filing their stockholdings each quarter on SEC Form 13F.[2] We focus on those FOIA requests that are related to specific pharmaceutical firms having stock return information available on CRSP, as FOIA filings can also be made, for example, regarding general industry information or for information on firms having no publicly traded equity. FOIA requests through the FDA that meet these requirements have exhibited substantial growth in recent years, from only 6 in year 2000 to 75 in 2012. This growth in requests mirrors the growth in other approaches likely used by institutions to gather information more quickly than their competitors, such as the use of sales information through Amazon, fads information through Twitter, or consumer search information through Google. However, unlike these other information-gathering sources, FOIA information (as noted above) is not always available at a low cost, nor is the precise interpretation of the information possible for most institutional investors.

Accordingly, we first examine the types of institutional funds that tend to request information through FOIA. Besides being large institutions, FOIA-requesters tend to be hedge funds, have a higher level of portfolio turnover (consistent with greater active management), hold stocks with greater idiosyncratic risk (consistent with more private information), and have experienced high recent inflows or outflows relative to other funds.

Next, we examine the characteristics of stocks that are targets of FDA FOIA requests. Here, we find a significantly higher level of FOIA requests aimed at stocks in the pharmaceutical industry

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[2]Rule 13(f) requires institutional managers holding at least $100 million in certain securities, mainly exchange-traded stocks (including those traded on Nasdaq) to file a detailed list of their holdings of such securities at the end of each calendar quarter, with such filing required within 45 days of that date.

that have a larger market capitalization (consistent with liquidity), higher levels of idiosyncratic risk and turnover on the day of the FOIA request (consistent with more private information), lower risk-adjusted returns and profitability (consistent with recent large and uncertain capital investments), and higher levels of R&D expenditures (consistent with having higher levels of private information generated by such activities).

The institutions that make FOIA requests often trade on this activity, as indicated by changes in their 13F quarterly holdings. Of the 529 FOIA requests by an institution to the FDA that we consider, 155 (29%) are accompanied with stock purchases, 162 (31%) with sales, and 212 (40%) with no position changes.[3]

As econometricians without complete information or the specialized interpretative skills that may be possessed by institutions prior to their FOIA requests, we infer whether they possess such skills by examining the abnormal returns accruing to their trades that occur in conjunction with a FOIA request. To do so, we focus on stock-quarters where a FOIA request was made, and where an institution who made the request traded. We find that, when institutional holdings *increase* in conjunction with a FOIA request, the following quarter four-factor alphas on the associated stocks average 5.26%. On the other hand, when institutional holdings *decrease*, the following quarter four-factor alphas average -3.09%; these average alphas are statistically different from each other with a *p*-value of 0.018. And, such stock purchases exhibit positive four-factor alphas 66% of the time, while stock sales exhibit negative four-factor alphas 64% of the time. All of these results indicate that FOIA requests are an important conduit through which institutional investors gather value-relevant "private" information about pharmaceutical stocks.

We recognize that institutions that make FOIA requests may have greater skills, in general, in analyzing stocks – and may not actually benefit, incrementally, from their FOIA requests. To rule out the possibility that fund abnormal returns are only spuriously correlated with FOIA requests, we control for manager skills in two unique ways. To control for institutional manager skills in trading stocks that have been a target of FOIA *at some particular point-in-time*, we compute the abnormal return of the trades of these stocks during quarters where the institution did not submit a FOIA

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[3]We note that an institution may make a round-trip trade within a calendar quarter, and such trades would not be revealed through 13F reports. Thus, our study is conservative, in that it understates the extent of trading associated with FOIA requests, as well as any findings of abnormal returns associated with such trades.

request, but did submit a FOIA request during a different quarter in our sample. We find that the stock returns are greater (lower) when stock-holdings increase (decrease) during the same quarter as a FOIA request, relative to the trades in the same direction and the same stock during a quarter when a FOIA request by that institution did not occur.

Secondly, it is also possible that certain institutional managers have time-varying skills , and their FOIA requests simply coincide with quarters where their skills are higher (and, perhaps, have nothing to do with the information obtained through FOIA). To control for the possibility of time-varying skills by a given institutional manager across all stocks, we compute the returns that are not associated with a FOIA request, but that pertain to the same manager and the same quarter of the request. We find that, compared to the non-FOIA stocks traded during the same calendar quarter of a FOIA request, the FOIA-related stock returns are higher when stock-holdings increase and lower when stockholdings decrease. Further confirmation that FOIA requests generate unique value-relevant information is provided by the fact that FOIA requesters' trades exhibit a low correlation with the trades of other institutional investors, as well as to analyst recommendation changes.

Supporting the view that institutional investors find the FOIA information relevant for their investment decisions, and that certain institutions have advantages in processing this information, we find a considerable amount of persistence in the requests, in the sense that once certain investors "discover" this new source of information and start submitting FOIA requests, they continue doing so during the following years. Thus, certain institutions appear to gain advantages in accessing and interpreting FOIA-based information, perhaps partly due to their specialized investment researchers learning how to use this information over time.

Our work contributes to the literature examining the role of information on the performance of institutional investors. Kacperczyk and Seru (2007) show evidence that managers with greater skills are less responsive to changes in public information, presumably because they rely more on private information. Massa and Rehman (2008), Bodnaruk, Massa, and Simonov (2009), Ivashina and Sun (2011), Massoud, Nandy, Saunders, and Song (2011), and Griffin, Shu, and Topaloglu (2012) put forth evidence in favor of – or against – the assertion that financial institutions trade on the basis of private information acquired via their investment banking and loan renegotiation activities. Solomon

and Soltes (forthcoming) show that investors use information gathered from private meetings with corporate executives to formulate their investment strategies.

In contrast to this prior work, which indirectly identifies potential private information being transmitted, we identify a specific piece of quasi-private information – that obtained from FOIA requests – as being actively used by institutional investors. A key aspect of FOIA requests is that the requesters consider the information potentially useful for their investment decisions, because they actively request it and they pay a fee for it. Furthermore, the information requested is hybrid in nature. It is not fully private, because any person[4] has potential access to it, but it is not publicly disseminated, because only those who request it and can understand and process the information content will benefit from it. Finally, the FOIA information is objective and unfiltered, as it comes in the form of technical reports. This feature distinguishes it from the information reported by analysts and journalists, where the information is influenced by the interpretation of the author(s).

We also contribute to the literature that studies information disclosure from a regulatory perspective – see, among others, Admati and Pfleiderer (2000), Leuz and Verrecchia (2000), Bailey, Li, Mao, and Zhong (2003), Brunnermeier (2005), Kurlat and Veldkamp (forthcoming). This literature has shown mixed results for the societal and investment value of increased disclosure through regulations. We add to this literature by considering the Freedom of Information Act – one that has become, perhaps unintentionally, a source of required public disclosure about value-relevant firm information – and to analyze its impact on financial markets. From a regulatory perspective, the FOIA information is unique because its release is not controlled by firms, but by the federal government itself. Furthermore, the information released under FOIA is disclosed only to the requester, which raises the issue of whether it should confer informational advantages to selected investors. In this respect, our work is pertinent to the current political debate on whether the Freedom of Information Act should extend to all government agencies. For example, the *Dodd-Frank Wall Street Reform and Consumer Protection* Act included provisions to shield some agencies – such as the SEC – from FOIA requests, but these provisions were repealed in September 2010. Finally, another area of contentious debate is how accessible should FOIA information be. In this respect, the *FOIA Oversight and Implementation Act of 2014* amends the Freedom of Information Act in order to make it easier and faster to request and

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[4]This includes U.S. citizens, foreign nationals, organizations, associations, and universities.

receive information. Our study supports these regulatory changes, as we find that FOIA-requested information is value-relevant to the market.

The rest of the paper proceeds as follows. Section 2 describes a case study as a motivation for our empirical analysis; Section 3 describes how we construct the data; Section 4 investigates the characteristics of FOIA requesters, FOIA subjects, and the information that is commonly requested from the FDA. Section 5 assesses the profitability of the trades that are associated with FOIA requests; Section 6 provides evidence that the FOIA information is not systematically available to other investors or analysts. Section 7 concludes.

2 Case Study: Charles River Labs and SAC Capital

As a motivation for our empirical study, and to explain how Freedom of Information Act requests are undertaken, we now present an example of a FOIA request associated with an economically large change in the requesting investor's stock holdings. As shown in Figure 1, on December 23, 2011, an employee of SAC Capital submitted a Freedom of Information Act (FOIA) request to the Food and Drug Administration (FDA) asking for "any 483s or warning letters issued to Charles River Laboratories in the last 5 years."[5] Charles River Laboratories is a publicly traded corporation with revenues exceeding $1 billion (FY2013), that, among other activities, conducts basic phamaceutical research. The SAC employee specifically asked for information regarding the plants located in Montreal and Sherbrooke (Canada), Edinburgh (UK), Nevada, Pennsylvania and Ohio. On December 28, 2011, as shown in Figure 2, an FDA employee from the Division of Information Disclosure Policy replies to SAC with Establishment Inspection Reports (EIRs) for the Montreal location (2 reports for the years 2006 and 2009) and the Edinburgh location (1 report for the year 2008).[6] The letter also mentions a telephone conversation between representatives of the FDA and SAC, as well as the cost associated with the request – which amounted to only $35.50.

The request may be in response to the sharp drop in the stock price of Charles River Labs, from $33.57 on October 28, to $25.95 on December 14, as shown by the blue line (and the associated blue y-axis values on the left) in Figure 3. Absent any salient news regarding the company, such a large

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[5]The 483 form is issued by the FDA to document and communicate concerns discovered during plant inspections.

[6]The total number of pages of the three reports is 34.

drop in price could mean that the stock had become strongly under-valued.[7] Another possibility was that the drop in price was associated with information known to some agents in the market, but not others. This uncertainty is consistent with the request put forth by SAC, which, in essence, asked for all negative news regarding Charles River Labs over five years prior to December 2011. The request resulted in only three reports, from the years 2006, 2008, and 2009, which are unlikely to be the reason for the large drop in price of the stock in the fourth quarter of 2011.

Of course, we cannot know how SAC interpreted the information contained in the documentation received from the FDA. Using 13F filings, however, we do know that the FOIA response was associated with a large increase in the stock holdings of Charles River Labs by SAC.[8] In particular, as shown by the green circles and bars (and the associated green y-axis values on the right) in Figure 3, the number of shares held by SAC increased from 69,965 on September 30, 2011 to 240,000 on December 31, 2011. Because we can only observe holdings at the quarterly frequency, we cannot establish when trades were actually executed. However, we would expect portfolio managers to attempt to acquire information before executing a trade and not afterwards, so the timing of the request seems to suggest that the buy trades were executed sometime between December 28 and December 30, 2011 (since December 31 was a Saturday), and were, at least in part, motivated by the information obtained by the FDA (which indicated no recent negative information on Charles River Labs).[9] Alternatively, SAC may have accumulated substantially more shares prior to December 28, and the FOIA request motivated them to continue holding these shares until the public became aware of the information and the stock price improved. If we use the December 30 closing stock price ($27.33), this implies that SAC increased its holdings of Charles River Labs shares by $(240,000 - 69,965) \times \$27.33 = \$4.65$ million.

On January 10, 2012 the stock realized a return of 17.30%, as the price jumped from $27.68 to $32.47.[10] After January 10, the stock price continued to increase, reaching a value of $36.09 on March

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[7]We searched for news regarding the price behavior of Charles River Labs in the fourth quarter of 2011, and could not find any value-relevant information.

[8]Under the Securities Exchange Act of 1934, investment advisors controlling at least $100,000,000 in U.S. equities are required to report their U.S. stock holdings in excess of 10,000 shares or $200,000 on Form 13F to the Securities and Exchange Commission.

[9]On that day, the total market capitalization of Charles River Laboratories Inc was $1.34 billions. With its total investment of $240,000 \times \$27.33 = 6.56$ millions, SAC holdings amounted to 0.5% of the company's total capitalization.

[10]Some attributed the price increase to the undervalued nature of the stock. Dan O'Brien from *The Baltimore Sun* commented, "When you own a stock that is widely regarded as undervalued, it doesn't always take real news to get

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31, 2012.

By March 31, SAC held 36,117 shares of Charles River Labs, implying that the hedge fund sold over 200,000 shares during the first quarter of 2012. Because we do not know exactly when SAC sold those 200,000+ shares, in Figure 4, we report (in blue) the cumulated returns on the stock price of Charles River Labs from January 1, 2012 to March 30, 2012 (the last trading day of Q1, 2012. For comparison, we report (in red) the cumulated returns on the S&P 500 index. From the graph, we can infer the return realized by SAC for different potential sell dates. For example, SAC would have achieved a return of 26.09% if the shares were sold on January 31, and 32.05% if the shares were sold on March 30.[11] These returns are remarkable, compared to the same holding-period returns on the S&P 500 of 5.29% and 12.00%, respectively. These returns amounted to capital gains of $4.65 × 26.09% = $1.21 million on a single trade over one month, or $4.65 × 32.05% = $1.49 million over one quarter, which are very large even for a hedge fund of the size of SAC Capital.

Our example above is a simple illustration of the process associated with FOIA requests, ranging from the letter sent by an institutional investor to the FDA, to the type of material received, to the cost associated with the inquiry. Our example also suggests that institutional investors actively seek information directly from the FDA, and that they do so during periods associated with significant changes in their holdings of the stock for which information is being sought. But, what type of information do these institutional investors seek? Which, among the FDA-regulated companies, are the main subjects of FOIA requests? Who, among the institutional investors that populate the 13F dataset, are the most active in generating FOIA requests? Is there any systematic relation between FOIA requests and changes in the holdings of a particular stock? Do investors make significant trading gains or losses when their FOIA requests are accompanied with changes in their investment positions?

The next sections of our paper attempt to address these questions. In doing so, we exploit a unique dataset constructed from records directly obtained from the FDA through our own FOIA requests, augmented with data from the CRSP, COMPUSTAT, I/B/E/S, and 13F filings databases. In the next section, we describe our collection of FOIA information from the FDA.

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it moving." Others argued that, because the stock was so undervalued, the company was at risk of a take-over. In particular, Val Brickates Kennedy from the *Wall Street Journal* writes, "based on other recent Mergers & Acquisition multiples within pharmaceutical outsourcing, we estimate a potential deal could be valued at nearly $40 on the low end and over $60 on the high-end."

[11]Once annualized, these returns would amount to 313.08% and 119.28%.

3 Construction of the Data

The data collection procedure can be summarized in the five steps described below.

