

Do Institutional Investors Have an Ace up Their Sleeves? --Evidence from Confidential Filings of Portfolio Holdings¹

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This version: August 31, 2009

[PRELIMINARY DRAFT]

ABSTRACT

This paper studies the holdings by institutional investors that are filed with a significant delay through amendments to Form 13F and that are not included in the standard 13F holdings databases. We examine these *confidential holdings* and find that asset management firms (hedge funds and investment companies/advisors) are more likely to seek confidentiality compared to banks and insurance companies. The confidential holdings are disproportionately associated with information-sensitive events such as mergers and acquisitions, and include stocks subjected to greater information asymmetry. Moreover, the confidential holdings of asset management firms exhibit superior risk-adjusted performance over the horizon of two to six months, suggesting that these institutions may possess short-lived information. Our study highlights the tension between the regulators, public, and investment managers regarding the ownership disclosure, and provides new evidence in estimating the level as well as the cross-sectional differences in the performance of different types of institutional investors.

JEL Classification: G10, G19

¹ The paper has benefited from comments and suggestions from Nicole Boyson, Mark Chen, Conrad Ciccotello, Gerald Gay, Lixin Huang, Jayant Kale, Omesh Kini, Chip Ryan, and seminar participants at Columbia University, Georgia State University, and University of Buffalo. The authors thank George Connaughton, Bharat Kesavan, Vyacheslav Fos, and Linlin Ma for excellent research assistance.

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ABSTRACT

This paper studies the holdings by institutional investors that are filed with a significant delay through amendments to Form 13F and that are not included in the standard 13F holdings databases. We examine these *confidential holdings* and find that asset management firms (hedge funds and investment companies/advisors) are more likely to seek confidentiality compared to banks and insurance companies. The confidential holdings are disproportionately associated with information-sensitive events such as mergers and acquisitions, and include stocks subject to greater information asymmetry. Moreover, the confidential holdings of asset management firms exhibit superior risk-adjusted performance over the horizon of two to six months, suggesting that these institutions may possess short-lived information. Our study highlights the tension between the regulators, public, and investment managers regarding the ownership disclosure, and provides new evidence in estimating the level as well as the cross-sectional differences in the performance of different types of institutional investors.

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Mandatory disclosure of ownership in public companies by investors is an essential part of the securities market regulation. At the core of this regulation is the Section 13(f) of the 1934 Act that requires institutional investment managers to disclose their quarterly holdings.⁶ The quarterly reports, filed to the Securities and Exchange Commission (SEC) on the Form 13F, disseminate to the public information about holdings and investment activities of institutional investors. An exception to the rule, however, provides confidential treatment of certain holdings through *amendments* to the *original* Form 13F. With adequate written factual support, this provision allows the institutions to delay the disclosure of some of their holdings, usually up to one year. Throughout the paper, we refer to these amendments as “confidential filings,” and the positions included in such filings as “confidential holdings.”

A large literature has evolved based on the reported portfolio holdings of institutional investors to evaluate these investors’ return performance and managerial ability, or to extract information from the reported holdings to form investment strategies (see survey by Wermers (2006)). However, the prior papers use only the data on *original* 13F filings, usually from the Thomson Reuters Ownership Data (formerly the CDA/Spectrum database), and therefore ignore the confidential holdings because they are not included in the standard commercial databases.

Incentives to seek confidentiality most likely arise from private information. It is in the best interest of investment managers not to disclose their informed positions before they have reaped the full benefits of their superior information. Such incentives are often in conflict with the regulatory rules. For example, Perry Corp, a well-known hedge fund, attempted to keep secret its building of position in Mylan Inc. in 2004 when the company was contemplating a merger with King Pharmaceuticals Inc. The deal ultimately fell through; nevertheless, Perry was under investigation by the SEC on the allegation of

⁶ Section I.A. contains a more detailed description of the institutional background regarding the ownership disclosure.

improperly withholding details about a large investment in an effort to profit.⁷ Though the two parties settled in July 2009, the case highlights continuing tension between the desire of some investors to withhold information that could reveal their investment strategy, and the demand of the public and regulators for transparency.

As a matter of fact, several hedge funds and successful investors including Warren Buffett have appealed to the SEC for an exemption from revealing their positions in the 13F forms but have been unsuccessful in convincing the SEC. Philip Goldstein, an activist hedge fund manager at Bulldog Investors likens his stock holdings to “trade secrets” as much as the protected formula used to make Coke, and contends that complying with the 13F rule “constitute[s] a ‘taking’ of [the fund’s] property without just compensation in violation of the Fifth Amendment to the Constitution.”⁸ In the wake of the “quant meltdown” in August 2007, quant hedge funds blamed the ownership disclosure for inviting “copycats” into an increasingly correlated and crowded space of quant strategies, which contributed to the “death spiral” in the summer of 2007 when many funds employing similar strategies attempted to cut their risks simultaneously in response to their losses (Khandani and Lo (2007)). Most vocal among them was D. E. Shaw & Company who demanded confidentiality for its whole portfolio in order to guard its proprietary models, but the request was denied by the SEC.

Though confidential filing is meant to be the exception rather than the rule, quite some institutional investors seem to have taken advantage of it for the benefit of delayed disclosure. Using a comprehensive collection of all original and amendments to 13F filings by all institutions during the period of 1999-2007, we find that 131 institutions (4.5% of all 13F filing institutions) have resorted to confidential filing at least once, and the average (median) value of the confidential holdings amounts to 25.1% (12.0%) of the total value of securities filed in both the original and confidential 13F holdings. It is worth noting that this sample includes all cases “seeking confidentiality”, including those approved and

⁷ For the SEC litigation release of this case, please see: <http://www.sec.gov/litigation/admin/2009/34-60351.pdf>. Perry was accused of violating the rule regarding Schedule 13D which requires prompt and proper disclosure of positions above 5%.

⁸ For a more detailed discussion, see Philip Goldstein’s interview in September 12, 2006 issue of *Business Week*: http://www.businessweek.com/print/investor/content/sep2006/pi20060913_356291.htm.

rejected by the SEC. It usually takes several months for the SEC to review individual applications and make the decision.⁹ Upon approval (or rejection), the filing institution is required to file the amendment right after the expiration of the period for which confidential treatment is granted (or within six business days of the date of denial). Without explicit identification in the amendment, we are not able to separate the approved cases from the denied ones, except that the former tend to enjoy longer delay in disclosure. A performance analysis sorted by the delay time can shed some light on the differential effects of confidential treatment between the approved and rejected cases.

Analyzing the complete holdings uncovers several interesting results that are consistent with superior information embedded in the confidential filings. First, we find that hedge funds and investment companies/advisors are more likely to seek confidentiality compared to banks and insurance companies, suggesting that institutions with an asset-management focus are more involved in collecting private information and have greater incentive to withhold such information from the public. Second, confidential filings are more likely to include stocks associated with information-sensitive events such as mergers and acquisitions, and to include stocks subject to greater information asymmetry as measured by market capitalization, growth potential, trading liquidity, and analyst following. Finally, confidential holdings of hedge funds and investment companies/advisors exhibit higher abnormal performance than both their own original filings and the confidential holdings of banks and insurance companies. For measuring abnormal performance, we compute the characteristic-adjusted return of each stock in original and confidential holdings each quarter, using the benchmarks developed by Daniel, Grinblatt, Titman, and Wermers (1997), and modified by Wermers (2003).

Our study provides new evidence on the skill of asset-management firms and their ability to benefit from their private information through confidential holdings. It has implications for researchers and regulators concerned with the transparency of financial institutions (especially the lightly-regulated hedge funds and private funds) and the role of mandatory disclosure of their investments. A thorough study based on a complete collection of institutional investors' quarterly holdings could certainly help

⁹ For example, see <http://www.sec.gov/rules/other/34-52134.pdf> for the rejection of the request from a hedge fund, Two Sigma.

settle the controversy regarding the value and effect of the “non-transparent” holdings and identify key factors that cause the cross sectional variation in the confidential filing activities.

Our paper is most closely related to the literature that evaluates the performance and information content of holdings by institutional investors. For example, Grinblatt and Titman (1989, 1993), Grinblatt, Titman, and Wermers (1995), Daniel, Grinblatt, Titman, and Wermers (1997), Chen, Jegadeesh, and Wermers (2000), Wermers (2000, 2003), Frank, Poterba, Shackelford, and Shoven (2004), Kacperczyk, Sialm, and Zheng (2005, 2008), Wermers, Yao, and Zhao (2007), and Huang and Kale (2009), analyze whether mutual funds outperform their benchmarks using the holdings data. Griffin and Xu (2009) and Aragon and Martin (2009)¹⁰ conduct a similar analysis with another class of active managers—hedge funds. By incorporating the confidential holdings that were excluded by the previous research, our study provides a more complete picture of the ability and performance of a wide range of institutions.

Our paper also contributes to a strand of literature that studies the effects of portfolio disclosure on the investment decisions of mutual funds (Musto (1997, 1999)), theoretical implications of portfolio disclosure for portfolio selection and performance evaluation of mutual funds (Kempf and Kreuzberg, 2004), frequent portfolio disclosure leading to free riding and front running by other market participants (Wermers (2001), and Frank, Poterba, Shackelford, and Shoven (2004)), and determinants of portfolio disclosure and its effect on performance and flows (Ge and Zheng (2006)). For example, the findings in our study suggest that the investment managers seek confidential treatment for stocks where they are likely to have private information, and thereby can attenuate some of the concerns like free riding and front running that have been discussed in the extant literature on portfolio disclosure.

The remainder of the paper is organized as follows. Section I provides background information regarding the SEC ownership disclosure rules and outlines the hypotheses. Section II describes the data and construction of variables. Section III reports empirical results from testing the hypothesis on the determinants of confidential filings while Section IV presents the results of abnormal returns of

¹⁰ Aragon and Martin (2009) is among the very few papers that use the original 13F filings directly, instead of the filings compiled by Thomson Reuters. They examine a random sample of 300 hedge funds from the SEC EDGAR database, and do not account for confidential filings in the 13F amendments filed separately.

confidential holdings. Finally, Section V concludes.

I. Institutional Background and Hypothesis Development

A. Institutional Background of Confidential Holdings

The current ownership disclosure rules mandated by the SEC consists of five overlapping parts: Schedule 13D for large (above 5%) active shareholders, Schedule 13G for large passive shareholders; Form 13F for general institutional holdings; Section 16 regarding ownership by insiders; and Form N-CSR for semi-annual disclosure of holdings required for mutual funds.¹¹

Among the five regimes, the Form 13F requirement covers by far the largest number of institutional investors: all institutions that have investment discretion over \$100 million or more in Section 13(f) securities (mostly publicly traded equity; but also include convertible bonds, and some options) are required to disclose their quarter-end holdings in these securities. We call the date when the Form 13F is filed with the SEC the “filing date,” and the quarter-end date on which the portfolio is being disclosed the “quarter-end portfolio date.” According to the SEC rule, the maximum lag between the two dates is 45 days. As an exception to the rule, the SEC allows for the confidential treatment of certain portfolio holdings of institutions for which they can file 13F amendments. The provision allows the institutions to delay the disclosure of their holdings up to one year from the date required for the original 13F form. This one-year period can be extended further if an instruction with additional factual support is filed 14 days in advance of the expiration date.

Gaining confidential treatment is no trivial task and is not guaranteed.¹² The applying institution must provide a sufficient factual basis and a statement on the grounds of the objection to public disclosure, including a detailed description of the manager’s investment strategy, e.g., risk arbitrage that warrants confidential treatment, along with supporting analysis. Furthermore, the evidence for confidential

¹¹ Since January 22, 2003, the SEC requires mutual funds and other registered management investment companies to file shareholder reports on new Form N-CSR, which replaced the previous N-SAR and N-30D forms. For more details, see <http://www.sec.gov/info/edgar/certinvco.htm>.

¹² The SEC official guideline for 13F amendments is available at: <http://www.sec.gov/about/forms/form13f.pdf>. See Section “Instructions for Confidential Treatment Requests.”

treatment will not be applied to an entire portfolio appearing on a 13F, but rather on a position-by-position basis. Finally, such applications are subject to SEC approval. If denied, the institution is obligated to file all the confidential positions immediately (within six business days from the date of denial).

In 1998, the SEC tightened the rules and restricted the conditions for accepting the 13F amendments.¹³ The triggering event was the confusion over the 13F reporting of investor Warren Buffett which caused a significant decline in the share price of Wells Fargo & Co. The 13F form did not show Berkshire Hathaway's well-known stake in the bank, only because it was reported in a confidential filing.¹⁴ Our sample period (1999-2007) falls into the new regime when there are significant costs associated with filing 13F amendments as the applying institutions need to convince the SEC that revelation of these holdings can hurt their competitive position.

The extreme case of D. E. Shaw illustrates the tension arising from such a process. On August 14, 2007, D.E. Shaw & Company, one of the largest quant-oriented hedge fund managers, filed an entirely blank Form 13F for its second-quarter portfolio. That is, the fund manager was seeking from the SEC a confidential treatment of its entire portfolio, based on the argument that "copycat investors" were mimicking its strategies. The SEC denied the request on October 19, forcing the firm to file an amended June 30 Form 13F on October 29.¹⁵ That amended filing covered 3,991 positions valued at \$79 billion. Other frequent users of confidential filings include hedge funds (e.g. Dolphin Asset, Stark Investments, and Magnetar Financial) and investment bank trading desks (e.g. Lehman Brothers, Goldman Sachs & Co, and UBS).

If investment managers choose to file 13F amendments for securities about which they think that they have superior private information, these holdings are likely to be more informative than the

¹³ See <http://www.sec.gov/divisions/investment/guidance/13fpt2.htm> for the letter issued by the SEC in June 1998 where they explain the specific requirements and conditions for granting confidentiality.

¹⁴ For a full story, please see "Large Investors Face Stiff Rules on SEC Filings," by Paul Beckett, *The Wall Street Journal*, June 19, 1998.

¹⁵ Similar but less extreme requests from D. E. Shaw were rejected by the SEC before, see "SEC: DE Shaw Disclosure Request Part of Regular Process," by Marietta Cauchi, *Dow Jones Newswires*, January 2005. There are several other cases of rejections of confidential treatment requests including those by Warren Buffett: <http://www.sec.gov/rules/other/34-50206.htm>, <http://www.sec.gov/rules/other/34-43142.htm>, and <http://www.sec.gov/litigation/admin/34-43909.htm>.

regularly-disclosed holdings. Despite their potential importance, confidential holdings are usually not included in the conventional databases of institutional quarterly holdings.¹⁶ For example, the manual for Thomson Reuters Ownership Data (formerly the CDA/Spectrum database), available through WRDS, provides the following caveat about its S12 (for mutual funds) and S34 (for institutions) data: “The holdings in the S12 and S34 sets are rarely the entire equity holdings of the manager or fund. There are minimum size requirements and confidentiality qualifications.”

An example from the top 20 confidential filers illustrates the omission by the Thomson Reuters database. The chosen institution is Stark Onshore master fund (manager number 10375 in Thomson Reuters). In Table I, we list all the institution’s confidential holdings, and cross check with its holdings reported in Thomson Reuters. We observe that, except for one stock (Rouse Co., CUSIP = 77927310), all the other 55 confidential holdings in the amendments are not included in the latter.

[Insert Table I here.]

Therefore, arguably the most interesting facet of portfolio disclosure has been this far ignored in the extant literature. Our study fills this gap in the literature by examining the motives for seeking confidentiality — more specifically to determine if it is information-driven, and then estimate investment managers’ ability and their portfolio performance, as well as the cross-sectional variation in the performance of different types of institutional investors.

B. Hypothesis Development

Among all institutions, asset-management companies are perhaps most likely to engage in proprietary trading strategies where private information is essential in delivering superior returns. Of course, the degree to which they collect and process information and their ability to benefit from it will vary. In contrast, the primary business of banks and insurance companies is different from asset management firms. Hence, they are less likely to be involved in gathering private information and stock picking. This suggests that compared to banks and insurance companies, asset-management firms are

¹⁶ The other potential exclusion by these databases concerns non-equity holdings, such as convertible bonds and options, see Aragon and Martin (2009) for a detailed description of this issue.

more likely to strategically delay disclosing their holdings and to seek confidential treatment.

Thus, our first hypothesis is as follows:

HYPOTHESIS 1: *Institutions that apply more active investment strategies are more likely to have confidential holdings.*

Our second hypothesis is about the type of stocks that are included in the confidential filings. Since the primary motivation of seeking confidentiality is to preserve the value of private information, confidential filings should reflect such information. An explicit case identified by the SEC where positions are allowed confidentiality is related to open risk arbitrage positions. Hence, an important determinant of a stock being included in the confidential filings should be whether the firm is involved in M&A speculation or similarly information-sensitive events. If M&A speculations are positively correlated with ex post M&A announcements, then stocks of firms that are targets of M&A transactions should appear disproportionately among the confidential holdings.

A more general determinant for a stock to be incorporated in the confidential portfolios of institutions is the degree of information asymmetry. Greater information asymmetry provides more opportunities for profitable private information acquisition activities.¹⁷ This incentivizes the institutions to conceal their information on such stocks through confidential filings. We use several proxies for firm-specific drivers of information asymmetry. These include firm size, book-to-market, sales growth, liquidity, and analyst following.

This provides us with the following empirical hypothesis:

HYPOTHESIS 2: *Stocks associated with information sensitive events (e.g., mergers and acquisitions) and those with higher information asymmetry are more likely to be included in the confidential filings.*

Finally, if the private information embedded in the confidential filings is in fact superior, and if asset management companies are more strategic in taking advantage of the confidential treatment, then one would expect that the confidential holdings, especially those of the asset management companies, exhibit positive abnormal performance.

¹⁷ In fact, some investors having private information can lead to greater information asymmetry. Since we do not examine the determinants of information asymmetry, we are not concerned about the direction of causality here.

This provides us with our last hypothesis:

HYPOTHESIS 3: *Abnormal performance of the confidential filings for each type of institution should be greater than that of its corresponding original filings. Moreover, the abnormal performance of the confidential filings of asset management companies should be higher than that of banks and insurance companies.*

II. Data Description and Sample Overview

A. Sample of Original and Amendments to 13F Filings

A key data component to this study is the original and amendments to 13F filings by all institutions. As we mentioned in the previous section, the standard databases do not provide a complete collection of these filings. Instead, we retrieve directly both the original and amendment 13F filings dated between March 1999 and June 2007 from the SEC's website (EDGAR). We start in 1999 so that our full sample period falls into a uniform policy regime after the SEC tightened up the rules for accepting confidential filings in 1998 (see Section I for more information); we end the sample of filings in June 2007 to allow a one-year period in ex post performance evaluation.

We retrieve all original and amendment 13F filings from EDGAR during the sample period. Due to the large variation in reporting style and format, we are able to process the complete holdings information for 61.3% of all the 13F filings. The resulting list of filing institutions amount to 2,847, or 73.9% of the institutions that report their original 13F filings to Thomson Reuters over the sample period,¹⁸ plus 143 more institutions that do not appear in the Thomson database at all. Our study focuses on equity holdings for which risk-adjusted performance measures are well-defined.