3.1 Step 1: Request of the FOIA Logs from the FDA

We started our data collection by submitting a Freedom of Information Act (FOIA) request to the Food and Drug Administration (FDA) asking for the full set of Freedom of Information Act requests submitted to the agency from January 1995 (the earliest available date) to October 2013 (the date when we started the data collection). Each government agency keeps a record of the FOIA requests received in database files referred to as "FOIA logs".

Depending on the agency, the FOIA logs have different formats. The FOIA logs we received from the FDA are in .pdf format and contain: 1) a control number that uniquely identifies each FOIA request; 2) the day on which the request was received by the FDA; 3) the date on which the FDA response is due; 4) the FDA offices and the divisions to which the request is pertinent; 5) the identity of the individual and/or firm requesting the information; 6) and the subject of the FOIA request.

Figure 5 reports a sample page from the several thousands we received, and contains 14 of the 176,734 FDA FOIA records available. The page is representative of the type of requesters and requests we find throughout the dataset.

The first log pertains to a request initiated by an investigative reporter of the Wall Street Journal regarding the drug "Actiq", manufactured by Cephalon Inc. The second and third entries are associated with a Professor of Biology from the University of Scranton who specializes in litigation consulting services. This requester seeks information regarding Althea Technologies Inc. The descriptions of these two logs contain a number of key words that recur throughout the data. For example, "EIR" stands for Establishment Inspection Report, which refers to the report generated by the FDA when inspecting the facilities of a given drug producing company; "WARNING LTRS" stands for Warning Letters issued by the FDA to a particular company; "CORR" stands for correspondence between the FDA and the company; and "RECS" stands for the company records held by the FDA for a particular company.

The fourth record is a FOIA request generated by Blake Goodner, a healthcare research analyst

at Bridger Capital. Bridger Capital requested warning letters, correspondence, as well as copies of the 483 forms[12] issued by the FDA to the company Kyphon Inc. - a biomedical company that specializes in spinal cord injuries.

The fifth FOIA is initiated by Kendle Regulatory Affairs, a regulatory consulting company. The seventh FOIA is associated with a private individual, who obviously wanted to conceal his identity, as he submits the request under the name "John Doe". Finally, 5 out of the 14 FOIA requests were submitted by "FOI Services Inc", a firm specialized in filing FOIA requests. These firms charge hefty fees, but have become quite popular among requesters who want to ensure anonymity and confidentiality.[13]

As hinted in the examples reported above, the FDA FOIA requesters generally fall in six broad categories: private individuals, law firms, news firms, consultancy firms, firms specialized in FOIA requests and investment firms. Given the focus of this study, we concentrate on the requests generated by the last category.

3.2 Step 2: Identify the Institutional Investors among the FOIA Requesters

We scan the 176,734 FOIA log records and isolate the ones initiated by institutional investors using the following procedure. We first download from the Thomson Reuters 13F database the list of institutional investors that filed their positions with the SEC since 1990. We then store, for each FOIA log record, all the words contained in the requester field. Finally, we match the names of the institutional investors to the ones contained in the requester's field. This last exercise is performed in a number of different ways, i.e., from requiring multiple-word matches to unique word matches, and by way of exact matches as well as fuzzy matches.

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[12]The 483 form is issued by the FDA to document and communicate concerns discovered during plant inspections.

[13]Below we report excerpts from the company FOI SERVICES INC describing their services:

"Looking for a specific FDA file? FOI Services maintains a private library of over 160,000 documents in all categories of products regulated by the agency. [...] If we don't already have the document you need, we can place a request to the government for you. With over 27 years of experience using the Freedom of Information Act, we'll construct a request that contains the information the government needs to efficiently process the order. If requests similar to yours have previously yielded no information, we'll let you know up-front, before you've waited in vain.

Of course, we hold every inquiry confidential. Every request carries the FOI name, so no one knows the products, processes, and companies you're researching."

3.3 Step 3: Identify Public Companies among the FOIA Subjects

We scan the 176,734 FOIA log records and isolate the ones that pertain to public companies whose stocks are listed on NYSE, AMEX or NASDAQ. Once again, this task is completed using a procedure similar to the one reported for step 2. We first download from the CRSP database the list of firms whose stock price was available since 1990; we then store, for each FOIA log record, all the words contained in the subject field. Finally, we match the CRSP company names to the ones contained in the subject field.

3.4 Step 4: Hand-Check of the Results Computed in Steps 2 and 3

The computer codes written for steps 2 and 3 reduce the number of relevant entries to approximately 20,000. In the fourth step we make sure that each record is hand-checked by at least two individuals to guarantee that no false positives are left in the dataset. The final number of FOIAs we isolate is 529.

3.5 Step 5: Generate the Panel Dataset to Conduct the Profitability Analysis

The final step generates the panel dataset used in our analysis. For each institutional investor, this panel contains the quarterly holdings, the daily prices and returns, all the available accounting characteristics, and the analysts' recommendations for the stock(s) subject to a FOIA request. The quarterly holdings are obtained from the Thomson Reuters 13F dataset, the returns and prices are from CRSP, the quarterly stock accounting information are from COMPUSTAT, and the analysts' recommendations data are from I/B/E/S. The next section highlights the salient features of the dataset at hand.

4 The Anatomy of FOIA Requests

This section summarizes the Freedom of Information Act requests contained in the dataset. Recall that, in order to be included in the dataset, a number of criteria have to be met. First, the FOIA request has to be initiated by an institutional investor whose stock holdings are recorded in the 13F dataset. Second, the FOIA request must involve one or more companies whose stock prices and returns

are available from CRSP. Finally, the FOIA request must be submitted to the FDA, and not to another federal agency.

The setup is quite restrictive for a number of reasons. First, as mentioned in Section 3, investors often rely on third-party firms that specialize in submitting FOIA requests, making their requests untraceable. Second, institutional investors often request information about firms whose stocks are traded on stock exchanges outside the US, or about firms whose stocks are not listed on exchanges. Finally, institutional investors often request industry-wide information, which cannot be assigned to any particular company. We decided to maintain such a restrictive approach because we wish to ensure that the events contained in our dataset have a clear identification in terms of the requester, the subject of the request and the information disclosed by the FDA. Broader setups can be accommodated at the potential cost of blurring the link between information exchange and institutional investor actions.

Figure 6 summarizes the number of FOIA requests included in our dataset between 1999 and 2013. As the figure shows, the practice of submitting Freedom of Information Act requests has increased substantially over time. In the year 2000, we count only 6 requests to the FDA. The number of requests grew to 75 by 2012.[14] This highlights that the practice of submitting Freedom of Information Act requests is becoming increasingly popular over time.

4.1 Who Submits FOIA Requests?

Panel A of Table 1 reports the top 20 institutional investors in our dataset in terms of number of FOIA requests generated. The list uncovers significant heterogeneity in terms of type of investor, size, and strategy. For example, Ridgeback Capital (32 requests) and Sigma Capital (25 requests) are hedge funds specialized in the healthcare industry. The two are intimately related to SAC Capital Advisors (19 requests), as Sigma Capital is the healthcare hedge fund of SAC, and Ridgeback Capital's CEO Wayne Holman was a former employee of Sigma Capital.

By contrast, Bridger Management (48 requests) is a relatively small hedge fund ($1.5 bn in AUM), whose portfolio is tilted towards healthcare firms (40% of the total portfolio), but maintains investments in all sectors, ranging from consumer goods to financial services firms. Janus Capital (28

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[14]The number of requests is 69 in 2013; our dataset ended in October 2013, so we can expect the number to be greater than 75 for the whole year

requests) is a medium-size investment firm consisting mainly of retail mutual funds ($158 bn in AUM) that invests in public equity and fixed income markets across the globe.

Finally, the list is also populated by the asset management arms of financial conglomerates like Citigroup (24 requests), JP Morgan (22 requests), Morgan Stanley (17 requests), and Merrill Lynch (21 requests), and by well-known hedge funds like Soros Fund Management (22 requests) and the Cowen group (14 requests).

The repeated presence of certain investors in our list is consistent with theoretical frameworks that model security prices as sufficiently noisy to provide some investors with incentives for costly information acquisition; see Grossman and Stiglitz (1980), Hellwig (1980) and Verrecchia (1982). The FOIA information can be thought of as a costly signal and – with our data – we have the opportunity to assess who are the investors with lower costs of information acquisition and/or higher expected values from the information acquired.

To this end, we explore the characteristics of investors that submit FOIA requests using the following Logit model:

$$
y_{it} = \begin{cases} 1 & \text{if institutional investor } i \text{ submits a FOIA request at least once in the sample} \\ 0 & \text{otherwise,} \end{cases}
$$

and

$$
p_{it} = Pr\left(y_{it} = 1 | \boldsymbol{x}_{it}\right) = \frac{\exp\left(\boldsymbol{x}_{it}'\boldsymbol{\beta} + \delta_t\right)}{1 + \exp\left(\boldsymbol{x}_{it}'\boldsymbol{\beta} + \delta_t\right)}, \tag{1}
$$

where, following Agarwal, Jiang, Tang, and Yang (2013), $\boldsymbol{x}_{it}$ includes the following covariates: *Risk* is the monthly portfolio total volatility measured over the 12 months prior to the end of quarter t. *Idiosyncratic Risk* is the standard deviation of the residuals from the Fama-French model, augmented with momentum, using monthly returns for the 36-month period ending at t. *Portfolio Returns* is the monthly average return of the portfolio during quarter t. The construction of the variables just described assumes that the institution maintains the holdings of the previous quarter-end throughout quarter t.

Turnover is the inter-quarter portfolio turnover rate, calculated as the lesser of purchases and

sales, divided by the average portfolio size of the last and current quarters as imputed using 13F holdings. *Age* is the number of years since the institution's first appearance in the Thomson Reuters 13F holdings file (with the earliest 13F holdings file dated March 31, 1980). *Size* is the total equity portfolio size, calculated as the market value of its quarter t ending holdings; and *Herfindal* is the Herfindahl index of the portfolio at the same date, calculated from the market value of each component stock. $|Flow|$ is the absolute change in total portfolio value between two consecutive quarters, net of the change due to returns, scaled by the portfolio size at the previous quarter-end.[15] The model is estimated at the quarterly frequency and includes year-quarter time-effects δ_t to account for time trends in the covariates.

Table 2 reports the results for two specifications. The first includes *Risk*, while the second includes *Idiosyncratic Risk*. We keep the two regressors in separate specifications to avoid collinearity problems. The coefficient on size indicates that large institutional investors are more likely to submit FOIA requests. These agents have higher incentives to collect information, because they have larger stock positions to implement on the basis of the information collected; the observation that they are more likely to collect such information is consistent with equilibrium models of costly information acquisition, such as Grossman and Stiglitz (1980).

Those investors that trade more actively are more likely to submit FOIA requests, as indicated by the positive and significant coefficient on turnover, consistent with these investors being skilled enough to collect and trade on information that is valuable only in the short-term. The coefficients on risk indicate that institutional investors that submit FOIA requests tend to invest in riskier stocks, consistent with these stocks having more information risk. Interestingly, also the coefficient on fund flows is significant and positive. Finally, the remaining coefficients are not statistically significant.

Do FOIA investors request information systematically, or do they tend to do so only infrequently and in specific time periods? To answer this question, we report in Figure 7 the cumulative number of requests for the top 20 requesters over the years 2000-2013. The figure highlights that certain funds started submitting FOIA requests much earlier than others. For example, Bridger Management and

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[15]More precisely, we define $|Flow_{i,q}|$ for institutional investor i, in quarter q, as:

$$|Flow_{i,q}| = \left| \frac{PortSize_{i,q} - PortSize_{i,q-1}(1 + PortRet_{i,q})}{PortSize_{i,q-1}} \right|$$

SG Cowen & Co were already quite active FOIA requesters over the years 2000-2003, while others like Millennium Management and RBC Phillips Hager became active FOIA requesters only in 2010. The figure also highlights that, once requesters start submitting FOIA requests, they continue doing so over the following years. This can be seen by noting that the majority of the graphs in Figure 7 are upward sloping throughout the sample period. There are three notable exceptions. The first is Soros Fund, which submits a large number of requests in 2005, but does not submit any request thereafter. The second is SG Cowen & Co, which stops submitting FOIA requests from 2007 onwards. The third is Bridger Management that submits a large number of requests from 2000 to 2005 and seems to stop submitting new ones until 2012, when it starts again. Overall, the persistence in the requests seems to indicate that some investors specialize in FOIA requests, and that they consider the information they receive valuable in the formulation of their investment strategy.

4.2 Which Stocks are the Subject of FOIA Requests?

Turning to the stocks that are targets of FOIA requests, Panel B of Table 1 reports the 20 firms (with stock price and return data in CRSP) that have been the subject of the largest number of FOIA requests from institutional investors. There is a considerable amount of heterogeneity among the FOIA subjects. Some are very large pharma conglomerates, like Merck & Co (31 requests), AstraZeneca (22 requests), Johnson & Johnson (14 requests), Novartis (13 requests), Eli Lilly (13 requests), and Bristol-Myers Squibb (12 requests). Other important FOIA subjects are large biotech companies such as Genzyme Corp (50 requests), Biogen Idec Inc (28 requests), Amylin Pharmaceuticals (20 requests), and Biogen Inc (19 requests).[16] Finally, a few FOIA subjects are specialized Biotech firms. For example, Alexion Pharmaceuticals is specialized in delivering therapies to patients with ultra-rare diseases.[17]

How do the stocks that are targets of FDA FOIA requests differ from those that aren't? To answer this question we analyze the characteristics of the FOIA stocks and compare them to two different groups of stocks. The first is the universe of stocks included in the CRSP database, while the second

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[16]Note that Biogen Idec Inc was the result of the merger between Biogen Inc and Idec Pharmaceuticals in 2003.

[17]In the United States, a disease is defined as rare if it affects fewer than 650 patients per million of population, and ultra-rare if it affects fewer than 20 patients per million. Most ultra-rare diseases affect as few as one patient per million or less.

is the universe of pharmaceutical companies categorized using standard SIC classification codes.[18] We denote the FOIA stocks using an indicator variable and we regress it on a set of stock-market and accounting variables. We estimate the following specification at the quarterly frequency:

$$
y_{it} = \begin{cases} 1 & \text{if firm } i \text{ is the subject of a FOIA request at least once in the sample} \\ 0 & \text{otherwise,} \end{cases}
$$

and

$$
p_{it} = Pr\left(y_{it} = 1 | \boldsymbol{x}_{it}\right) = \frac{\exp\left(\boldsymbol{x}'_{it}\boldsymbol{\beta} + \delta_t\right)}{1 + \exp\left(\boldsymbol{x}'_{it}\boldsymbol{\beta} + \delta_t\right)}, \tag{2}
$$

where $\boldsymbol{x}_{it}$ denotes the set of explanatory variables, and δ_t are year-quarter time-effects. We group the regressors into four categories that proxy for return, risk, institutional investors' preferences, and fundamental firm characteristics.