Amendments to 13F filings contain two types of information: restatements of a previously filed position or disclosure of new holdings that were excluded from the original filings. We define a confidential holding as one that was excluded from the original filing or the difference between the

¹⁸ We restrict our sample of original filings to the processed 13F filings directly retrieved from the SEC, rather than all holdings reported to Thomson Reuters. The idea is to maintain symmetry and comparability between original and confidential filings as the latter mostly do not make their way to Thomson Reuters.

restated position and the originally filed position if the difference is at least 100% of the latter. Our results are qualitatively similar if we exclude the second component. Based on this criterion, our preliminary sample consists of 947 confidential filings and 38,209 original 13F filings. Figure 1 plots the time series of both types of filings at the quarterly frequency. While the number of original filings increased steadily over our sample period, the time series for the number of confidential filings was choppier but stays roughly in proportion to the first series.

[Insert Figure 1 here.]

Table II summarizes the cross-sectional distribution of both types of filings. Panel A reports the delay in days between filings and quarter-end portfolio dates. Over 85% of original filings are filed within 45 days of the end of quarter, conforming to the requirement by SEC.¹⁹ On the other hand, more than 97% of confidential filings are filed more than 45 days from the quarter-end portfolio date, justifying resorting to the amendments for delayed disclosure.

[Insert Table II here.]

In our analysis, we exclude confidential holdings filed within 45 days of delay, as motives to conceal positions in these filings cannot be justified. We also filter out both types of filings with extremely long delays from their quarter-end portfolio dates: more than a 180-day delay for the original filings and more than a 1460-day (four years) delay for the confidential filings. We suspect that these observations are results of data recording errors or irregular circumstances. These three filters combined remove few than 1.5% of original filings and fewer than 5% of confidential filings (see Table II Panel A). Our results are not sensitive to the particular numerical choices employed in these filters.

Our final sample consists of 37,199 original filings by 2,917 institutions, and 780 confidential filings by 131 institutions. Panel B of Table II summarizes the number of filings, number of institutions, the dollar value, and the number of stocks in this final sample. The dollar value of the stock positions

¹⁹ While short delays of the original filings beyond the 45-day limit might be due to logistic frictions, the only plausible explanation for a significant delay—barring a data coding error—is that it is a made-up filing after an application for confidential treatment is denied, in which case the disclosure (still considered the original filing) becomes due immediately after denial. If we use 60 days as a cut-off, we have an upper-bound estimate for the number of rejected applications for confidential treatment, which amounts to about 3.6% of all original filings.

included in the confidential filings is significant: the average (median) value of securities in a confidential filing is 25.1% (12.0%) of value of the combined portfolio of the confidential filing with the original filing, i.e., the complete portfolio of the institution. That is, conditional on an institution files both an original and an amended 13F for its holdings of a given quarter, the median institution tends to “hide” one-tenth of its portfolio from the regular disclosure.

B. Classification of Institution Types

It is worth noting that the classification of institution types employed in Table II (and our later analyses) is somewhat different from that used in the Thomson Reuters database. Thomson Reuters divides all institutions into five types: banks (type code = 1, narrowly defined as financial institutions that accept and manage deposits and make loans, or loosely “commercial banks”), insurance companies (type code = 2), investment companies (type code = 3, mostly mutual fund management companies), independent investment advisors (type code = 4, including asset management companies, investment banks, brokers, private wealth management companies, etc.), and others (type code = 5, including pension funds, endowment funds, most of the hedge funds, financial arms of corporations, and others). The type code 5 since 1998 is known to be problematic in that the category could include many misclassified institutions that should be assigned with the other type codes (mostly, type code 4).²⁰ Therefore, we reassign an institution which has type code 5 after 1997 to an earlier code, if available and if different from 5.

In order to single out hedge funds and investment management companies, we divide all institutions into: hedge funds (the classification of which will follow), banks and insurance companies (a combination of type 1 and type 2 institutions by the Thomson classification), investment companies and investment advisors (a combination of type 3 and type 4 institutions by the Thomson classification, excluding hedge funds), and others (the type 5 institutions by the Thomson classification, with corrections and excluding hedge funds).

²⁰ The data manual of the Thomson Reuters database acknowledges this issue with the classification.

Hedge funds are manually classified by identifying all 13F-filing institutions that have major hedge fund management business.²¹ An institution is classified as a “hedge fund company” if it satisfies one of the following: (i) It matches the name of one or multiple funds from one of the five hedge fund databases: CISDM, Eureka, HFR, MSCI, and TASS.²² (ii) The company’s own website claims itself as a hedge fund management company or lists hedge fund management as a major line of business. (iii) It is listed by industry publications (Hedge Fund Group (HFG), Barons, Alpha Magazine, and Institutional Investors) as one of the top hedge funds (or hedge fund groups).²³ (iv) The company was featured by a news article in Factiva as a hedge fund manager. (v) If a 13F filer name is that of an individual, it is classified as a hedge fund if the person is the founder, partner, chairman, or other leading personnel of a hedge fund company.²⁴

The above procedure results in 948 unique hedge funds of which 76 are engaged in confidential filing, making hedge funds the leading group of confidential filers in our sample. Due to our top-down approach, our list of 13F filing hedge funds companies is considerably longer than used in prior literature.²⁵

C. Performance Measure

Our default measure of risk-adjusted or abnormal performance is the Daniel, Grinblatt, Titman, and Wermers (1997) holdings-based measure (henceforth the “DGTW measure” or “DGTW benchmark-adjusted return”). Given that institutions can only hide a limited number of stocks in confidential

²¹ The full list of 13F-filing hedge funds is obtained from Agarwal, Fos, and Jiang (2009) which provides a detailed description. We thank the authors for sharing the data.

²² The 13F filings are aggregated at the institution level, comparable to the level of management companies or sponsors of hedge funds. Hence, a match from hedge fund databases to 13F filings is usually a multiple-to-one match.

²³ These lists could contain full-service financial firms that have large in-house hedge funds, the notable example being Goldman Sachs Asset Management which runs the \$10 billion (valued in early 2007) Global Alpha fund. Our results are not sensitive if we exclude such institutions from the hedge fund category.

²⁴ Notable examples in this category include Carl Icahn (founder and chairman of the hedge funds: Icahn Capital, L.P. and Icahn Partners) and George Soros (founder and chairman of Soros Fund Management, a hedge fund management company).

²⁵ Relying on a one-sided match from published hedge fund lists to the 13F database, Brunnermeier and Nagel (2004) focus on the holdings of 53 hedge fund companies, and Griffin and Xu’s (2009) sample contain 306 such firms.

holdings and the applications for confidential treatment need to be made at the individual stock level, the private information is more likely to be stock-specific rather than about specific sectors or the overall market. Therefore, we use the Characteristic Selectivity (CS) measure in Daniel, Grinblatt, Titman, and Wermers (1997), which captures the stock-picking ability of managers. Following their methodology, we form 125 portfolios, in June of each year, using all the common stocks listed on NYSE, AMEX and NASDAQ based on a three way quintile sorting along the size (NYSE size-quintile), book-market ratio, and momentum dimensions. The daily DGTW benchmark return for each portfolio is the value-weighted return of all the component stocks. Finally, the abnormal performance of a given stock is its return in excess of that of the benchmark portfolio it belongs.

We treat the confidential and original 13F holdings by the same institution as two separate portfolios in each quarter. For each quarter and each of these two portfolios, we calculate their equally-weighted and value-weighted holding-period DGTW benchmark-adjusted returns for horizons ranging from a minimum of 45 days to a maximum of one year starting from the quarter-end portfolio date. The rationale for the minimum and maximum return horizons is that institutions have a maximum of 45 days for filing their original holdings and a maximum of 365 days as the normal delay period for revealing their confidential holdings.

D. Proxies for Information and Other Firm Characteristics

DI. Proxy for information sensitive events

In the SEC guideline for amendment to 13F filings, “open risk arbitrage” and “block positioning” are allowable reasons for the delay in disclosure. The event that best exemplifies both motives is merger and acquisition. M&A speculations could be made upon an announced attempt of acquisition where the risk arbitrageurs bet on the completion of the deal and the convergence of the price to the bidding price; or upon potential targets based on the speculator’s own predictive model or private information. The motive for the second type of speculation is not directly observable. However, the stocks that the institutions speculate on should end up as targets of M&A transactions with a probability that is higher

than the random incidences of M&A. Therefore, we use the indicator variable for a stock that becomes an M&A target within three quarters (starting two quarters prior to the quarter-end portfolio date and including the portfolio quarter itself) for the motive of the confidential filing.

Data on M&A transactions are retrieved from Securities Data Company (SDC), updated to the end of 2007.²⁶ A necessary condition for the classification of an M&A transaction is a sufficient change-of-control. For this purpose, we exclude transactions classified as acquisitions of partial stakes, minority squeeze-outs, buybacks, recapitalizations, and exchange offers. We also require that the bidder had a stake below 50% before the transaction and stake above 50% afterwards. Following the M&A literature, we exclude all financial (SIC code 6000-6999) and utilities (SIC code 4000-4949) from the sample, because takeovers are highly regulated in these industries. Our final sample has 3,844 deals during the period of 1999-2007.

D2. Proxies for the information asymmetry of stocks

If the primary purpose of confidential filing is to conceal information about the holdings, then stocks in such holdings are likely to be more opaque and subject to more information asymmetry among investors compared to stocks that are revealed in the regular quarterly filings. We use several variables that are firm-specific drivers of information asymmetry including firm size, book-to-market, sales growth, liquidity, and analyst following. Extant literature indicates that greater information asymmetry is associated with smaller stocks (Chari, Jagannathan, and Ofer (1988), Llorente, Michaely, Saar, and Wang (2002)), lower book-to-market stocks (McLaughlin, Safieddine, and Vausdevan (1998)), illiquid stocks (Glosten and Milgrom (1985), Merton (1987), Diamond and Verrecchia (1991), and Kim and Verrecchia (1994)), and lesser analyst following (Brennan and Subrahmanyam (1995), Hong, Lim, and Stein (2000), Chang, Dasgupta, and Hilary (2006)).

Market capitalization (*Size*) and book-to-market ratios (*B/M*) are recorded at year-end using data from CRSP and COMPUSTAT. While the book-to-market ratio is generally accepted as a measure for the growth potential of a firm, we also measure the growth directly using the average annual sales growth

²⁶ This data was obtained from Edmans, Goldstein, and Jiang (2009). We thank the authors for sharing the data.

of a firm during the past three years (*Growth*). We resort to the Amihud (2002) illiquidity measure as the proxy for trading liquidity (*Illiquidity*). The measure is constructed as the yearly average of the square root of $|\text{return}|/(\text{price} \times \text{volume})$, essentially an empirical analogue to the inverse of Kyle's (1985) lambda, or the market impact. We measure analyst coverage of a firm by counting the number of analysts in the I/B/E/S database (available through WRDS) that make at least one forecast or recommendation on the firm during the year (*Analyst*).

D3. Summary Statistics of Stock-Level Variables

Table III reports the summary statistics of stock-level variables, including proxies for information asymmetry and other firm characteristics variables that serve as controls. It is worth noting that the sample of stocks in the holdings is very different from the sample of the entire stock universe because one stock-year observation appears in the sample as many times as it appears in the holdings of all filings institutions. As a result, stocks with high institutional ownership are over-represented in the pooled sample of holdings.

[Insert Table III here.]

Table III shows that stocks in confidential filings are smaller, have higher sales growth, lower trading liquidity, and lower analyst coverage, compared to the stocks in the original filings. Differences along these dimensions are statistically significant at the 1% level, except sales growth, for which the difference is significant at the 10% level. The differences in these stock characteristics generally point towards greater information asymmetry in the confidential holdings. Moreover, stocks in confidential holdings are far more likely to be targets in M&A deals (*M&A*), 9.0% vs. 4.5% for the original filings. The contrast is even stronger in the confidential holdings if we exclude the top 25 institution-quarters (about 5% of all institution-quarter observations) in terms of number of stocks in the confidential filings. For the other filers, 18.8% of the confidential stocks are involved in M&A deals (not tabulated), suggesting M&A speculation and risk arbitrage are important motives for the vast majority of institutions that take advantage of the confidential treatment. The example of Stark Onshore master fund tabulated in Table I represents a more extreme example where 30 (54.1%) out of these 55 holdings became targets in

M&A transactions during the portfolio quarter or the subsequent two quarters.²⁷

III. Determinants of Confidential Filings

In this section, we examine the determinants for a stock to be included in the confidential filings rather than in the original filings to test our hypotheses 1 and 2 related to the type of institutions seeking confidentiality and the type of stocks that are included in the confidential holdings. Towards this end, we estimate the following logistic regression

$$CF_{i,j,t} = f(InstType, StockChar), \quad (1)$$

where $CF_{i,j,t}$ is an indicator variable that equals one if the stock i is included in the confidential filings of institution j during quarter t . *InstType* indicates the type of institutions, namely banks and insurance companies, hedge funds, investment companies/advisors, and others, with banks and insurance companies being the omitted category. *StockChar* is a vector of stock characteristics variables including: an indicator variable that takes the value of 1 for the stock of the firm that becomes a M&A target during the portfolio quarter or the subsequent two quarters, otherwise it is equal to zero (*M&A*), the market capitalization of the firm in logarithm (*Log(Size)*), Fama and French (1997) 48 industry-adjusted book-to-market value of the firm (*Adj B/M*) following Cohen and Polk (1998) and Daniel, Grinblatt, Titman, and Wermers (1997)²⁸, past twelve-month stock returns (*Momentum*), annual sales growth of the firm (*Growth*), stock illiquidity (*Illiquidity*), and the number of Analysts covering the firm during the year (*Analysts*). All stock characteristics are calculated at the fiscal year-end preceding the reporting quarter. Finally, we include industry dummies and quarters to control for industry effects and common variation over time.

The sample for the logistic regression consists of stock holdings reported in all confidential filings and their corresponding original filings. The sample for this analysis excludes original filings that

²⁷ Among these 30 stocks, 25 became M&A targets during the report quarter, and 5 turned into targets during the following two quarters.

²⁸ More specifically, the industry benchmark is the long-term average of industry median book-to-market ratios over the period from 1990 to 2007. We thank Kenneth French for providing information about the Fama and French industries on his website.

are not paired with a confidential filing. We adopt this sample selection criterion so as to facilitate extracting information relating a stock's characteristics to the probability of its being included in a confidential holding. Using the full sample (including positions of original filings without paired confidential filings) also yields consistent results, but the power of the test would be lower due to the large number of observations with very little information content because most of the unpaired original filings are made by institutions that have never resorted to confidentiality.²⁹ We also estimate a logistic regression for the complete sample of stocks from all filings and obtain qualitatively similar results. Finally, we adjust the standard errors for heteroskedasticity and clustering at the institution level. Table IV reports the results from the logistic regression in equation (1).

[Insert Table IV here.]

The results show that the coefficients on the three institution-type indicator variables, *Hedge Fund*, *Investment Companies/Advisor*, and *Other* are all positive (coefficients of 5.74, 2.21, and 3.15 respectively) and significant at the 1%, 10%, and 5% levels respectively, implying that stocks included in the confidential filings are more likely to be filed by all three types of institutions relative to banks and insurance companies (the omitted category). Our findings are also economically significant. The base probability for the omitted category of banks and insurance companies, obtained by setting all the independent variables to their mean values, is 1.91%. In contrast, institutions belonging to hedge fund, investment company/advisor, and other categories have probabilities greater by 61.93, 4.54, and 26.39 percentage points of filing confidentially compared to banks and insurance companies. Together, these results support Hypothesis 1 in that confidential holdings are more likely to come from asset-management firms. Since these institutions are in the business of collecting and processing information in order to implement their trading strategies, they have strong incentives to delay revealing such information to the

²⁹ In general, a discrete response regression model suffers from low power if the unconditional probability of a positive response is miniscule (as would be the case if we use the full sample). In such cases, "choice-based sampling" such as eliminating observations that have a zero probability to have a positive response (such as holdings of institutions that never resort to confidential filing) can increase the power of the test by increasing the average information content of the kept observations. Please see Manski and McFadden (1981) for a general discussion of the approach. Moreover, a logistic regression has the desirable feature that all of its slope coefficients (but not the intercept) have the same probability limit as those using the full sample, but the former are more efficient estimates.

public.

We perform additional pairwise comparisons among the non-omitted institution types and report the results at the bottom of Table IV. As expected, we observe that confidential holdings are most likely to be filed by hedge funds as the coefficient of *Hedge Fund* is greater than those of *Investment Company/Advisor* and *Other* at the 1% and 10% levels respectively. To the extent that hedge funds represent arguably the most active portfolio managers among all institutional investors, this result provides further support to our Hypothesis 1. There does not seem to be a significant difference between the likelihood of confidential filings by investment companies/advisors and that of “Other” institutions.

Moving on to the stock characteristics, we observe that confidential filings are more likely to be related to M&A events with the coefficient of *M&A* being positive and significant at the 1% level (t-statistic = 3.71). In terms of economic significance, stocks involved in M&A have probability greater by 2.90 percentage points to be included in the confidential holdings when compared to non-M&A stocks. In addition, we find significantly negative coefficient on *Log(Size)* (t-statistic = -3.66), positive coefficient on *Illiquidity* (t-statistic = 1.86), and negative coefficient on *Analysts* (t-statistic = -2.37). Again these results are economically meaningful. For example, on average, illiquid stocks have a higher probability of 1.31 percentage points to be included in the confidential holdings compared to liquid stocks. As mentioned before, prior literature shows that stocks with smaller market capitalization, lower book-to-market ratio, higher illiquidity, and lower analyst coverage are associated with higher information asymmetry. Hence, these findings indicate that stocks with higher level of information asymmetry are more likely to be included in the confidential holdings. Taken together, these results support Hypothesis 2 that private information concerning the M&A events and higher information asymmetry, in general, constitutes motivation for seeking confidentiality of some portfolio holdings.

IV. Performance of portfolios of confidential filings

Having examined the determinants of confidential holdings and having shown that such holdings are motivated by private information; it is natural to ask whether confidential holdings are associated with

superior returns. We address this question using the DGTW (1997) benchmark-adjusted performance measure in several specifications.

A. Comparing Return Performance of Confidential and Original Holdings

We first compare the DGTW benchmark-adjusted returns (our measure of risk-adjusted performance) of confidential and original holdings at the institution level. This procedure includes all original and confidential filings in the sample and entails three steps. First, we compute the DGTW measure for each stock in each filing. Second, we compute both the equally-weighted (Panel A) and value-weighted (Panel B) average performance of portfolios of each filing type (original and confidential), that is, there are up to two portfolios for each institution-quarter, one for the original, and another one for the confidential filing, if the latter exists. Finally, we average, over all original and all confidential portfolios, their DGTW measures at different return horizons ranging from 45 days to 12 months from the quarter-end portfolio date. We conduct the two-sample t-tests where we adjust the standard errors for heteroskedasticity as well as clustering at the institution level, and include quarter dummies to control for variation over time.

[Insert Table V here.]

The univariate results in Table V indicate that there is weak evidence of confidential holdings exhibiting higher risk-adjusted returns compared to original holdings. Most of the pairwise differences for different horizons are positive but not statistically significant with the exception of the equally-weighted case at the two-month horizon, where the difference of 0.94% per month is significant at the 10% level (t-stat = 1.734), i.e., an annualized return spread of 5.8%.

We next decompose the comparison of risk-adjusted performance between confidential and original holdings by institution types: Banks and insurance companies, hedge funds, investment companies/advisors, and others. Table VI reports the results. For expositional convenience, we henceforth report the results for only the equally-weighted case as both equally-weighted and value-weighted portfolios yield qualitatively similar findings.

[Insert Table VI here.]