The return category contains: *Returns*, computed as the quarter t return of a stock; and *Risk-adjusted Returns*, computed as the quarter t abnormal returns obtained from the Fama-French model augmented with momentum, estimated at a daily frequency and cumulated over the quarter.

The risk category contains *Idiosyncratic variance*, a measure of idiosyncratic risk computed as the quarter t sum of daily squared residuals obtained from the Fama-French model augmented with momentum; and *Realized variance*, a measure of total risk computed as the quarter t sum of the daily squared returns.

In terms of institutional investors' preferences, Falkenstein (1996) and Gompers and Metrick (2001) show that they prefer stocks with high visibility, high volatility, and low transaction costs, while Bennett, Sias, and Starks (2003) show that, over time, they have shifted their preferences towards smaller and riskier securities. To account for the findings in this literature, we include: *Turnover*, measured as the ratio between volume and shares outstanding; *Analyst Coverage*, measured as the number of analyst recommendations for a given stock; and *Age*, measured as the number of days since the stock entered the CRSP database.

Finally, we include the following accounting variables: *Profitability*, computed as the ratio between

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[18]Based on the Fama-French industry portfolios the pharmaceutical companies are those with SIC codes 2830 - 2839, 3693 - 3693, 3840 - 3859, and 8000 - 8099

operating income before depreciation (COMPUSTAT item: OIBDPQ) and total assets (COMPUSTAT item: ATQ); *Size*, computed as the log of total assets; *R&D*, computed as the ratio of research and development expenses (COMPUSTAT item: XRDQ) and sales (COMPUSTAT item: SALEQ);[19] *Market-to-Book ratio*, computed as the ratio of market value of assets and the book value of assets;[20] and *Market Leverage*, computed as the sum of long-term debt and debt in current liabilities divided by the market value of assets.

The results of our analysis are reported in Table 3. Panel A, that reports results using all the stocks contained in the CRSP database as benchmarks, contains coefficient estimates for two specifications. The first specification includes risk and returns, while the second includes idiosyncratic risk and risk-adjusted returns. We do not include these regressors in the same specification because of collinearity concerns.

The results indicate that FOIA stocks tend to have higher profitability, higher market capitalization, higher market-to-book ratios, lower leverage and tend to be more mature firms. Interestingly, they are also characterized by higher R&D and analyst coverage. The results suggest that these companies are characterized by large amounts of public information as processed by stock analysts, but they are also difficult to value because of the complexity of their operations. It is, therefore, not surprising that certain institutional investors would try to obtain relevant information exactly on these stocks.

The results in Panel B are consistent with those in Panel A, except for the analyst coverage coefficients that are now insignificant. This difference is consistent with pharmaceutical stocks being more complex, and therefore harder to value, than the average stock in CRSP.

To assess whether firms are the targets of FOIA requests on a continuous basis or whether specific events trigger the bulk of the requests, we report in Figure 8 the cumulative number of requests for the top 20 FOIA stocks over the years 2000-2013. The plots highlight that many of these companies like Genzyme, Merck & Co, Johnson & Johnson, and Bristol Myers Squibb, for example, are the subjects of FOIA requests on a continuous basis throughout the sample. Others, like Amylin Pharmaceuticals,

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[19]We replace R&D with 0 if research and development expense is missing, following Frank and Goyal (2003)

[20]The market value of assets is computed as the sum of the closing stock price (COMPUSTAT item: PRCCQ) multiplied by the common shares (COMPUSTAT item: CSHPRQ), debt in current liability (COMPUSTAT item: DLCQ), long-term debt (COMPUSTAT item: DLTTQ), and preferred stocks (COMPUSTAT item: PSTKQ), minus deferred taxes and investment tax credit (COMPUSTAT item: TXDITCQ).

Cephalon, and Genzyme Corp Tissue receive a relatively large number of requests over a one- or two-year period, but they do not seem to attract investors' attention at other times.

4.3 When are FOIA requests generated?

The models of Grossman and Stiglitz (1980), Hellwig (1980) and Verrecchia (1982) predict that the incentive to acquire information is higher during periods of higher uncertainty. Given that we observe the day of each FOIA request, we are able to test whether the risk of the stock and/or other motives can explain the timing of the requests.

To this end, we restrict the analysis only to the stocks that have received at least one FOIA request throughout the sample, and denote the FOIA request day using an indicator variable. We estimate the following model at the daily frequency:

$$
y_{it} = \begin{cases} 1 & \text{if firm } i \text{ is the subject of a FOIA request on day } t \\ 0 & \text{otherwise,} \end{cases}
$$

and

$$
p_{it} = Pr\left(y_{it} = 1 | \boldsymbol{x}_{it}\right) = \frac{\exp\left(\boldsymbol{x}_{it}'\boldsymbol{\beta} + \gamma_i + \delta_t\right)}{1 + \exp\left(\boldsymbol{x}_{it}'\boldsymbol{\beta} + \gamma_i + \delta_t\right)}, \tag{3}
$$

where γ_i denotes a stock fixed effect, δ_t denotes year-quarter fixed effects, and $\boldsymbol{x}_{it}$ denotes the set of explanatory variables described in Section 4.2, with the exception that the returns and the risk variables are estimated recursively using a three-month rolling window of daily observations ending at time t.

Table 4 reports the results across six different specifications. In the first four, we include the risk and return variables individually, while keeping all of the other variables unchanged. Again, we do so to avoid including potentially highly collinear regressors. The fifth (sixth) specification includes both risk and returns (idiosyncratic risk and risk-adjusted returns).

Starting from the risk and return variables, the results indicate that risk, as measured by either realized or idiosyncratic variance, is positively related to the probability of receiving a FOIA request, and the coefficient is statistically significant in the more robust regressions 5 and 6. The opposite

holds for returns; they are, instead, negatively related to the probability of a FOIA request. This suggests that firms that undergo periods of high uncertainty and low market returns are more likely to be targeted. These findings are consistent with such stocks having greater levels of uncertainty about their profitability, as well as, potentially, greater levels of private information.

The remaining regressors highlight a few additional interesting facts. First, a drop in the firm profitability increases the probability of a request, indicating that firms undergoing financial hardship – perhaps related to a large cost of testing and/or manufacturing a new drug – are more likely to be FOIA-targeted. Second, institutional investors do not seem to target firms on which information becomes more scarce, as analyst coverage is positively related to the probability of a FOIA request. Rather, it seems that requests are triggered by the uncertainty regarding the value of the stock as highlighted also by the positive and significant coefficient on turnover, usually taken as a measure of differences in opinion, see Karpoff (1987) and Harris and Raviv (1993). Thus, the uncertainty in these large-cap pharma stocks attract both sell-side analysts and FOIA requestors.

Out of the remaining variables, we highlight that market capitalization and the market-to-book ratio are positively related to the probability of a FOIA request, while market leverage, assets, and age do not seem to have a significant impact.

4.4   What Information is Requested?

For 233 FOIA requests out of 529, we were able to obtain some further documentation from the FDA in addition to the one contained in the FOIA logs. While the data is far from complete, it allows us to get a sense of what type of information is usually requested, how expensive are FOIA requests, and the profile of the individuals within the investment firms that submit the FOIA requests.

In the majority of the cases, the institutional investors request copies of Establishment Inspection Reports (EIRs) and the 483 forms.[21] They also request detailed documentation related to the FDA Adverse Event Reporting Systems and MedWatch, which are the two systems used by the FDA to collect negative side-effects associated with the drugs on the market. Finally, they request not only copies of the warning letters issued by the FDA, but also the minutes of the FDA meetings associated

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[21]The U.S. Food and Drug Administration (FDA) is authorized to perform inspections under the Federal Food, Drug, and Cosmetic Act, SEC. 704 (21 USC 374) "Factory Inspection". Form FDA 483, Inspectional Observations, is a form used by the FDA to document and communicate concerns discovered during these inspections

with them and the response of the pharmaceutical companies.

We conclude that the majority of FDA FOIA requests inquire about potentially negative news, or the lack thereof. This finding is consistent with the literature showing that managers have strong incentives to delay or hide the disclosure of bad news, relative to good news (see Kothari, Shu, and Wysocki (2009) and deHaan, Shevlin, and Thornock (2015)). A few exceptions relate to some requests that explicitly ask for the clinical trials supporting new drug applications, possibly with the intent to predict the likelihood of the drug being approved.

Finally, to highlight the degree of sophistication of these institutional investors, we report below one request submitted by Erik Keisman (PhD) of Capital World Investor:

"I would like to request a record of FOIA requests from individuals wishing to obtain Form 483 reports issued to Novartis AG, relating to inspections of pharmaceutical manufacturing facilities. [...] In essence, I want to know how many people are requesting the same information that I have requested, in a related FOIA request submitted to your office."

The requestors, in the majority of the cases, are highly sophisticated individuals with very strong background in medicine, chemistry and bio-chemistry. In particular, one in four of the requesters holds a PhD, a Medical Degree, or both.

Interestingly, many of the FOIA requests contain the maximum price that the requester is willing to pay for the information. A quick tabulation reveals that at least a quarter of the requesters were willing to pay "any fee" or "reasonable fee" for the information. The maximum price, for those that indicated one, ranged from $100 to $2000 dollars. In terms of actual price paid, on the other hand, our data indicates that the average FOIA response is associated with a rather small price of $70, and that the price is mainly driven by the administrative labor costs charged by the FDA. In some cases, the requests can be quite expensive, and reach $5,000 or more, but these cases were very rare in our sample.

5 Profitability of FOIA Requests

In this section, we investigate, systematically, the relations analyzed in our case study of Section 2. In particular, we first estimate the profitability of the trades associated with FOIA requests. We then

control for managers' skills and assess, for each institutional investor, whether the trades connected with FOIA requests are more profitable than those that aren't. We conduct this analysis to gain insights into the magnitude of the abnormal returns generated by FOIA requests.

5.1 Main Results

In our baseline tests we first compute the change in the stock holdings, for the investor that has submitted a FOIA request. We focus on the specific stock and quarter associated with the request. We then compute the quarterly cumulative abnormal returns for that stock, starting from the end of the quarter over which the FOIA request is filed. The cumulative abnormal returns for stock i from day t_0 to day T are computed as:

$$Cum\_Abn\_Ret_{i,t_0:T} = \left(\prod_{s=t_0}^{T} (1 + \hat{\epsilon}_{i,s}) \right) - 1$$

where $\hat{\epsilon}_{i,s}$ is the abnormal return of stock i on day s, and is computed using three different return models. The first is the Fama-French model, augmented with momentum:

$$\hat{\epsilon}_{i,s} = Ret_{i,s} - \hat{\alpha}_i - \hat{\beta}_{i,1} \ Mkt_s - \hat{\beta}_{i,2} \ HML_s - \hat{\beta}_{i,3} \ SMB_s - \hat{\beta}_{i,4} \ MOM_s,$$

where Mkt_s, HML_s, SMB_s, and MOM_s are the excess returns on day s for the NYSE/AMEX/NASDAQ index, the size, the value, and the momentum factors. The second is the single-factor market model:

$$\hat{\epsilon}_{i,s} = Ret_{i,s} - \hat{\alpha}_i - \hat{\beta}_{i,1} \ Mkt_s,$$

and the third, and simplest, is the constant (iid) return model:

$$\hat{\epsilon}_{i,s} = Ret_{i,s} - \hat{\mu}_i,$$

where $\hat{\mu}_i$ is the average excess return of stock i over the estimation window. All parameters are estimated recursively, using a quarter of daily observations ending at day $t_0 - 1$.

Before turning to formal statistical tests, the top panel of Figure 9 shows the abnormal return

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densities associated with the Fama-French model, computed for the quarter after the FOIA request has been submitted. We divide the stocks in three groups. In the first, we plot the cases where investors' stock holdings *decrease* after the FOIA request (red dashed-dotted line). In the second, the cases where investors' stock holdings *increase* after the FOIA request (blue dashed line). In the third, the cases where investors' stock holdings remain unchanged after the FOIA request (black solid line). The second and third panels repeat the exercise, using abnormal returns computed with the Market and Constant models, respectively.

For the Fama-French model, the return density when investors' holdings increase is right-shifted, compared to the return density when investors' holdings decrease, with the blue line peaking to the right of the zero-return mark (the median equals 7.20%) and the red line peaking to the left of it (the median equals -5.90%). The black line, associated with no changes in holdings, lies in the middle, with a median value of -0.43%. The results are qualitatively similar when we use the other two model specifications.

Moving to formal statistical tests of the findings displayed in Figure 9, Table 5 analyzes the relation between changes in institutional investors' holdings and the returns for the companies that have been the subject of FOIA requests. Panel A shows that, out of the 529 FOIA requests we consider, 155 (or 29%) requests are associated with an increase in stock holdings, 212 (or 40%) requests are associated with no changes in the positions, and 162 (or 31%) requests are associated with a decrease in the FOIA-target stock holdings of the investor.

For each of these cases, Panel B reports the percentage of positive and negative quarterly (abnormal) returns over the quarter following the FOIA request(s). For the Fama-French model, abnormal returns for the stocks that are subject to a FOIA request and are sold by the institutions requesting the information are negative 64% of the time and positive 36% of the time, while abnormal returns for the stocks that are subject to a FOIA request and are bought by the institutions are positive 66% of the time, and negative 34% of the time. Finally, stocks for which the holdings of the FOIA-requesting institutions don't change exhibit abnormal returns that are positive 50% of the time and negative 50% of the time, consistent with no significant news being obtained through the request. The Market and Constant models (rows two and three) are qualitatively similar to the Fama-French model. Overall,

these results suggest that the information contained in the FOIA response could be a source (among potential others) of the profitability of these trades.

To further corroborate the analysis reported above, Panel C (Panel D) of Table 5 relates the median (average) returns to the changes in investors' stock holdings. For the Fama-French model, the results show that, when the investors increase their stock holdings, the median (average) return is 7.20% (5.26%); when the positions remain unchanged, the median (average) return is -0.43% (4.16%); and when FOIA-requesting institutions decrease their holdings, the median (average) return is -5.90% (-3.09%). Statistically, the median returns after positive and negative changes in stock holdings are different from zero at the 1% level, while the median return for the unchanged stock holdings is not significant. For average returns, on the other hand, the results indicate 1% statistical significance for no change and a positive change in stock holdings, and no statistical significance for a negative change in stock holdings. The difference in results for the mean and median indicates that the returns associated with no changes in instituitional investors' holdings have a substantial degree of positive skewness, as evidenced by the plots reported in Figure 9. Once again, the other model specifications provide similar results.