Table VI reveals that, among all institution types, investment companies/advisors (Panel C) exhibit the strongest differences between the DGTW measures of their confidential and original holdings. The difference is positive at all horizons from 45 days to 12 months but is significant at the 5% level at the two-month to three-month horizons. Moreover, these differences are economically significant as well. For example, a two-month difference of 1.59% per month translates into an annualized spread of 9.9%.

In addition, hedge funds and other institutions (Panel B and Panel D) also have higher DGTW measures for their confidential holdings than their original ones at shorter horizons, but the differences are not statistically significant. It is worth noting, however, that although the confidential holdings of hedge funds do not outperform significantly their original counterparts, original holdings of hedge funds exhibit positive and the highest risk-adjusted performance among all four types of institutions at all horizons from 2 months to 9 months. In contrast, the confidential holdings of banks and insurance companies (Panel A) underperform their original holdings at horizons from 45 days to 6 months, and the differences are generally significant at either the 1% level or the 5% level. Taken together, these findings show that confidential holdings of asset-management firms such as hedge funds and investment companies/advisors tend to have superior performance as they are more likely to be engaged in gathering private information for executing proprietary and secretive trading strategies.

To summarize, our univariate test results lend preliminary, albeit weak support to Hypothesis 3 that confidential holdings overall exhibit higher risk-adjusted returns than original holdings, except for bank and insurance companies. In Section IV.C that follows the next section, we investigate if these results hold in a multivariate setting where we jointly control for the type of institution filing the original and confidential holdings, the number of stocks in the holdings, and the number of confidential filings.

B. Performance of Confidential Holdings and M&A

We had earlier shown in Section III that stocks of M&A targets are disproportionately included in the confidential filings. It is therefore an interesting question as to what extent these M&A deals

contribute to the risk-adjusted performance of the confidential holdings. For this purpose, we create a portfolio of M&A targets in confidential holdings (the M&A portfolio), and another portfolio for the remaining positions in the confidential holdings (the non-M&A portfolio). We then compare the DGTW measures of these two components of the confidential holdings with the DGTW measure of the original holdings. Table VII reports the results of this comparison.

[Insert Table VII here.]

As expected, the DGTW benchmark-adjusted return of the M&A portfolio is higher than that of original holdings at two-month to six-month horizons, with statistical significance ranging between the 5% and 10% levels. These findings are also economically meaningful. For example, the difference at two-month horizon is 3% per month, implying an annualized return spread of 19.4%. On the other hand, the DGTW measure of the non-M&A portfolio is not significantly different from that of original holdings. These results suggest that M&A speculations are driving the superior returns of confidential holdings. Since investments related to M&A often involve slowly building a sizable position in the target firm, it is natural that institutions have incentives to conceal private information related to M&A deals from their competitors. Since these positions in M&A targets are going to be accumulated over a relatively short period of time, our finding of superior relative performance for up to six-month horizon is intuitive. These results also explain the somewhat weaker evidence at the univariate level in the previous section where both M&A-related and non-M&A confidential holdings are pooled together.

C. Multivariate Analyses of Abnormal Returns

After a battery of univariate tests, in order to complete our analysis of the relative performance of confidential holdings, we estimate the following multivariate regressions for different return horizons, where we jointly control for variables that affect the DGTW benchmark-adjusted returns:

$$DGTW_{i,j,t} = \beta_1(j = Conf) \cdot InstType_i + \beta_2(j = Orig) \cdot InstType_i + \gamma Control_{i,j,t} + \varepsilon_{i,j,t}. \quad (2)$$

In (2), the dependent variable, $DGTW_{i,j,t}$, is the equally-weighted DGTW benchmark-adjusted return of the quarterly portfolios of institutions i of filing type j in quarter t . Filing type j takes two values: $j=Conf$

indicates that the filing is confidential and $j = Orig$ indicates original filing. $InstType_i$ is a vector of institution types as defined in Tables IV and VI. The interaction of filing type and institution type yields eight dummy variables: The original and confidential filings by banks and insurance companies (*BKORIG* and *BKCONF*); those of hedge funds (*HFORIG*, *HFCNF*), of investment companies/advisors (*INVORIG*, *INVCONF*), and of other institutions (*OTHORIG*, *OTHCONF*). In the regression, we designate *BKORIG* as the omitted category.

The control variables (*Control*) in (2) include the natural logarithm of the number of stocks in the quarterly portfolio (*#Stocks*, proxy for portfolio concentration), the total number of confidential filings made by the institution in our sample (*#Conf. Filings*, proxy for the propensity of the institution in using confidential filings), and the natural logarithm of the dollar value of holdings in original and confidential holdings combined for each institution-quarter (*Portfolio Size*, proxy for the size of the institution). Standard errors are adjusted for heteroskedasticity as well as clustering at the institution level. Results from regression in equation (2), estimated for different return horizons, are reported in Table VIII. At the bottom of the table, we report additional tests on the pairwise comparisons between the coefficients of non-omitted categories.

[Insert Table VIII here.]

First, we compare the risk-adjusted performance of original holdings of different types of institutions relative to that of banks and insurance companies (the omitted category in the regression). The coefficients on the original holdings of hedge funds (*HFORIG*) are positive at all horizons, and statistically significant at most horizons, meaning that the originally filed quarterly portfolios of hedge funds outperform those of banks and insurance companies. Same is the case for investment companies/advisors (*INVORIG*) and other institutions (*OTHORIG*), although the differences are mostly not statistically significant. In untabulated tests, we find that the risk-adjusted performance of the original holdings among the three non-omitted institution types, i.e., hedge funds, investment companies/advisors, and other institutions, are not significantly different from each other. These results together suggest that overall institutions with an asset management focus demonstrate better stock-selection skills than banks

and insurance companies, even when we only consider original holdings.

In order to assess the risk-adjusted performance of confidential holdings of each type of institution relative to that of the original holdings by the same institution type, we conduct additional pairwise comparison tests: *HFCNF* vs *HFORIG*, *INVCONF* vs *INVORIG*, and *OTHCONF* vs *OTHORIG*. Results are reported at the bottom of Table VIII. The coefficient of *BKCONF* in the regression and its associated t-statistics are directly informative about the comparison of the two filings types for the “banks and insurance companies” category.

Panel A shows that the confidential holdings of investment companies/advisors beat their original holdings, and the difference is statistically significant from 45-day horizon to five-month horizon. Confidential holdings of hedge funds also have higher abnormal returns than their original holdings, significant at the 10% level at two-month and three-month horizons. Furthermore, the differences are economically meaningful. For example, the two-month difference of 1.90% per month translates into an annualized spread of 12%. Confidential holdings of other institutions do not significantly outperform their original holdings, though the differences are overall positive. Finally, banks and insurance companies are the only category where confidential holdings underperform original holdings at all horizons, and the differences are statistically significant at two-month to five-month horizons. In addition to being more statistically significant, these results are generally consistent with earlier univariate results reported in Table VI.

In addition, we test the joint hypothesis that the confidential holdings of all institutions besides banks and insurance companies, i.e., asset management companies (hedge funds and investment companies/advisors) and others outperform their original holdings. We reject the null of no difference at the 10% significance level for the two-month and three-month horizons.

Finally, in Table VIII Panel B, we conduct pairwise tests to compare the performance of confidential holdings across different types of institutions. We find that the confidential holdings of both types of asset management firms (hedge funds and investment companies/advisors) outperform those of banks and insurance companies, and the differences are statistically significant from 45-day to five-month

horizons (see Panel B1). On the other hand, the differences between the former two types are not statistically significant (see Panel B2).

In summary, the combined results in Panels A and B of Table VIII are supportive of Hypothesis 3: Abnormal performance of confidential holdings of all institution types is better than that of the original holdings, and this is especially the case for asset-management companies that tend to have more informed confidential holdings, associated with superior risk-adjusted performance over the horizon of two to six months.

V. Concluding Remarks

By relegating some of the quarter-end holdings to an amendment 13F filing, an institution could delay the disclosure of such holdings to the public for a significant period of time (usually up to one year). To the extent that institutions resort to confidentiality strategically, holdings in the confidential filings are likely to contain more private information than those disclosed at regular intervals. Despite their potential importance, the confidential holdings have not been included in the extant research that analyzes quarterly holdings of institutions due to data availability through conventional sources. This study fills the gap by examining the complete holdings that incorporate information from confidential filings.

Our results show that asset management companies, who rely on collecting and process private information in order to deliver superior returns, seek confidentiality more often; their holdings are more likely to be associated with private information and to exhibit superior returns as a result. These findings offer an explanation to the ongoing resistance by investment managers against disclosure, and raise interesting questions regarding the design of ownership disclosure rules that optimally balance between ensuring sufficient transparency and preserving the incentives for sophisticated investors to collect and benefit from private information.

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Figure 1
Time Series of the Numbers of Original and Confidential 13F Filings

This figure shows the quarterly time series of the numbers of original and confidential 13F filings in our final sample. The solid line plots the number of original 13F filings to SEC in each quarter, and the dotted line plots the number of confidential 13F filings in each quarter. Section II.A provided a detailed description of the construction of the sample.

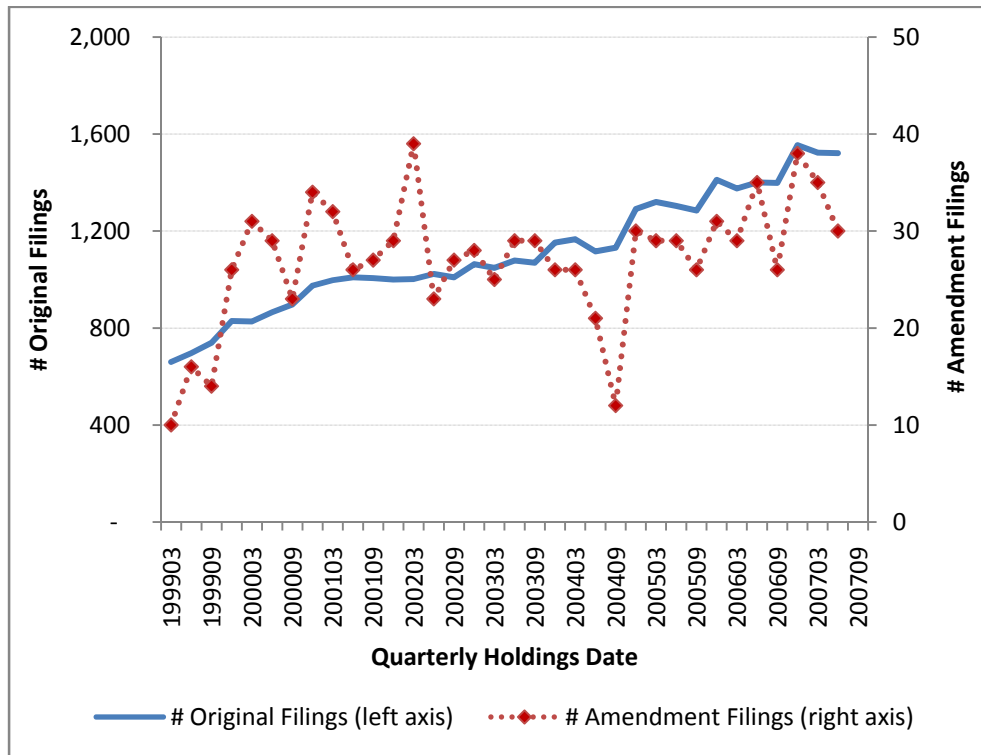


Table I
13F Confidential Holdings of Stark Onshore Management LLC

This table lists all the common stock confidential holdings reported in the 13F amendments filed by Stark Onshore Management LLC over the sample period 1999Q1-2007Q2. A confidential holding is defined as a position in an amendment filing that was unreported in the corresponding original 13F filing, or the increase of at least 100% in a position from the original to the amendment filing. “Issuer Name” is the name of the company issuing the common stock. “Shares” is the number of shares held by Stark Onshore on the portfolio date. “Portfolio Date” is the quarter-end date for which the portfolio holdings are reported. “Filing Date” is the date when the 13F amendment is filed. “Thomson Reuters” is an indicator variable for whether the holding is reported to the Thomson Reuters Ownership Database. “M&A Target” is an indicator variable for whether the issuer company becomes a target for acquisition during the portfolio quarter or the subsequent two quarters.

Issuer Name	CUSIP	Shares	Portfolio Date	Filing Date	Thomson Reuters	M&A Target
Anthem Inc	94973V10	67,360	9/30/2004	2/14/2005	No	No
Cox Communications Inc	22404410	269,964	9/30/2004	2/14/2005	No	No
Metro-Goldwyn-Mayer Inc	59161010	60,000	9/30/2004	2/14/2005	No	Yes
Sears Holdings	81238710	390,800	12/31/2004	5/13/2005	No	Yes
Symantec Corp	87150310	161,650	12/31/2004	8/16/2005	No	No
Gold Fields Ltd	38059T10	73,277	3/31/2005	8/16/2005	No	No
MCI Communications Corp	55269110	2,103,850	3/31/2005	2/15/2006	No	Yes
Sungard Data Systems	86736310	1,557,250	3/31/2005	9/27/2005	No	Yes
Symantec Corp	87150310	161,650	3/31/2005	8/16/2005	No	No
Unocal Corp	91528910	393,650	3/31/2005	9/27/2005	No	Yes
AT&T Corp	00195750	6,250	6/30/2005	2/15/2006	No	No
Brookstone Inc	11453710	98,463	6/30/2005	10/7/2005	No	Yes
Cablevision Systems Corp	12686C10	281,250	6/30/2005	1/6/2006	No	Yes
Infousa Inc New Com	45670G10	221,542	6/30/2005	10/7/2005	No	Yes
MCI Communications Corp	55269110	1,119,450	6/30/2005	2/15/2006	No	No
Medicis Pharmaceutical	58469030	13,750	6/30/2005	1/6/2006	No	Yes
Metals Usa Inc	59132420	183,275	6/30/2005	10/7/2005	No	Yes
Sungard Data Systems	86736310	1,557,250	6/30/2005	9/27/2005	No	No
Unocal Corp	91528910	393,650	6/30/2005	9/27/2005	No	Yes
AT&T Corp	00195750	6,250	9/30/2005	2/15/2006	No	No
Bei Technologies Inc	05538P10	46,200	9/30/2005	2/15/2006	No	Yes
Cablevision Systems Corp	12686C10	281,250	9/30/2005	2/15/2006	No	No
Chiron Corp	17004010	506,040	9/30/2005	2/15/2006	No	Yes
Gold Banc Corp Inc	37990710	555,203	9/30/2005	12/15/2005	No	Yes
Guidant Corporation	40169810	61,650	9/30/2005	5/19/2006	No	Yes
Hibernia Corp	42865610	525,000	9/30/2005	2/15/2006	No	No
MCI Communications Corp	55269110	1,119,450	9/30/2005	2/15/2006	No	No
Medicis Pharmaceutical	58469030	13,750	9/30/2005	2/15/2006	No	Yes
Metals Usa Inc	59132420	185,775	9/30/2005	2/15/2006	No	No
Petrokazakhstan Inc	71649P10	93,750	9/30/2005	2/15/2006	No	No
Boston Scientific Corp	10113710	506,250	12/31/2005	5/19/2006	No	No
Guidant Corporation	40169810	397,011	12/31/2005	5/19/2006	No	Yes
Independence Comm. Bank Corp	45341410	373,797	12/31/2005	6/5/2006	No	Yes

Issuer Name	CUSIP	Shares	Portfolio Date	Filing Date	Thomson Reuters	M&A Target
Ipayment, Inc	46262E10	26,360	12/31/2005	5/19/2006	No	No
Albertson's Inc	01310410	392,240	3/31/2006	6/5/2006	No	Yes
Capital One Financial	14040H10	110,000	3/31/2006	11/20/2006	No	No
Education Management Corp	28139T10	411,591	3/31/2006	8/15/2006	No	Yes
Engelhard Corp	29284510	72,800	3/31/2006	11/20/2006	No	Yes
Independence Comm. Bank Corp	45341410	13,677	3/31/2006	6/5/2006	No	No
Keyspan Corp	49337W10	396,780	3/31/2006	2/20/2007	No	Yes
Thomas Nelson	64037610	75,360	3/31/2006	8/15/2006	No	Yes
Capital One Financial	14040H10	145,000	6/30/2006	11/20/2006	No	No
Commercial Capital Bancorp, Inc	20162L10	443,073	6/30/2006	11/20/2006	No	Yes
Constellation Energy Group Inc	21037110	648,660	6/30/2006	5/3/2007	No	No
Exelon Corp	30161N10	783,500	6/30/2006	11/20/2006	No	No
Fisher Scientific Intl	33803220	116,080	6/30/2006	11/20/2006	No	Yes
Keyspan Corp	49337W10	540,040	6/30/2006	2/20/2007	No	No
Kinder Morgan Inc	49455P10	202,340	6/30/2006	11/20/2006	No	Yes
Longview Fibre Co	54321310	40,000	6/30/2006	2/20/2007	No	No
Nco Group Inc	62885810	407,999	6/30/2006	11/20/2006	No	Yes
Northwestern Corp	66807430	175,832	6/30/2006	5/3/2007	No	Yes
Public Service Enterprise Group	74457310	730,774	6/30/2006	11/20/2006	No	No
Univision Communications Inc	91490610	1,298,435	6/30/2006	5/3/2007	No	Yes
Multi Fineline Electronix In	62541B10	933,653	3/31/2007	5/16/2007	No	No
Rouse Co	77927310	269,910	9/30/2004	11/25/2004	Yes	Yes

Table II
Summary Statistics of 13F Original and Confidential Filings

Panel A of the table reports distribution of the delay (in number of days) between the quarter-end portfolio date and the filing date for all original and confidential 13F filings (the “preliminary sample”). Panel B summarizes the number of filings, the number of institutions, the dollar value, and the average number of stocks in the sample that excludes observations with extreme delays, i.e., 180 days or more for the original filings and 1,460 days or more for the confidential filings (the “final sample”). The statistics for both types of holdings are reported separately, and those of the confidential holdings are compared to the combined portfolio of the confidential filings with their corresponding original holdings, in percentage terms.

Panel A: Delay Period between Portfolio Date and Filing Date

<u>Original 13F Filings</u>									Total
Delay (days)	0-30	31-45	46-60	61-180	180 +				
Number	8,780	24,289	3,760	815	565				38,209
Percent	22.98%	63.57%	9.84%	2.13%	1.48%				
<u>Confidential 13F Filings</u>									Total
Delay (days)	0-30	31-45	46-60	61-180	181-365	366-730	731-1460	1460 +	
Number	4	26	82	269	273	229	53	11	947
Percent	0.42%	2.75%	8.66%	28.41%	28.83%	24.18%	5.60%	1.16%	
Total									39,156

Panel B: Summary Statistics of Original and Confidential Holdings by Institution Types

	Bank & Insurance	Hedge Fund	Investment Company/ Advisor	Other	Total
<i><u>Original 13F Filings</u></i>					
# of institutions	237	948	1,036	696	2,917
# of 13F filings	3,367	10,662	16,017	7,153	37,199
\$ million per institution-quarter (Mean)	6,513.8	1,592.2	2,823.6	1,908.6	2,504.9
\$ million per institution-quarter (Median)	548.1	223.8	247.7	149.8	222.6
# of stocks per institution-quarter (mean)	411.6	113.4	161.6	149.4	163.3
# of stocks per institution-quarter (median)	215.1	40.4	72	58	61.1
<i><u>Confidential 13F Filings</u></i>					
# of institutions	6	76	33	16	131
# of 13F filings	17	440	186	137	780
\$ million per institution-quarter (Mean)	90.3	230.0	449.2	86.8	267.1
% of original filing and conf. filing combined	0.9%	31.4%	20.4%	14.0%	25.1%
\$ million per institution-quarter (Median)	9.5	59.6	73.2	50.6	56.2
% of original filing and conf. filing combined	0.0%	20.0%	1.7%	9.3%	12.0%
# of stocks per institution-quarter (mean)	24.7	42.4	46.4	4.0	38.1
% of original filing and conf. filing combined	1.7%	25.6%	13.1%	9.4%	19.3%
# of stocks per institution-quarter (median)	4.0	3.0	4.3	3.4	3.8
% of original filing and conf. filing combined	0.3%	16.7%	1.9%	10.0%	7.7%