Finally, we present in Table 6 the p-values from tests of differences in medians in Panel A, and differences in means in Panel B, between each pair of the three return distributions. The Fama-French model results, shown in the first row of Panel A, indicate that the median returns associated with negative changes in stock holdings are statistically different from those associated with zero and positive changes in stock holdings, respectively, with p-values equal to 0.013 and 0.000. On the other hand, median returns for the zero and positive holdings changes are not statistically different from each other, with a p-value equal to 0.207. The p-values for the means are virtually identical, although slightly larger in magnitude. Finally, the results for the Constant and Market models are very similar in Panel A, but are somewhat weaker in Panel B. Overall, these results indicate that FOIA requests that result in selling behavior by institutions contain more value-relevant news than those that result in either no change or in buying behavior.

5.2 Results Controlling for Managers' Skills

The results reported in Section 5.1 did not control for investors' skills. Chen and Liang (2007) and Jiang, Yao, and Yu (2007) show that some hedge funds and mutual funds possess significant timing skills. Furthermore, Kacperczyk, Nieuwerburgh, and Veldkamp (2014) provide evidence of stock picking ability in booms, and market timing ability in recessions.

It is possible that the institutions that we follow do not generate abnormal returns due to the FOIA information, and that such abnormal returns are spuriously correlated with the requests. To address this concern, we control for managers' skills across two separate dimensions. First, we control for the possibility that institutional investors are able to predict abnormal returns in their FOIA stocks, even in those periods when they do not submit FOIA requests. Second, we control for the possibility that FOIA investors are particularly skilled at the time of the FOIA request, and therefore perform well across all the stocks they hold in their portfolio at that time.

5.2.1 Skills in FOIA Stocks Across Time

To test whether the investors that submit FOIA requests can consistently predict the abnormal returns of the FOIA stocks, we undertake the following exercise. First, for every manager-stock pairing, we compute the abnormal return associated with changes in holdings following the procedure described in Section 5.1, but limited to those quarters where a FOIA request was not submitted by the institution. In other words, we compute the abnormal return of the trades that are *not* associated with a FOIA request, but that pertain to the *same manager* and the *same stock* for which a FOIA request was submitted at some point in the sample.

Second, for both FOIA and non-FOIA trades, we separate the cases where the stock holdings have increased from the cases where they have decreased, and we compute the empirical percentile of the FOIA return as the percentage of non-FOIA returns smaller than the FOIA return. More formally, we compute for each manager i and stock j:

$$P_{i,j} = \frac{1}{S} \sum_{s \in S} \mathbf{1}_{\{R_{i,j,t} - R_{i,j,s} > 0\}},$$

where $R_{i,j,t}$ is the FOIA return at time t, $R_{i,j,s}$ is the non-FOIA return at time s and S represents the dates of all the non-FOIA returns for manager i and stock j. We compute an equivalent expression when stock holdings decrease.

The rationale for splitting the two cases is that, if the FOIA requests allowed for better investment decisions, we would expect the stock abnormal returns to be more positive if the manager increases the holdings of a stock, and more negative if the manager decreases the holdings.

In Figure 10, we report the percentiles' distributions across both stocks and institutional investors. The left panels plot the results when stock holdings decrease across the Fama-French, Market and Constant models, while the right panels report the equivalent results when stock holdings increase.

Starting from the positive holding changes, the top-right panel of Figure 10 shows that the FOIA returns are higher than the non-FOIA returns, as the average and median of the percentiles' distribution equal 0.58 and 0.61, respectively. This indicates that the returns of the stocks are greater when stock holdings increase in conjunction with a FOIA request. Furthermore, the fact that the median is greater than the mean indicates that the distribution is skewed to the left.

Moving to negative changes in holdings, the top-left panel of Figure 10 shows that the FOIA returns are lower than the non-FOIA returns, as the average and median of the percentiles' distribution equal 0.4 and 0.32, respectively. This indicates that the returns of the stocks are lower when stock holdings decrease in conjunction with a FOIA request. Furthermore, the fact that the median is much lower than the mean indicates that the distribution is heavily skewed to the right.

The middle and bottom panels of Figure 10 show that the results are largely consistent when we use the Market and the Constant models to compute abnormal returns.

5.2.2 Time-Varying Skills Across All Stocks

We now control for the possibility that FOIA investors are particularly skilled at the time of the FOIA request, and, therefore, perform well across all the stocks they hold in their portfolio during that quarter. For each manager in our sample, we compute abnormal returns for all stocks traded when a FOIA request is submitted. Specifically, we compute the returns of the trades that are *not* associated with a FOIA request, but that pertain to the *same manager* and the *same quarter* of the

request.

We then separate, for both FOIA and non-FOIA trades, the cases where the stock holdings have increased from the cases where they have decreased, and we compute the empirical percentile of the FOIA return as the percentage of non-FOIA returns smaller than the FOIA return. More formally, we compute for each manager i and stock j:

$$P_{i,j} = \frac{1}{K} \sum_{k \in K} \mathbf{1}_{\{R_{i,j,t} - R_{i,k,t} > 0\}},$$

where $R_{i,j,t}$ is the FOIA return at time t, $R_{i,k,t}$ is the return of the non-FOIA stock k at time t and K is the set of all non-FOIA stocks traded by manager i at time t. We compute an equivalent expression for negative changes in holdings.

Finally, in Figure 11 we report the percentiles' distributions across both stocks and institutional investors. The left panels plot the results for holdings decreases across the Fama-French, Market and Constant models, while the right panels report the equivalent results for holdings increases.

Starting from the positive holdings changes, the top-right panel of Figure 11 shows that the FOIA returns are higher than the non-FOIA returns, as the average and median of the percentiles' distribution equal 0.60 and 0.68, respectively. This indicates that the FOIA stock returns are greater than the non-FOIA stock returns. Moving to the negative holding changes, the top-left panel of Figure 11 shows that the FOIA returns are lower than the non-FOIA returns, as the average and median of the percentiles' distribution equal 0.44 and 0.40, respectively. This indicates that the FOIA stock returns are smaller (more negative) than the non-FOIA stock returns.

The middle and bottom panels of Figure 11 show that the results are largely consistent when we use the Market and the Constant models to compute abnormal returns.

6   Is the FOIA Information Available to Other Market Participants?

We now assess whether the trades of FOIA requesters are unrelated to the trades of all other institutional investors that do not submit a FOIA request. If the two are not related, and the FOIA funds are able to predict future returns as shown in Section 5.1, we argue that there is evidence that the FOIA

information is not systematically available to other investors through other means. Furthermore, because it has been widely documented that institutional investors follow analysts' recommendations, we also assess whether the FOIA trades are unrelated to analysts' recommendations.

6.1 Can the FOIA Trades be Explained by those of other Institutional Investors?

As argued by Froot, Scharfstein, and Stein (1992) and Hirshleifer, Subrahmanyam, and Titman (1994), investment managers are expected to display similarities in their trades if they base their investment strategies on the same indicators. Furthermore, managers may trade with the crowd due to the reputational risks of acting differently from other managers, as modeled by Scharfstein and Stein (1990).

We hypothesize that the trading behavior of the FOIA funds is orthogonal to that of the other funds for at least two reasons. First, the fund manager should trade on the basis of the FOIA information only if he/she thinks it is valuable. Second, he/she should think that the information is not available to others in the market place because, if it was, it would already be incorporated into asset prices.

To systematically assess this hypothesis, we conduct the following exercise. For each of the 529 FOIA requests analyzed in Section 5.1, we compute the changes in holdings for those funds that submitted a FOIA request. We then compute the median portfolio holdings change across all the institutional investors that did not submit a FOIA request, but with active positions in the stock target of the FOIA request at the time of the request. We distinguish three cases: increase, decrease, and no-change in stock holdings; and report the relative frequencies for FOIA funds and non-FOIA funds by way of a contingency table in Panel A.I. of Table 7. The three entries along the diagonal delimited by the box report the percentage of time the trades among the two groups of investors coincide, while the remaining six entries in the box report the percentage of time they don't. Together, the nine entries in the box represent the joint distribution of the trades. On the other hand, the row (column) outside the box reports the marginal distribution of the trades executed by the non-FOIA funds (FOIA funds). The last row of Panel A.I. reports the p-value for the Pearson χ^2 test, which evaluates whether the product of the marginal distributions equals the joint distribution as implied by independence.

As the table shows, there is no systematic relation between the trades of FOIA and non-FOIA funds, as the entries along the diagonal are not systematically larger or smaller than the other entries. This impression is confirmed by the p-value of the Pearson χ^2 test, that being equal to 0.471, suggests that we cannot reject the null hypothesis that the trades are independent.

To corroborate the contingency table results, we report, in Panel B.I., the evidence of a multinomial logit regression specified as:

$$P_{i,j} = \frac{e^{\boldsymbol{x}_i' \boldsymbol{\beta}_j}}{1 + \sum_{k=1}^{2} e^{\boldsymbol{x}_i' \boldsymbol{\beta}_k}}$$

where $P_{i,j}$ is the probability that the i-th FOIA request is associated with an increase in holdings ($j = 1$) or a decrease in holdings ($j = 2$). The probability that there is no change in the holdings represents our base case and is equal to $P_{i,0} = \frac{1}{1 + \sum_{k=1}^{2} e^{\boldsymbol{x}_i' \boldsymbol{\beta}_k}}$. The vectors of coefficients for holdings increases and decreases are $\boldsymbol{\beta}_1$ and $\boldsymbol{\beta}_2$, while the vector of independent variables is denoted by $\boldsymbol{x}_i$ and includes the intercept as well as the median change in non-FOIA institutional investors' holdings. The model is estimated using maximum likelihood, see Greene (2003).

The results, reported in Panel B.I., show that none of the coefficients on the non-FOIA institutional trades is able to explain the positive or negative changes in FOIA funds' stock holdings. Furthermore, the Pseudo-R^2 is only 0.25%, indicating that there is no relation between the trades across the two groups.

To conclude, our results indicate that the FOIA trades are largely disjointed from the trades of the other institutional investors in the market. This supports the view that the information contained in the FOIA responses is not widely available to all other institutional investors.

6.2 Can the FOIA Trades be Explained by Analysts' Recommendations?

We now conduct a similar analysis using analysts' data as a large literature has shown that the trades of institutional investors are closely related to analysts' recommendations. For example, Brown, Wei, and Wermers (2014) show that mutual funds "herd" into stocks after analysts' upgrades and herd out of stocks after analysts' downgrades. Furthermore, Mikhail, Walther, and Willis (2007) find that both large and small traders react to recommendations, but that large investors are more sophisticated in

the sense that they react more when valuable information is contained in analysts' recommendations revisions.

To assess whether analysts' recommendations can explain the trades of the FOIA funds, we compute the median change in recommendations across all the analysts covering the stock at the time of a FOIA request. We distinguish three cases: upgrade, downgrade, and no-change. We then interpret an upgrade (downgrade) as a signal to increase (decrease) the holdings of a stock and, based on this principle, construct the relative frequencies of recommendations and FOIA trades in Panel A.II. of Table 7. We cannot reject the null that FOIA trades and analysts' recommendations are independent as the Pearson χ^2 test has a p-value of 0.114.

The contingency table results, however, uncover an interesting relation between FOIA trades and recommendations. In particular, the joint probability that FOIA funds decrease their holdings in conjunction with upgrades is 11.1%, higher than the joint probability associated with downgrades, which equals 6.8%. Similarly, FOIA funds are more likely to increase their holdings in conjunction with downgrades (joint probability=13%) than upgrades (joint probability=9.5%). This pattern is confirmed by the multinomial logistic regression reported in Panel B.II., which uncovers that changes in analysts' recommendations explain the selling decisions of FOIA funds with a coefficient statistically significant at the 10% level. The (unreported) marginal effect[22] confirms the results of the contingency table as it indicates that an upgrade in recommendations is associated with negative holding changes by FOIA investors. An upgrade in recommendations is also negatively related to positive holding changes by FOIA investors, but this relation is not statistically significant (p-value=0.311).

Overall, the result that trading by institutions in conjunction with their FOIA requests occurs more often when it goes against the prevailing analyst recommendation indicates that FOIA-requesters are especially keen to trade when the FOIA information is most value-relevant. That is, bad news contained within a FOIA disclosure is most likely to result in large stock price decrease when the consensus analyst recommendation is positive – and, presumably, followed by most other institutional investors.

To conclude, our results suggest a negative relation between FOIA trades and analysts' recommendations and, therefore, provide strong evidence that the FOIA information is not widely incorporated

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[22]Computed using Equation 21-47, (Greene, 2003, Page 721)

in financial markets when exploited by FOIA requesters.

7   Conclusions

The Freedom of Information Act (FOIA) allows for the full or partial disclosure of previously unreleased information and documents controlled by the United States government. In this paper we show that FOIA requests are actively used by sophisticated investors to gather information about pharmaceutical firms.

We uncover that the most active FOIA requesters are institutional investors, mainly hedge funds, that are larger and trade more frequently than their peers. They submit FOIA requests on stocks that are complex to value and they do it in periods of high firm-specific and market-wide uncertainty.

We find a considerable amount of persistence in their requests, in the sense that once they "discover" this new source of information and start submitting FOIA requests, they continue doing so during the following years, supporting the view that institutional investors find the FOIA information relevant for their investment decisions, and that certain institutions have advantages in processing this information.

Our study confirms that FOIA-related information is valuable, as it allows institutional investors to generate substantial trading gains. In particular, when institutional holdings *increase* in conjunction with a FOIA request, future quarterly abnormal returns on the associated stocks average 5.26%. On the other hand, when institutional holdings *decrease*, future quarterly abnormal returns average -3.09%. These results are robust to controlling for investors' firm-specific skills and time-varying market-wide skills.

Finally, we document that specializing in FOIA requests is profitable because the information acquired is not widely available to the other agents in the marketplace, as evidenced by the fact that FOIA requesters' trades are not congruent with those of other institutional investors and analysts' recommendations.