Table III
Stock-Level Summary Statistics of Original and Confidential 13F Holdings

This table reports the summary statistics (mean, median, and standard deviation) of the stocks in both original and confidential 13F holdings. All variables, unless otherwise specified, are calculated at the fiscal year-end before the portfolio dates. “Size” is the market capitalization of the stock in thousand dollars. “Adj B/M” is the firm’s book-to-market ratio in excess of the corresponding Fama and French (1997) 48 long-term industry average ratio. “Momentum” is the stock return during the 12 months prior to the quarter-end portfolio date. “Growth” is the average annual sales growth of the past three years. “Illiquidity” is the Amihud (2002) illiquid measure, or the yearly average of the square root of daily |Return|/(Price×Vol). “Analysts” is the number of I/B/E/S analysts covering the firm during the year. “M&A” is an indicator variable that takes a value of 1 for the stock of the firm that becomes an M&A target during the portfolio quarter or the subsequent two quarters. Standard errors in two-sample tests are adjusted for clustering for institutions and quarters. Coefficients marked with ***, **, and * are significant at the 1%, 5%, and 10% level respectively.

	Size	Adj B/M	Momentum	Growth	Illiquidity	Analysts	M&A
<i>Original 13F Filings</i>							
Mean	19,784.91	-0.14	0.19	0.21	0.08	15.07	4.50%
Median	3,093.93	-0.2	0.11	0.11	0.03	13	
Std. Dev.	43,824.64	0.36	0.55	0.41	0.15	12.37	
#obs	6,699,101	6,694,271	6,702,119	8,052,578	8,042,333	8,071,789	6,604,129
<i>Confidential 13F Filings</i>							
Mean	5,818.53	0.003	0.16	0.32	0.17	9.8	9.02%
Median	856.38	-0.13	0.09	0.13	0.08	6	
Std. Dev.	20,557.65	0.49	0.69	0.63	0.23	10.48	
#obs	18,412	18,423	18,441	23,898	23,856	24,002	20,227
<i>Two-sample Tests</i>							
Differences in Mean (Confidential – Original)	-13,966.38***	0.14***	-0.03	0.11*	0.09***	-5.27***	4.52%**
Clustered t-stat.	-4.637	2.930	-0.314	1.952	2.687	-5.477	2.021

Table IV
Determinants of 13F Confidential Holdings—Stock Level

This table reports the results from a logistic regression modelling the determinants of 13F confidential holdings at the stock level. The dependent variable is an indicator variable for a stock to be included in the confidential holdings of an institution-quarter. The types of institutions (Hedge fund, investment company/advisor, other, bank and insurance) are defined in Section II.B. “Banks and insurance companies” form the omitted category. “Log(Size)” is the natural logarithm of “Size” defined in Table II. Other variables are the same as defined in Table II. “Marginal Effect Coefficients” are the marginal effect coefficients of the logistic regression. For binary variables, the coefficients are associated with discrete changes from 0 to 1. Standard errors adjust for heteroskedasticity and clustering at the institution level and t-stats are reported in parentheses. Coefficients marked with ^{***}, ^{**}, and ^{*} are significant at the 1%, 5%, and 10% level respectively.

	Predicted Sign	Estimates	Marginal Effect Coefficients
Institution Types			
Hedge Fund	+	5.737*** (4.812)	61.93%
Investment Company/Advisor	+	2.213* (1.824)	4.54%
Other	+	3.151** (2.06)	26.39%
Stock Characteristics			
M&A	+	0.984*** (3.706)	2.90%
Log(Size)	–	–0.266*** (–3.664)	–0.50%
Adj B/M	–	–0.109** (–1.981)	–0.20%
Growth	+	–0.0342 (–0.781)	–0.06%
Illiquidity	+	0.700* (1.859)	1.31%
Analysts	–	–0.00583** (–2.367)	–0.01%
Momentum		–0.0237 (–0.653)	–0.04%
Constant		–5.710*** (–5.010)	
Observations		141,528	
Log pseudo-likelihood		–25321	
		0.465	
Industry Dummies included?		Yes	
Quarter Dummies included?		Yes	

Pairwise Tests across Non-Omitted Institution Types

Hedge Fund – Investment Company/Advisor = 0	Difference	3.52
	P-value	0.00%
Hedge Fund – Other = 0	Difference	2.59
	P-value	5.29%
Investment Company/Advisor – Other = 0	Difference	-0.938
	P-value	47.25%

Table V
DGTW Benchmark-Adjusted Returns of Original and Confidential Holdings

This table reports the DGTW benchmark-adjusted returns for original and confidential 13F holdings for return horizons ranging from 45 days to 12 months from the quarter-end portfolio date. Each observation is a portfolio that consists of all the original holdings, or all the confidential holdings of an institution-quarter. The DGTW benchmark-adjusted returns are first computed for each stock for each of type of holding (original or confidential) and then equally-weighted (Panel A) and value-weighted (Panel B) at the portfolio level. For the two-sample t-tests, standard errors are adjusted for heteroskedasticity and clustering at the institution level, and the quarter dummies to control for variation over time. Coefficients marked with ***, **, and * are significant at the 1%, 5%, and 10% level respectively.

Panel A: Equally-Weighted DGTW Benchmark-Adjusted Returns

	#obs	Return Horizons							
		45days	2m	3m	4m	5m	6m	9m	12m
Confidential Holdings	481	0.59%	1.04%	0.88%	0.31%	0.51%	-0.01%	-0.08%	0.58%
Original Holdings	37,199	-0.07%	0.09%	0.15%	-0.04%	0.14%	0.21%	0.36%	0.57%
Differences		0.67%	0.94%*	0.73%	0.35%	0.37%	-0.23%	-0.44%	0.01%
Clustered t-stat.		1.373	1.734	1.334	0.620	0.492	-0.251	-0.398	0.057

Panel B: Value-Weighted DGTW Benchmark-Adjusted Returns

	#obs	Return Horizons							
		45days	2m	3m	4m	5m	6m	9m	12m
Confidential Holdings	481	0.12%	0.66%	0.69%	0.38%	0.62%	0.10%	0.06%	0.95%
Original Holdings	37,175	-0.21%	-0.11%	0.06%	-0.15%	-0.03%	0.10%	0.18%	0.29%
Differences		0.33%	0.78%	0.63%	0.53%	0.65%	0.00%	-0.12%	0.67%
Clustered t-stat.		0.765	1.403	1.170	0.825	0.855	0.045	-0.080	0.468

Table VI
DGTW Benchmark-Adjusted Returns of Confidential 13F Holdings by Institution Type

This table reports the equally-weighted DGTW benchmark-adjusted returns for original and confidential 13F holdings for return horizons ranging from 45 days to 12 months from the quarter-end portfolio date for the four types of institutions: banks and insurance companies (Panel A), hedge funds (Panel B), investment companies/advisors (Panel C), and others (Panel D). Each observation is a portfolio that consists of all the original holdings, or all the confidential holdings of an institution-quarter. The DGTW benchmark-adjusted returns are first computed for each stock for each of type of holding (original or confidential) and then equally-weighted at the portfolio level. For the two-sample t-tests, standard errors are adjusted for heteroskedasticity and clustering at the institution level, and the quarter dummies are included to control for variation over time. Coefficients marked with ^{***}, ^{**}, and ^{*} are significant at the 1%, 5%, and 10% level respectively.

	#obs	Return Horizons							
		45days	2m	3m	4m	5m	6m	9m	12m
Panel A: Banks and Insurance Companies									
Conf. Holdings	17	-3.31%	-4.54%	-5.37%	-7.45%	-7.48%	-6.87%	-5.30%	-9.22%
Original Holdings	3,367	-0.06%	0.06%	0.10%	-0.10%	0.20%	0.29%	0.54%	0.83%
Differences		-3.25%**	-4.60%***	-5.48%***	-7.35%***	-7.68%**	-7.17%**	-5.84%	-10.06%
Clustered t-Stat.		-2.322	-2.895	-2.812	-2.705	-2.421	-2.004	-1.402	-1.572
Panel B: Hedge Funds									
Conf. Holdings	276	0.59%	0.83%	1.10%	0.32%	-0.02%	-0.48%	-0.26%	1.34%
Original Holdings	10,662	-0.09%	0.15%	0.27%	0.09%	0.22%	0.29%	0.48%	0.78%
Differences		0.67%	0.67%	0.83%	0.23%	-0.24%	-0.77%	-0.74%	0.56%
Clustered t-Stat.		1.109	1.096	1.091	0.379	-0.103	-0.572	-0.360	0.358
Panel C: Investment Companies/Advisors									
Conf. Holdings	130	0.58%	1.67%	1.77%	1.47%	1.67%	2.13%	1.74%	2.82%
Original Holdings	16,017	-0.07%	0.08%	0.15%	-0.08%	0.17%	0.25%	0.38%	0.53%
Differences		0.65%	1.59%**	1.61%**	1.55%	1.50%	1.89%	1.36%	2.28%
Clustered t-Stat.		1.159	2.255	2.207	1.485	1.132	1.092	0.451	0.789
Panel D: Others									
Conf. Holdings	58	1.81%	2.24%	-0.30%	-0.04%	2.77%	-0.61%	-1.76%	-5.13%
Original Holdings	7,153	-0.07%	0.05%	0.01%	-0.13%	-0.09%	-0.01%	0.05%	0.22%
Differences		1.88%	2.19%	-0.31%	0.09%	2.86%	-0.60%	-1.82%	-5.35%**
Clustered t-Stat.		0.763	0.753	-0.157	0.130	0.762	-0.189	-0.803	-2.112

Table VII
DGTW Benchmark-Adjusted Returns of Confidential 13F Holdings by M&A Events

This table reports the equally-weighted DGTW benchmark-adjusted returns of confidential 13F holdings, separately by groups of stocks that are targets in M&A and those that are not. For each institution-quarter, we create an “M&A” portfolio of all confidential holdings that becomes M&A targets during the portfolio quarter or the subsequent two quarters, and a “Non-M&A” portfolio of the remaining confidential holdings. We then compare the DGTW benchmark-adjusted returns of these two confidential portfolios with those of the corresponding originally-filed portfolios for return horizons ranging from 45 days to 12 months from the quarter-end portfolio date. For the two-sample t-tests, standard errors are adjusted for heteroskedasticity and clustering at the institution level, with quarter dummies to control for variation over time. Coefficients marked with ^{***}, ^{**}, and ^{*} are significant at the 1%, 5%, and 10% level respectively.

	#obs	Return Horizons							
		45days	2m	3m	4m	5m	6m	9m	12m
M&A									
Confidential Holdings	266	2.33%	3.09%	3.32%	3.24%	3.90%	4.26%	3.21%	2.38%
Original Holdings	37,199	-0.07%	0.09%	0.15%	-0.04%	0.14%	0.21%	0.36%	0.57%
Differences		2.40%	3.00%*	3.16%**	3.29%*	3.76%**	4.05%**	2.85%	1.81%
Clustered t-stat.		1.617	1.741	2.214	1.937	2.146	2.168	1.485	0.985
Non-M&A									
Conf. Holdings	457	-0.06%	0.30%	0.08%	-0.52%	-0.48%	-1.13%	-1.15%	-0.21%
Original Holdings	37,199	-0.07%	0.09%	0.15%	-0.04%	0.14%	0.21%	0.36%	0.57%
Differences		0.01%	0.21%	-0.08%	-0.48%	-0.61%	-1.35%	-1.51%	-0.78%
Clustered t-stat.		0.093	0.409	-0.038	-0.525	-0.674	-1.402	-1.193	-0.382

Table VIII
Abnormal Performance of Original and Confidential Holdings: Multinomial Regressions

This table reports the results of multivariate regressions that examine the attribution of risk-adjusted performance of quarterly holdings. The dependent variable is the equally-weighted DGTW benchmark-adjusted returns for return horizons ranging from 45 days to 12 months from the quarter-end portfolio date. Each observation is a portfolio that consists of all the original holdings, or all the confidential holdings of an institution-quarter. The original 13F holdings of the Bank/Insurance group are the omitted category. “BKCONF” is the indicator for confidential holdings of the Bank/Insurance category. “HFORIG” and “HFCONF” are the indicators of original and confidential holdings of the Hedge Fund category. “INVORIG” and “INVCONF” are the indicators of original and confidential holdings of the Investment Company/Advisor category. “OTHORIG” and “OTHCONF” are the indicators of original and confidential holdings of others types of 13F institutions. “#Stocks” is the log of the number of stocks in the filings. “#Conf. Filings” is the total number of confidential filings made by the institution in our sample. “Portfolio Size” is the log of dollar value of holdings in original and confidential filings combined for each institution-quarter. Standard errors are adjusted for heteroskedasticity and clustering at the institution level, with the quarter dummies included to control for variation over time. t-statistics are reported below coefficient estimates. Coefficients marked with ***, **, and * are significant at the 1%, 5%, and 10% level respectively.

	Return Horizons							
	45days	2m	3m	4m	5m	6m	9m	12m
<i>Institution and Filing Types</i>								
BKCONF	-0.0198	-0.0305*	-0.0396*	-0.063**	-0.0618*	-0.0593	-0.0383	-0.0670
	-1.161	-1.649	-1.824	-2.056	-1.768	-1.570	-0.966	-1.064
HFORIG	0.0003	0.0019**	0.0028***	0.0018	0.0033**	0.0036**	0.0053**	0.0050*
	0.535	2.337	2.990	1.583	2.183	2.122	2.181	1.716
HFCONF	0.0175	0.0209*	0.0273*	0.0181	0.0201	0.0129	0.0160	0.0392
	1.533	1.859	1.910	1.111	1.165	0.730	0.630	1.031
INVORIG	0.0005	0.0007	0.0012	0.0009	0.0021*	0.0021	0.0027	0.0014
	0.961	1.047	1.564	0.952	1.751	1.602	1.434	0.628
INVCONF	0.0185*	0.0301***	0.0332***	0.0307*	0.0354*	0.0345	0.0320	0.0516
	1.906	2.667	2.757	1.914	1.940	1.594	0.935	1.359
OTHORIG	0.0002	0.0007	0.0003	-0.0005	0.0004	0.0009	0.0011	-0.0007
	0.310	0.777	0.271	-0.429	0.217	0.483	0.448	-0.233
OTHCONF	0.0292	0.0343	0.0115	0.0136	0.0460	0.0088	-0.0022	-0.0279
	1.082	1.119	0.533	0.566	1.108	0.230	-0.073	-0.882
<i>Control Variables</i>								
#Stocks	0.0009**	0.0008*	0.0005	0.0006	0.0015*	0.0015	0.0029**	0.0034**
	2.196	1.715	0.986	0.721	1.772	1.564	2.117	1.966
#Conf. Filings	-0.0044	-0.0057	-0.0081*	-0.0066	-0.0084	-0.0071	-0.0064	-0.0110
	-1.247	-1.590	-1.958	-1.428	-1.630	-1.307	-0.866	-1.128
Portfolio Size	-0.0005	-0.0006	0.0002	0.0000	0.0003	0.0007	0.0003	-0.0001
	-1.594	-1.182	0.425	0.004	0.421	1.042	0.295	-0.093

	Return Horizons							
	45days	2m	3m	4m	5m	6m	9m	12m
Constant	-0.0021	-0.0002	-0.0030	-0.0035	-0.0086*	-0.011**	-0.0130*	-0.0097
	-0.953	-0.063	-1.032	-0.919	-1.823	-2.038	-1.677	-0.972
#obs	37656	37656	37656	37656	37656	37656	37656	37656
Adjusted R ²	0.0244	0.0268	0.0225	0.0254	0.0391	0.0390	0.0312	0.0293

Pairwise Comparisons across Non-Omitted Categories

	Predicted Sign	Return Horizons								
		45days	2m	3m	4m	5m	6m	9m	12m	
Panel A: Tests between Original and Confidential Holdings within Each Institution Type										
HFCONF- HFCONF=0	Diff.	+	1.72%	1.90%*	2.45%*	1.63%	1.68%	0.93%	1.07%	3.42%
	p-value		13.1%	8.7%	8.4%	31.3%	32.7%	59.4%	66.8%	36.4%
INVCONF- INVCONF=0	Diff.	+	1.80%*	2.94%***	3.20%***	2.98%*	3.33%*	3.24%	2.93%	5.02%
	p-value		6.1%	0.9%	0.7%	6.1%	6.6%	13.1%	38.9%	18.3%
OTHCONF- OTHCONF=0	Diff.	+	2.90%	3.36%	1.12%	1.36%	4.56%	0.79%	-0.31%	-2.70%
	p-value		28.2%	27.3%	60.3%	55.6%	27.0%	83.5%	91.2%	38.9%
All of the above	p-value		30.2%	7.5%	4.4%	30.4%	30.2%	46.5%	78.7%	21.2%
Panel B: Tests between Original and Confidential Holdings across Different Institution Types										
<i>Panel B1: Tests between Types of Asset Management Companies and Banks and Insurance Companies</i>										
HFCONF- BKCONF=0	Diff.	+	3.65%**	5.09%***	6.63%***	8.11%***	8.11%**	7.19%*	5.40%	10.62%*
	p-value		2.11%	0.35%	0.17%	0.68%	1.67%	5.05%	17.01%	9.55%
INVCONF- BKCONF=0	Diff.	+	3.75%**	6.01%***	7.22%***	9.37%***	9.64%***	9.35%**	7.00%	11.86%*
	p-value		1.64%	0.07%	0.05%	0.19%	0.52%	1.45%	10.41%	6.39%
OTHCONF- BKCONF=0	Diff.	+	4.82%*	6.43%**	5.05%*	7.66%**	10.7%**	6.78%	3.60%	4.00%
	p-value		7.84%	3.88%	5.10%	2.56%	2.79%	15.57%	40.53%	54.62%
All of the above	p-value		9.67%	0.86%	0.50%	2.09%	4.06%	10.14%	38.72%	6.58%
<i>Panel B2: Tests between Different Types of Asset Management Companies</i>										
HFCONF- INVCONF=0	Diff.	+	-0.10%	-0.92%	-0.59%	-1.26%	-1.53%	-2.16%	-1.60%	-1.24%
	p-value		90.34%	33.19%	58.12%	36.48%	32.82%	23.58%	57.73%	72.72%
HFCONF- OTHCONF=0	Diff.	+	-1.17%	-1.34%	1.58%	0.45%	-2.59%	0.41%	1.80%	6.62%*
	p-value		63.09%	62.38%	41.13%	83.29%	49.37%	90.36%	52.42%	6.94%
INVCONF- OTHCONF=0	Diff.	+	-1.07%	-0.42%	2.17%	1.71%	-1.06%	2.57%	3.40%	7.86%**
	p-value		65.86%	87.90%	24.52%	43.09%	78.29%	46.86%	31.48%	3.77%