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Table 1. Top FOIA Requesters and FOIA Subjects

Panel A. FOIA Requesters		**Panel B. FOIA Subjects**	
Institutional Investor	**Number of Requests**	**Firm**	**Number of Requests**
Bridger Management	48	Genzyme Corp	50
Ridgeback Capital Mgmt LLC	32	Merck & Co Inc	31
Janus Capital Corp	28	Biogen Idec Inc	28
Sigma Capital Mgmt LLC	25	Astrazeneca Plc	22
Citigroup Inc	24	Amylin Pharmaceuticals Inc	20
J.P. Morgan Invt Mgmt (US)	22	Biogen Inc	19
Millennium Management LLC	22	Hospira Inc	18
Soros Fund Management Co	22	Alexion Pharmaceuticals Inc	14
Merrill Lynch Asset Mgmt	21	Johnson and Johnson	14
Oracle Investment Management,	21	Eli Lilly & Co	13
Jefferies & Company Inc	20	Novartis A G	13
SAC Capital Advs LLC	19	American Pharmaceuticals Ptn	12
First Manhattan Co	18	Bristol Myers Squibb Co	12
Morgan Stanley D Witter	17	St Jude Med Inc	12
RBC Phillips Hager & North Inv C	17	Genzyme Corp Tissue	10
Deutsche BK Aktiengesellschaft	16	Gilead Sciences Inc	10
Baird Investment Management	15	Mylan Labs Inc	10
Bear Stearns & Co	15	Amgen Inc	9
Healthcor Management LP	14	Andrx Corp	9
SG Cowen & Co LLC	14	Cephalon Inc	9

This table reports in Panel A the top twenty institutional investors by number of FOIA requests submitted to the FDA. It reports in Panel B the top twenty stocks by number of FDA FOIA requests.

Table 2. Comparison Between FOIA and non-FOIA Institutional Investors

	Spec 1	Spec 2
Risk	2.707***	
	(3.25)	
Idiosyncratic Risk		3.551**
		(2.12)
Portfolio Returns	-1.823*	-0.981
	(-1.72)	(-0.64)
Turnover	0.562***	0.594***
	(5.90)	(5.23)
Age	0.188	-0.070
	(0.83)	(-0.21)
Size	0.595***	0.616***
	(9.29)	(8.66)
Herfindahl Index	-3.659	-5.283
	(-1.38)	(-1.48)
$|Flow|$	0.234***	0.236***
	(4.53)	(4.22)
N	112,612	80,009
Log Likelihood	-1496.059	-1261.809
Pseudo R^2	0.152	0.158
Time Effects	Yes	Yes

This table compares the characteristics of FOIA and non-FOIA institutional investors using a Logit model at the quarterly frequency. The dependent variable is an indicator that takes the value 1 if the investor has submitted a FOIA request at least once in the sample and the value 0 otherwise. The universe of institutional investors included in the analysis are those that appear in the Thomson Reuters 13F database. Reported are coefficient estimates and their t-statistics (in parentheses). What follows is a description of the covariates included. *Risk* is the monthly portfolio total volatility during the past 12 months ending in this quarter-end. *Idiosyncratic Risk* is the standard deviation of the residuals from the Fama-French model augmented with momentum using monthly returns for the 36-month period ending in the current quarter. *Portfolio Returns* is the monthly average return of the portfolio during the quarter. The construction of the variables just described assumes that the institution maintains the holdings of the previous quarter-end throughout the following quarter. *Turnover* is the inter-quarter portfolio turnover rate, calculated as the lesser of purchases and sales divided by the average portfolio size of the last and current quarters. *Age* is the number of years since the institution's first appearance on Thomson Reuters. *Size* is the total equity portfolio size, calculated as the market value of its quarter-end holdings; and *Herfindal* is the Herfindahl index of the portfolio, calculated from the market value of each component stock. $|Flow|$ is the absolute change in total portfolio value between two consecutive quarters, net of the change due to returns, scaled by the portfolio size at the previous quarter-end (see footnote 15 for details). Standard errors are adjusted for heteroskedasticity and are clustered at the institutional investors' level. Included are quarterly time effects. Coefficients marked with ***, **, and * are significant at the 1%, 5%, and 10% level, respectively.

Table 3. Comparison Between FOIA and non-FOIA Stocks

	Panel A. Benchmark Group: CRSP Stocks		Panel B. Benchmark Group: Pharmaceutical Stocks	
Risk	-0.384 (-1.37)		0.019 (0.49)	
Idiosyncratic Risk		-0.024 (-0.22)		0.029 (0.78)
Returns	0.079** (2.01)		0.025 (0.65)	
Risk-Adj. Returns		0.013 (0.96)		0.020 (0.64)
Profitability	5.516*** (3.53)	5.703*** (3.60)	-0.080 (-0.05)	-0.177 (-0.11)
R&D	2.821*** (9.36)	2.821*** (9.30)	0.552** (2.02)	0.547** (1.99)
Turnover	-0.017 (-0.29)	-0.020 (-0.35)	0.136* (1.74)	0.152* (1.90)
Analyst Coverage	0.252** (2.40)	0.252** (2.39)	0.045 (0.38)	0.047 (0.39)
Age	0.412*** (3.66)	0.438*** (3.63)	0.215* (1.80)	0.248* (1.92)
Market Capitalization	0.346** (2.45)	0.346** (2.44)	0.320** (2.35)	0.307** (2.24)
Market-to-Book Ratio	0.187*** (3.78)	0.191*** (3.87)	0.097** (2.02)	0.099** (2.05)
Market Leverage	-1.654*** (-2.76)	-1.646*** (-2.74)	-2.078*** (-3.05)	-2.093*** (-3.06)
Assets	0.020 (0.13)	0.026 (0.17)	0.437*** (3.24)	0.446*** (3.29)
N	315,339	307,436	35,467	34,568
Log Likelihood	-27384.617	-26886.276	-12936.492	-12646.471
Pseudo R^2	0.206	0.206	0.280	0.281
Time Effects	Yes	Yes	Yes	Yes

This table compares the characteristics of FOIA and non-FOIA stocks using a Logit model at the quarterly frequency. The dependent variable is an indicator that takes the value 1 if the stock has received a FOIA request at least once in the sample and the value 0 otherwise. Reported are coefficient estimates and their t-statistics (in parentheses). In Panel A, we compare the FOIA stocks to those listed on NYSE, AMEX or NASDAQ. In Panel B we compare the FOIA stocks to the pharmaceutical companies (see footnote 18 for details). What follows is a description of the covariates included. *Risk* is the sum of the daily squared returns, *Idiosyncratic Risk* is the sum of daily squared residuals obtained from the Fama-French model augmented with momentum, *Returns* is the return of the stock, and $Risk-Adj.Returns$ computed as the quarterly cumulative abnormal returns obtained from the Fama-French model augmented with momentum. All these quantities are computed using daily data in a given quarter. *Profitability* is the ratio between operating income before depreciation (COMPUSTAT item: OIBDPQ) and total assets (COMPUSTAT item: ATQ), *R&D* is the ratio of research and development expense (COMPUSTAT item: XRDQ) and sales (COMPUSTAT item: SALEQ), *Turnover* is the ratio between volume and shares outstanding, *Analyst Coverage* is the (log) number of analysts recommendations for a given stock, *Age* is the (log) number of days since the stock entered the CRSP database, *Market Capitalization* is the (log of) market value of assets computed as the product of the price and share outstanding, *Market-to-Book ratio* is computed as the ratio of market value of assets and the book value of assets – where the market value of assets is computed as detailed in footnote 20, *Market Leverage* is the sum of long-term debt and debt in current liability divided by the market value of assets, *Assets* is computed as the log of total assets (COMPUSTAT item: ATQ). Standard errors are adjusted for heteroskedasticity and are clustered at the stock level. Included are quarterly time effects. Coefficients marked with ***, **, and * are significant at the 1%, 5%, and 10% level, respectively.

Table 4. Timing of the FOIA Requests - Stocks

	Spec 1	Spec 2	Spec 3	Spec 4	Spec 5	Spec 6
Risk	0.234 (1.61)				0.429*** (2.83)	
Idiosyncratic Risk		0.262 (1.59)				0.375** (2.26)
Returns			-0.548** (-2.29)		-0.634*** (-2.75)	
Risk-Adj. Returns				-0.413* (-1.72)		-0.467** (-2.03)
Profitability	-3.127 (-1.56)	-3.838* (-1.89)	-3.537* (-1.75)	-4.191** (-2.05)	-3.298* (-1.65)	-3.888* (-1.91)
R&D	-0.342 (-1.07)	-0.288 (-0.89)	-0.358 (-1.11)	-0.293 (-0.91)	-0.348 (-1.08)	-0.276 (-0.86)
Turnover	0.463*** (6.92)	0.488*** (7.24)	0.474*** (7.09)	0.500*** (7.42)	0.457*** (6.80)	0.489*** (7.25)
Analyst Coverage	0.750*** (4.04)	0.774*** (4.13)	0.694*** (3.70)	0.726*** (3.82)	0.681*** (3.63)	0.716*** (3.77)
Age	0.044 (0.16)	0.433 (1.35)	-0.034 (-0.12)	0.361 (1.12)	0.009 (0.03)	0.425 (1.32)
Market Capitalization	0.528*** (2.75)	0.527** (2.71)	0.776*** (3.52)	0.708*** (3.22)	0.811*** (3.68)	0.719*** (3.30)
Market-to-Book Ratio	0.154** (2.57)	0.162*** (2.64)	0.108* (1.70)	0.128** (2.01)	0.108* (1.71)	0.131** (2.05)
Market Leverage	-1.402* (-1.69)	-1.424* (-1.71)	-0.844 (-0.99)	-1.012 (-1.18)	-0.864 (-1.01)	-1.056 (-1.24)
Assets	0.411* (1.79)	0.412* (1.77)	0.153 (0.61)	0.220 (0.87)	0.145 (0.58)	0.234 (0.94)
N	1892458	1834858	1892458	1834858	1892458	1834858
Log Likelihood	-3832.276	-3751.195	-3830.295	-3750.477	-3828.002	-3748.915
Pseudo R^2	0.087	0.086	0.088	0.086	0.088	0.087
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes

This table estimates a Logit model at the daily frequency to assess the determinants of a stock being the subject of a FOIA request. The dependent variable is an indicator that takes the value 1 on the day the stock is the subject of a FOIA request and the value 0 otherwise. Reported are coefficient estimates and their t-statistics (in parentheses). What follows is a description of the covariates included. *Risk* is the sum of the daily squared returns, *Idiosyncratic Risk* is the sum of daily squared residuals obtained from the Fama-French model augmented with momentum, *Returns* is the return of the stock, and $Risk - Adj.Returns$ is the risk-adjusted return computed as $\hat{\alpha}_i + \hat{\epsilon}_{it}$, where $\hat{\alpha}_i$ and $\hat{\epsilon}_{it}$ are obtained from the Fama-French model augmented with momentum. All these quantities are computed using daily data over the previous quarter. *Profitability* is the ratio between operating income before depreciation (COMPUSTAT item: OIBDPQ) and total assets (COMPUSTAT item: ATQ), *R&D* is the ratio of research and development expense (COMPUSTAT item: XRDQ) and sales (COMPUSTAT item: SALEQ), *Turnover* is the ratio between volume and shares outstanding, *Analyst Coverage* is the (log) number of analysts recommendations for a given stock, *Age* is the (log) number of days since the stock entered the CRSP database, *Market Capitalization* is the (log of) market value of assets computed as the product of the price and share outstanding, *Market-to-Book ratio* is computed as the ratio of market value of assets and the book value of assets – where the market value of assets is computed as detailed in footnote 20, *Market Leverage* is the sum of long-term debt and debt in current liability divided by the market value of assets, *Assets* is computed as the log of total assets (COMPUSTAT item: ATQ). Standard errors are adjusted for heteroskedasticity and are clustered at the institutional investors level. Included are stocks' fixed effects and quarterly time effects. Coefficients marked with ***, **, and * are significant at the 1%, 5%, and 10% level, respectively.

Table 5. Portfolio Changes and Stock Returns

	Panel A. Frequency Statistics		
	Decrease in Holdings	No Change in Holdings	Increase in Holdings
Frequency	31%	40%	29%

	Panel B. Results for Directional Returns					
	Decrease in Holdings		No Change in Holdings		Increase in Holdings	
	Returns Direction		Returns Direction		Returns Direction	
	Negative	Positive	Negative	Positive	Negative	Positive
Fama-French Model	64%	36%	50%	50%	34%	66%
Market Model	59%	41%	48%	52%	32%	68%
Constant Model	55%	45%	47%	53%	32%	68%

	Panel C. Results for Median Returns		
	Decrease in Holdings	No Change in Holdings	Increase in Holdings
	Median Return	Median Return	Median Return
Fama-French Model	−5.90%***	−0.43%	7.20%***
Market Model	−5.20%*	1.84%	9.40%***
Constant Model	−2.51%	1.02%	9.95%***

	Panel D. Results for Average Returns		
	Decrease in Holdings	No Change in Holdings	Increase in Holdings
	Average Return	Average Return	Average Return
Fama-French Model	−3.09%	4.16%**	5.26%**
Market Model	−0.26%	4.41%**	4.92%**
Constant Model	1.03%*	4.57%**	6.87%***

This table reports results on the relation between changes in institutional investors' holdings and the returns of the companies that have been the subject of FOIA requests. Panel A displays the fraction of FOIA requests associated with a decrease, increase or no change in holdings. For each of these cases, Panel B displays the fraction of requests associated with negative or positive abnormal returns and Panel C (Panel D) displays the median (mean) abnormal returns. Abnormal returns are computed for the quarter following the FOIA request and are based on three models: the Fama-French model augmented with momentum, the Market model, and the constant model (see Section 5.1 for details). All parameters are estimated using three months of daily observations.

Table 6. Portfolio Changes and Stock Returns - Statistical Tests

	Panel A. Results for Median Returns		
	Decrease Vs No-Change	No-Change Vs Increase	Decrease Vs Increase
Fama-French Model	0.013	0.207	0.000
Market Model	0.077	0.105	0.000
Constant Model	0.438	0.032	0.002

	Panel B. Results for Mean Returns		
	Decrease Vs No-Change	No-Change Vs Increase	Decrease Vs Increase
Fama-French Model	0.032	0.747	0.018
Market Model	0.160	0.882	0.139
Constant Model	0.297	0.538	0.102

This table reports statistical tests for the difference in performance of the FOIA stocks when the institutional investors decrease, increase, or do not change their holdings in association with a FOIA request. Reported in Panel A are p-values for tests of the difference between 1) the median of the returns associated with negative changes in holdings and the one associated with no changes in holdings, 2) the median of the returns associated with positive changes in holdings and the one associated with no changes in holdings, and 3) the median of the returns associated with negative changes in holdings and the one associated with positive changes in holdings. The results are computed for the Fama-French model augmented with momentum, the Market model and the constant model (see Section 5.1 for details). Panel B repeats the exercise for the means.

Table 7. Trading Agreement with Other Institutional Investors and Analysts

Panel A. Contingency Table Results

Panel A.I. Agreement with Other Institutional Investors

		Non-FOIA Funds		
	Decrease	No Change	Increase	Total
FOIA Funds Decrease	6.9%	20.6%	4.2%	31.7%
No Change	6.9%	24.6%	6.5%	38.0%
Increase	5.3%	18.9%	6.1%	30.3%
Total	19.1%	64.1%	16.8%	100.0%

Pearson χ^2 p-value = 0.471

Panel A.II. Agreement with Analysts' Recommendation

		Analysts		
	Downgrade	No Change	Upgrade	Total
FOIA Funds Decrease	6.8%	12.6%	11.1%	30.5%
No Change	12.4%	11.5%	9.1%	33.0%
Increase	13.0%	14.0%	9.5%	36.5%
Total	32.2%	38.1%	29.7%	100%

Pearson χ^2 p-value = 0.114

Panel B. Multinomial Logit Results

Panel B.I. Other Institutional Investors

	Increase in Holdings	
	Coeff	p-value
Constant	-0.191	0.071
Non-FOIA Funds Trades	-0.208	0.238
	Decrease in Holdings	
	Coeff	p-value
Constant	-0.225	0.106
Non-FOIA Funds Trades	0.099	0.580
Log-Likelihood	-571.67	
Pseudo-R^2	0.25%	

Panel B.II. Analysts' Recommendations

	Increase in Holdings	
	Coeff	p-value
Constant	-0.252	0.019
Analysts' Recommendations	-0.140	0.311
	Decrease in Holdings	
	Coeff	p-value
Constant	-0.198	0.044
Analysts' Recommendations	0.235	0.078
Log-Likelihood	-526.53	
Pseudo-R^2	0.68%	

This table reports in Panels A.I and B.I the results on the relation between the changes in stock-holdings by the institutional investors that submit a FOIA request and the median stock-holdings changes for those that don't. In Panels A.II and B.II. we repeat the exercise and study the relation between the changes in stock-holdings by the institutional investors that submit a FOIA request and changes in median analysts' recommendations. Panel A displays contingency table results together with Pearson χ^2 tests of independence, while Panel B displays results for multinomial logit specifications. The multinomial logit regression is specified as $P_{i,j} = \frac{e^{x'_i \beta_j}}{1 + \sum_{k=1}^{2} e^{x'_i \beta_k}}$ where $P_{i,j}$ is the probability that the i-th FOIA request is associated with an increase in holdings ($j = 1$) or a decrease in holdings ($j = 2$). The probability that there is no change in the holdings represents the base case and is equal to $P_{i,0} = \frac{1}{1 + \sum_{k=1}^{2} e^{x'_i \beta_k}}$. The vectors of coefficients for holdings increases and decreases are β_1 and β_2, while the vector of independent variables is denoted by x_i and includes the intercept and, alternatively, the median change in non-FOIA institutional investors' holdings (Panel B.I.), or the median change in analysts' recommendations (Panel B.II.). Reported are the maximized Log-Likelihood function and McFadden's pseudo-R^2, computed as $1 - \frac{L_u}{L_r}$, where L_u is the unrestricted likelihood, and L_r is the restricted likelihood.

Attn: Sara Ashton
Legal Administration Specialist
Division of Freedom of Information
1560 East Jefferson Ave
Detroit, MI 48207-3179

Sara,

I'm looking for any 483s or warning letters issued to Charles River Laboratories in the last 5 years. They have toxicology facilities in the following locations:

Montreal, Quebec
Edinburgh, UK
Nevada
Sherbrooke, Quebec
Pennsylvania
Ohio

Thank you in advance, I really appreciate the assistance.

Thank you,

Jennifer Pollack
72 Cummings Point Road
Stamford, CT 06902
(203)-890-4475
jennifer.pollack@sac.com

2011-9585

DEC 2 8 2011

Commercial ✓
Nonprofit/Media
Other

CIN
CDER
SPN
PHI

Figure 1: This figure reports the FOIA request letter sent to the FDA by SAC Capital Advisors on December 23, 2011.

DEPARTMENT OF HEALTH AND HUMAN SERVICES   **Public Health Service**

Food and Drug Administration
Division of Freedom of Information
12420 Parklawn Drive, Room 1050
Rockville, MD 20857

December 28, 2011

In Response Refer to File: 2011-9585

Jennifer Pollack
SAC Capital Advisors LP
72 Cummings Point Road
Stamford, CT 06902

Dear Ms. Pollack:

This responds to your undated letter in which you requested copies of any 483s or warning letters issued to the Charles River Laboratories in the last five years. The Center for Drug Evaluation and Research (CDER) received your request on December 28, 2011. In my December 28, 2011 telephone conversation with your assistant Lauren, she indicated that she was intimately familiar with this request, and agreed to accept three previously-released Establishment Inspection Reports (EIRs) as fully responsive to this request.

Enclosed are copies of the following EIRs: 1) November 16, 2006 and March 24, 2009 (Montreal, Canada facility) and 2) August 29, 2008 (Edinburgh, UK site).

Certain material has been deleted from the records furnished to you because a preliminary review of the records indicated that the deleted information is not required to be publicly disclosed and that disclosure is not appropriate. FDA has taken this approach to facilitate the process of responding to you. If you dispute FDA's preliminary determination with respect to these records and would like FDA to reconsider a particular deletion, please let us know in writing at the address listed above within 30 days from the date of this letter. If we do not receive a response in that time period, we will consider the matter closed with respect to these records. If you do request further consideration and if the agency then formally denies your request for any or all of the previously-withheld information, you will have the right to appeal that decision. Any letter of denial will explain how to make this appeal. Responses can be mailed to the address above:

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If there are any issues with this response, please notify us in writing of your specific concern(s). Please reference the above file number.

If I may be of further assistance to you, please do not hesitate to contact me.

Eli Landy
Regulatory Counsel
Office of Regulatory Policy
Division of Information Disclosure Policy

Enclosures: Charles River Laboratories, Montreal, Canada (November 16, 2006 and March 24, 2009); Edinburgh, UK (August 29, 2008) EIRs (1 CD)

Figure 2: This figure reports the FOIA response letter sent to SAC Capital Advisors by the FDA on December 28, 2011.
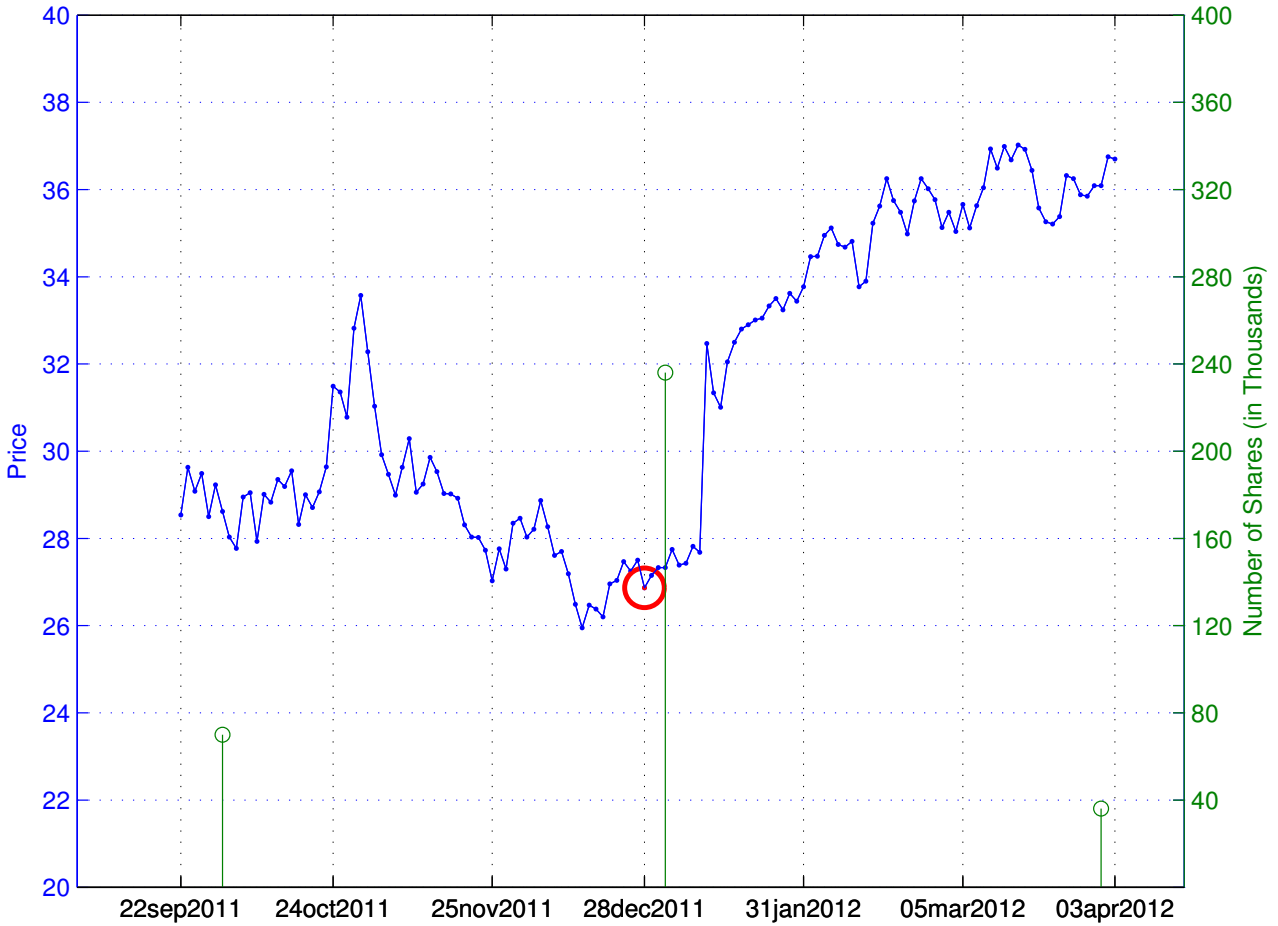
Figure 3: This figure plots the daily price of Charles River Laboratories and the holdings of the stock by SAC Capital Advisors from September 2011 to April 2012. The blue line is associated with the y-axis on the left hand side and reports the price of the stock. The green vertical lines are associated with the y-axis on the right hand side and represent the number of shares held by SAC Capital Advisors as reported in 13F filings with the SEC.
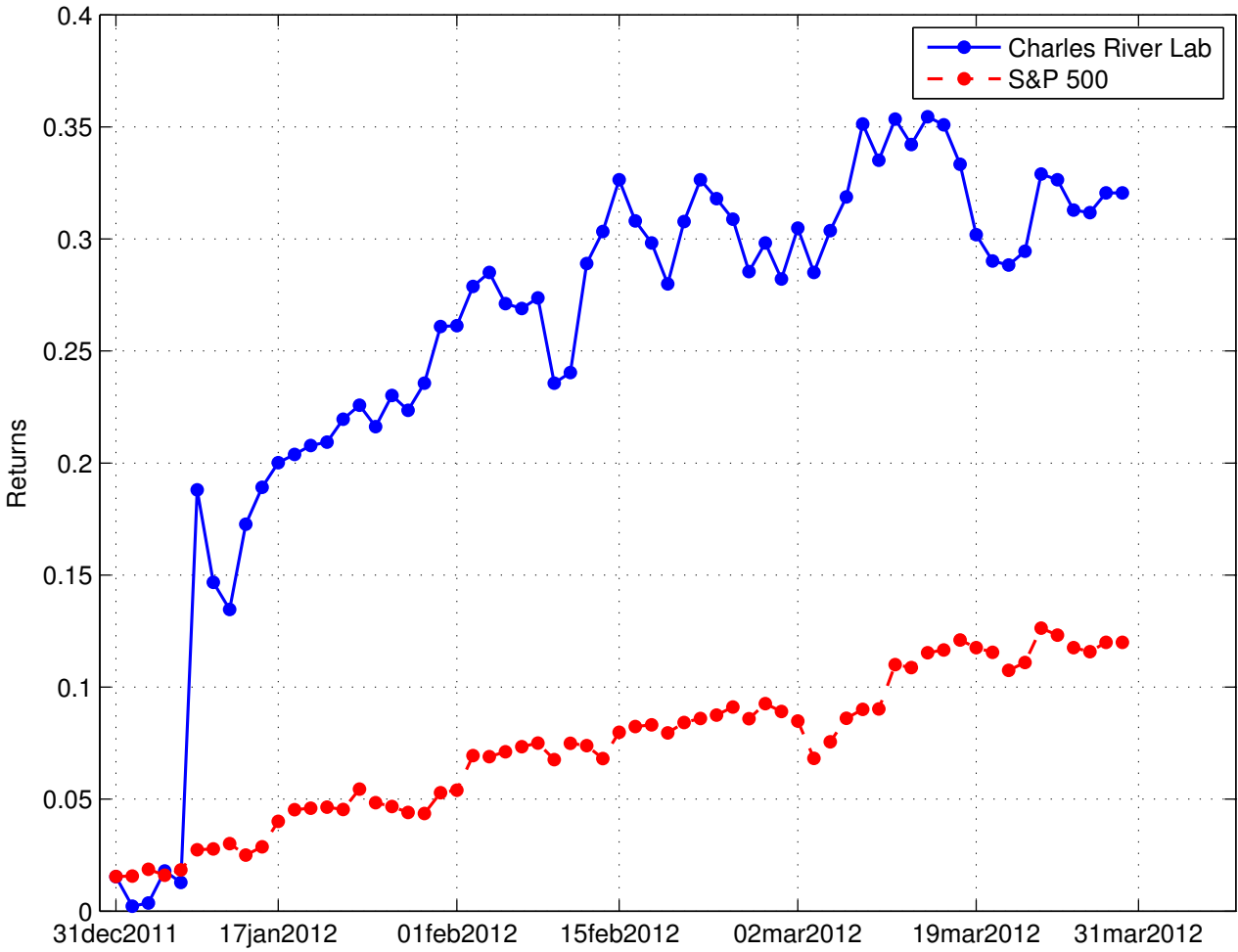
Figure 4: This figure plots the cumulative returns of Charles River Laboratories (blue line) and the S&P 500 index (red dashed line) from January 1, 2012 through March 31, 2012.

Control #	Recd Date / Due Date	Action Office	Signature/ Requester	Subject
	09/01/2006		FOI SERVICES INC	
2006-12787	08/04/2006 09/01/2006	CDER/ORP/DIDP/ ORA/CE-FO/PHI-DO/PCB/	JOHN CARREYROU WALL STREET JOURNAL	CEPHALON INC - ACTIQ RISK MGMT PROGRAM
2006-12789	08/04/2006 09/01/2006	ORA/P-FO/SAN-DO/SFCB/ ORA/P-FO/LOS-DO/LACB/	MICAHEL A SULZINSKI PHD UNIVERSITY OF SCRANTON	ALTHEA TECHNOLOGIES INC, SAN DIEGO, CA - EIRS, WARNING LTRS, CORR, ETC
2006-12790	08/04/2006 09/01/2006	ORA/P-FO/LOS-DO/LACB/	MICHAEL A SULZINSKI PHD UNIVERSITY OF SCRANTON	NATIONAL GENETICS INSTITUTE, LOS ANGELES, CA - RECS
2006-12793	08/04/2006 09/01/2006	ORA/P-FO/SAN-DO/SFCB/	BLAKE GOODNER BRIDGER CAPITAL LLC	KYPHON INC, SUNNYVALE, CA - 483S, WARNING LTRS, CORR 1/05 TO PRESENT
2006-12799	08/04/2006 09/01/2006	ORA/OE/DCP/ OC/OM/OMP/DFOI/ ORA/CE-FO/PHI-DO/PCB/	VIRGINIA SMITH KENDLE REGULATORY AFFAIRS	SANOFI PASTEUR INC, SWIFTWATER, PA - EIR, 483, CO RESP 4/18-28/06
2006-12808	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/	JOSEPH AZARY AZARY TECHNOLOGIES LLC	OLYMPUS - EVIS EXERA 160A SYS K051645
2006-12809	08/07/2006 09/05/2006	CDER/ORP/DIDP/ OC/OM/OMP/DFOI/ CDRH/OMO/DEMO/FOIB/ ORA/NE-FO/NWE-DO/NWECB/	Doe J	SYNVISC - AERS, RECALLS
2006-12815	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/ OC/OM/OMP/DMS/ OC/OM/OMP/DFOI/	CINCENT CAPPONI MEDASORB TECHNOLOGIES LLC	GAMBRO - K873643, K033262; EXTRACORPOREAL MEDICAL INC - K831029
2006-12821	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/ OC/OM/OMP/DFOI/	KRYSTAL LYERLY JARDEN CONSUMER SOLUTIONS	HOLMES PRODUCTS CORP, MILFORD, MA - AIR PURIFIER K925566
2006-12830	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/	FOI SERVICES INC	PHILIPS MEDICAL SYSTEMS - INTEGRIS V3000 ROTATIONAL ANGIO FUNTION K923813
2006-12831	08/07/2006 09/05/2006	OC/OM/OMP/DFOI/	FOI SERVICES INC	PHILIPS MEDICAL SYSTEMS - INTEGRIS V3000 FILM K921101
2006-12832	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/	FOI SERVICES INC	PHILIPS MEDICAL SYSTEMS - INTEGRIS V3000 & V4000 K910370
2006-12833	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/	FOI SERVICES INC	SAGE PRODUCTS - SUCTION ORA-SWAB BRUSH KIT K901806
2006-12834	08/07/2006 09/05/2006	CDRH/OMO/DEMO/FOIB/	FOI SERVICES INC	TOSHIBA MEDICAL SYSTEMS - ANGIOREX K954309

Figure 5: This figure reports a sample FOIA log page from the Food and Drug Administration.
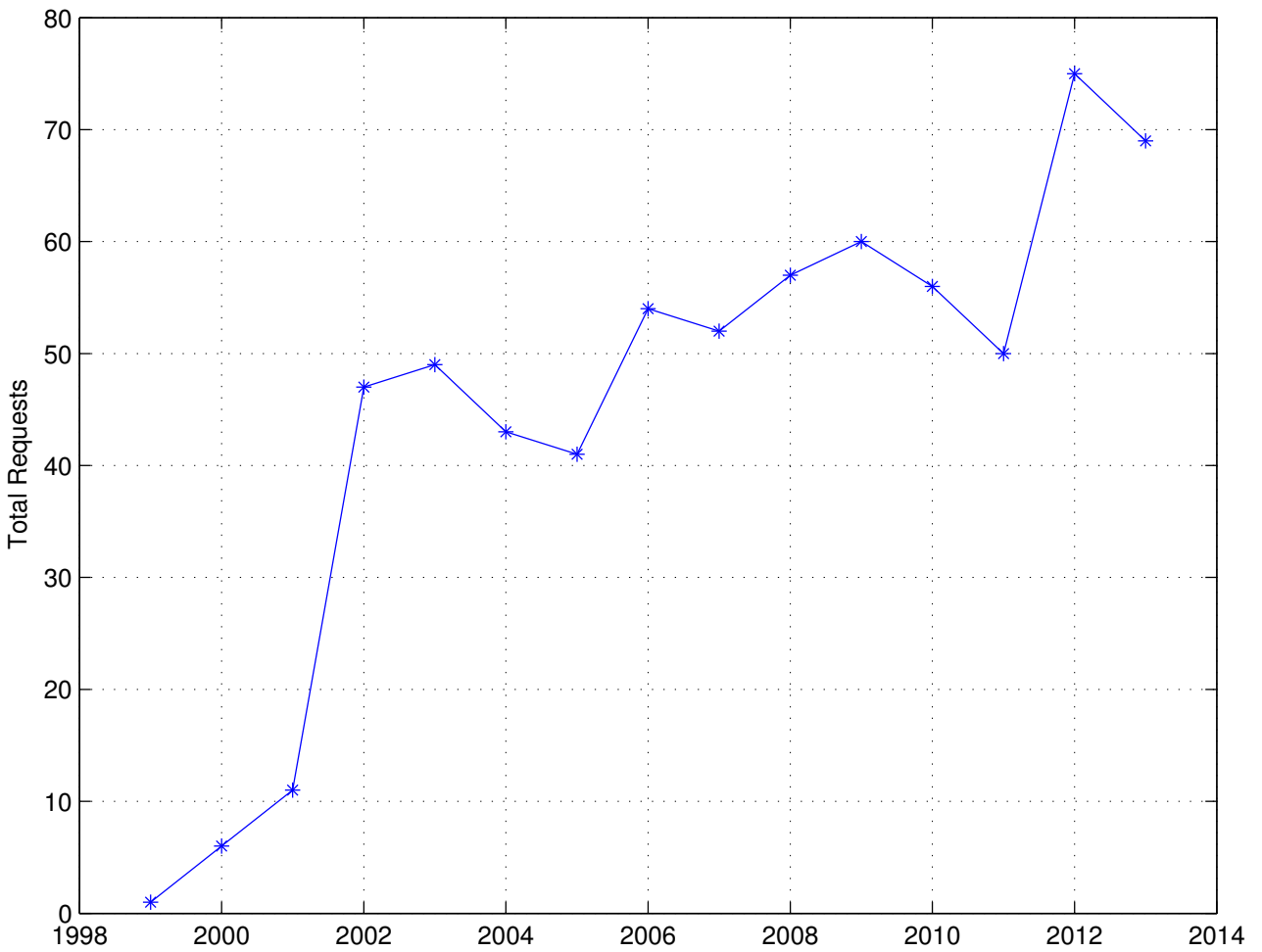
Figure 6: This figure reports the number of FDA FOIA requests contained in our database. In order to be included in our database, the requester should be an institutional investor that reports its holdings using 13F filings and the target of the FOIA request should be a company whose stock is listed on NYSE, AMEX or NASDAQ.

Figure 7: This figure plots the cumulative number of FOIA requests for the top twenty institutional investors by number of FOIA requests. The plots are for the years 1999-2013.

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Figure 8: This figure plots the cumulative number of FOIA requests for the top twenty stocks by number of FOIA requests. The plots are for the years 1999-2013.
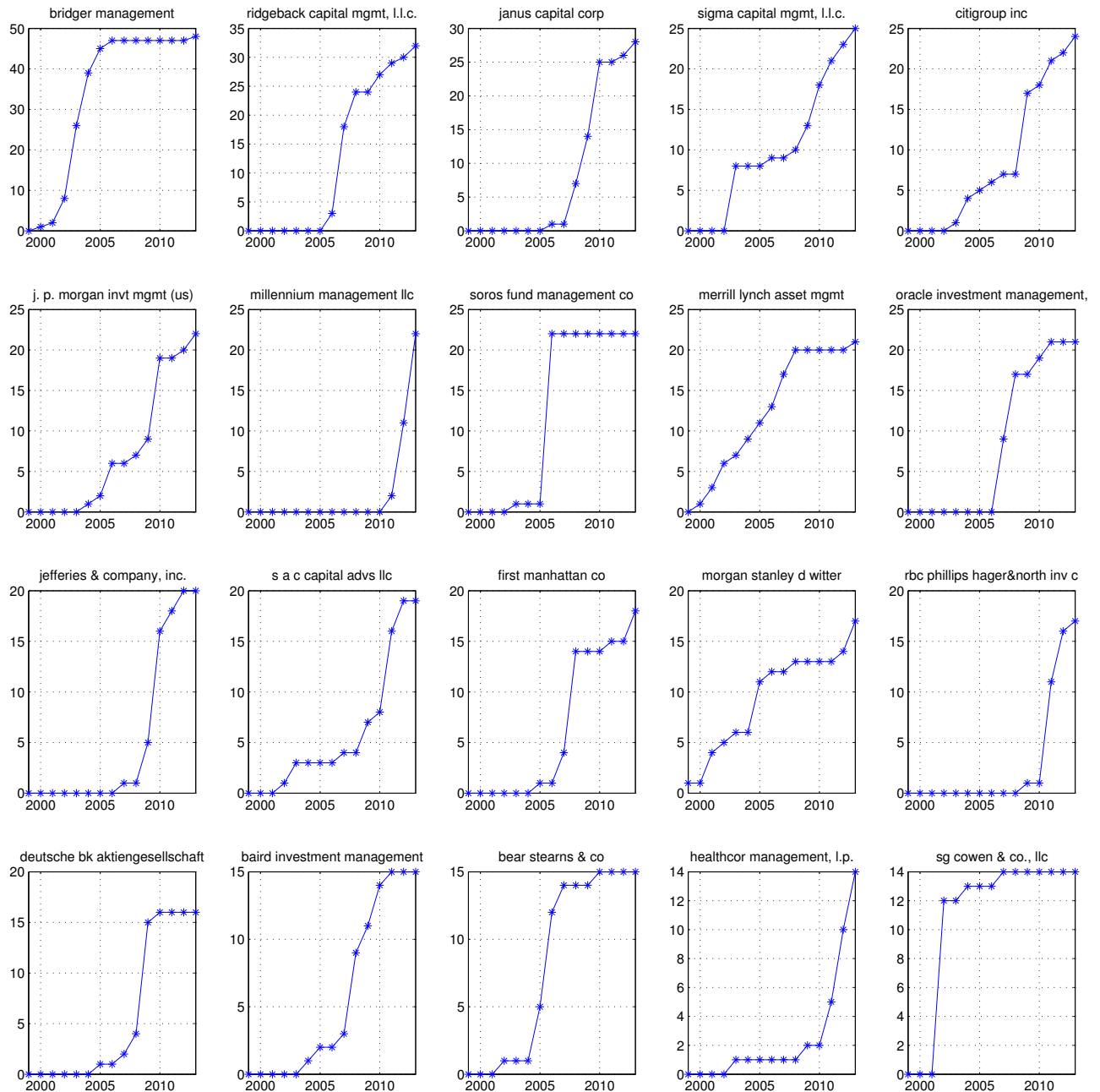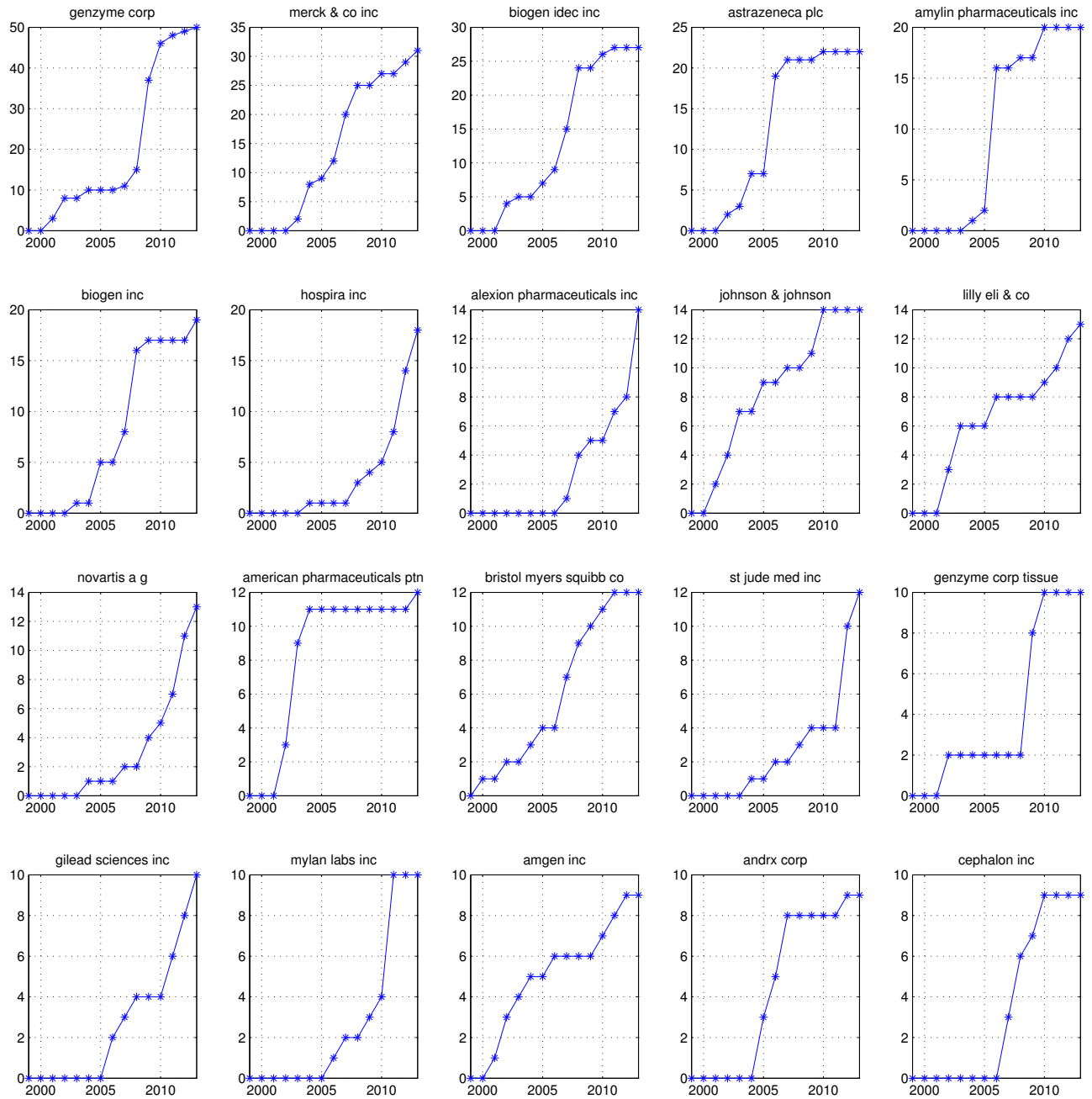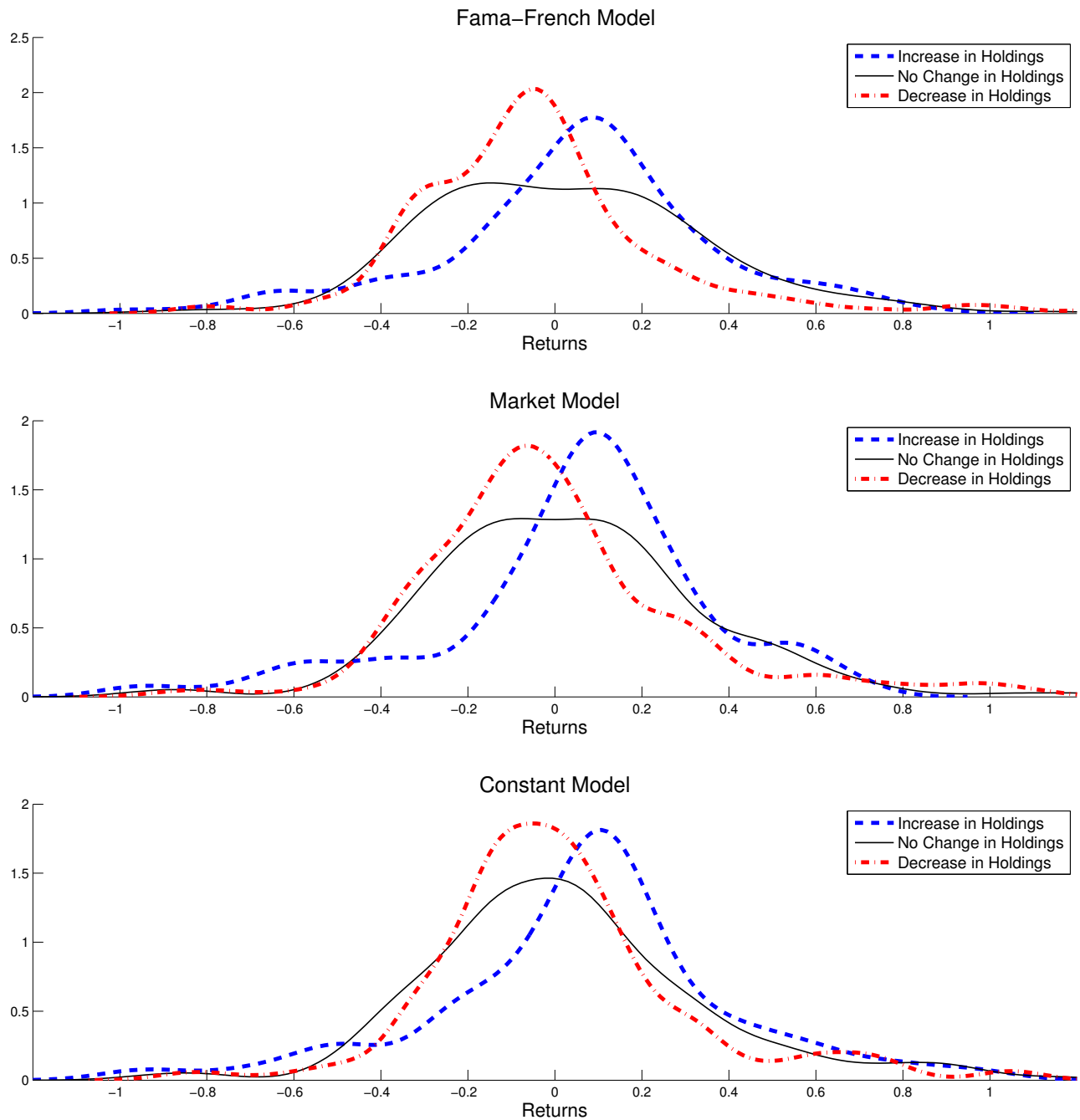
Figure 9: This figure plots quarterly abnormal cumulative returns densities for the stocks that have been the subject of FOIA requests in the previous quarter. The results are computed separately for those stocks whose holdings have been *increased* by the institutional investors that initiated the FOIA request (blue dashed line), those stocks whose holdings have been *decreased* by the institutional investors that initiated the FOIA request (red dashed line), and those stocks whose holdings were *unchanged* by the institutional investors that initiated the FOIA request (black solid line). In the top panel, the abnormal returns are computed using a Fama-French model augmented with momentum. The middle and bottom panels repeat the exercise using the Market and the Constant model, respectively (see Section 5.1 for details). All return models are estimated using daily observations over the previous quarter.
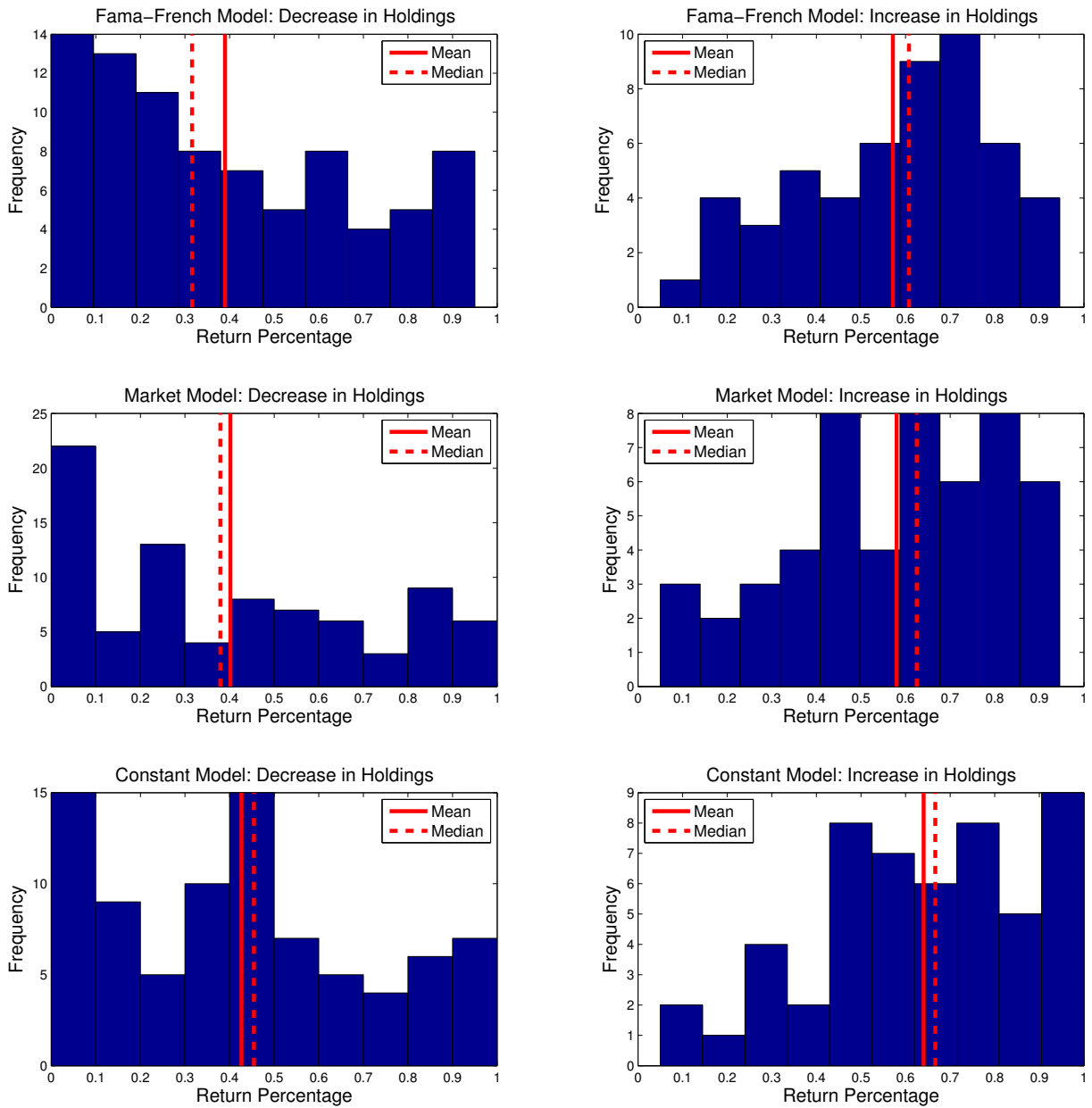
Figure 10: This figure compares investors' performance in FOIA stocks when they do and do not perform a FOIA request. For every manager-stock pairing, we compute the returns associated with changes in holdings in those quarters when they submit a FOIA request. We compare them to the performance for the same stocks, but for the quarters when they do not submit a FOIA request. For both FOIA and non-FOIA trades, we separate the cases where the stock holdings have increased from the cases where they have decreased and we compute the empirical percentile of the FOIA return as the percentage of non-FOIA returns smaller than the FOIA return. Finally, we report percentiles' distributions across both stocks and institutional investors. The top, middle and bottom panels report results for the Fama-French model augmented with momentum, the Market model and the constant model. The results for negative changes in holdings are reported in the left panels, while the ones for positive changes in holdings are reported in the right panels. The solid and dashed vertical lines in each panel report the mean and median of the distributions.
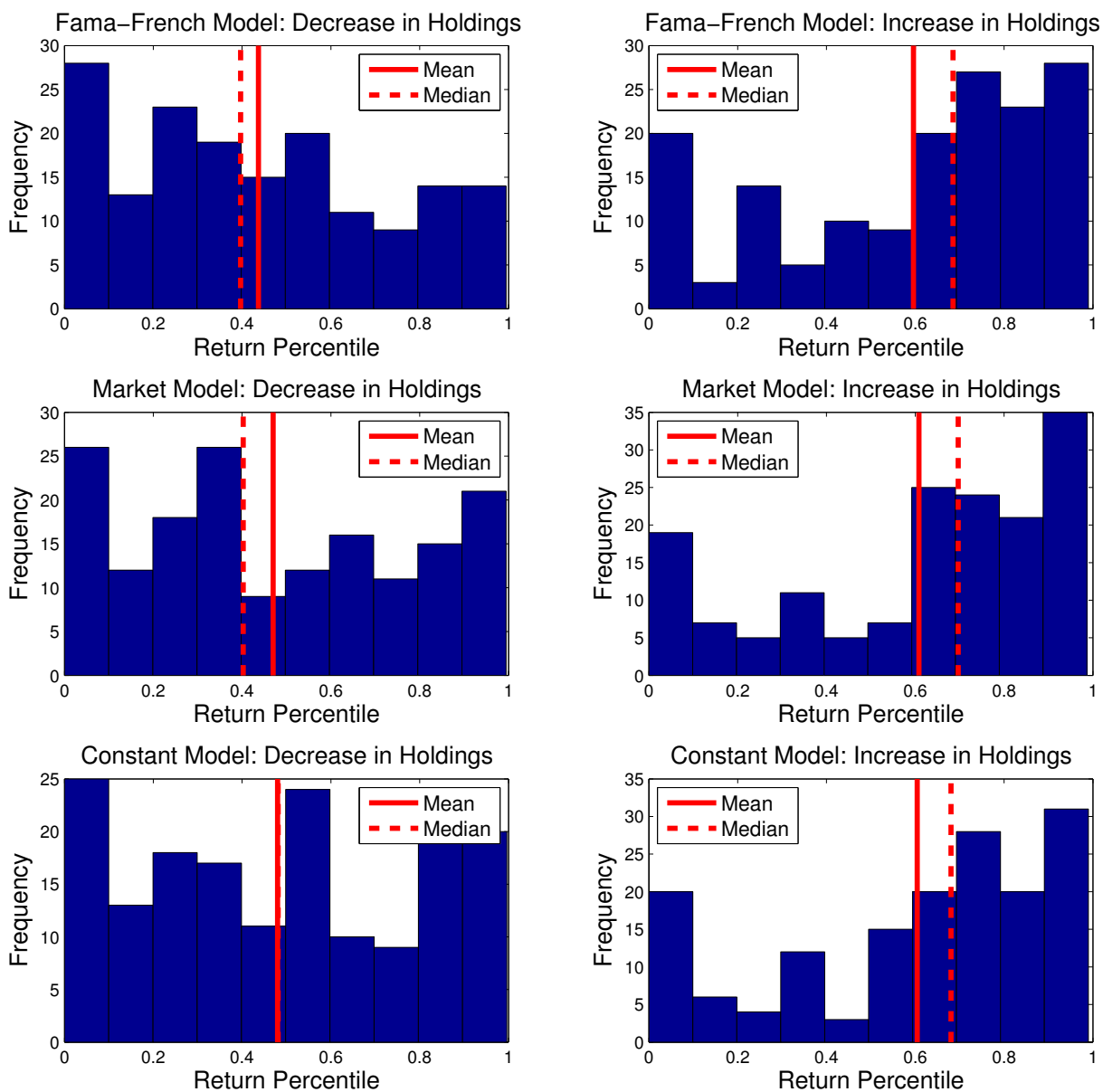
Figure 11: This figure compares investors' performance in FOIA stocks and in non-FOIA stocks at the time of a FOIA request. For every manager-stock pairing, we compute the returns associated with changes in holdings across all stocks held at the time of a FOIA request. For both FOIA and non-FOIA trades, we separate the cases where the stock holdings have increased from the cases where they have decreased and we compute the empirical percentile of the FOIA return as the percentage of non-FOIA returns smaller than the FOIA return. Finally, we plot the percentiles' distributions across both stocks and institutional investors. The top, middle and bottom panels report results for the Fama-French model augmented with momentum, the Market model and the constant model. The results for negative changes in holdings are reported in the left panels, while the ones for positive changes in holdings are reported in the right panels. The solid and dashed vertical lines in each panel report the mean and median of the distributions.

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