

# Is There a Cost to Transparency?

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## Abstract

This is the first paper that directly tests the cost of transparency. More precisely, we examine whether a willingness to offer transparency to investors is beneficial or costly in terms of hedge fund returns. We measure a fund's willingness to offer transparency by whether it accepts managed accounts, which are directly controlled by investors. Overall, we find no evidence that a willingness to offer private transparency harms fund returns. In addition, there is no support for concerns that managers offering transparency suffer from selection bias.

**JEL Classifications:** G11 (portfolio choice), G23 (private financial institutions), G32 (financial risk management)

**Keywords:** hedge funds, transparency, managed accounts, performance evaluation, fraud

## 1. Introduction

The hedge fund industry has grown very rapidly and now has more than \$1,900 billion in assets invested in 7,200 funds.<sup>1</sup> This growth can be rationalized by the value added generated by hedge fund managers. For example, over the period 1994 to 2010, the Dow Jones Credit Suisse (DJCS) hedge fund index returned 9.4% annually, which outperformed the 8.0% total return on the S&P stock market index over the same period, but with half the volatility and very little systematic risk.

This value added can be explained by a number of factors. Hedge funds provide flexible investment opportunities, which include the ability to short securities, to use leverage, and to invest in derivatives. They are less regulated than publicly offered funds such as mutual funds. As a result, they have the ability to set performance fees, to impose lockup periods, and have limited reporting requirements. These performance fees create very strong financial incentives to perform.

These features generate superior performance but can also create concerns for investors. Performance fees are asymmetric, potentially creating a “gambling” incentive.<sup>2</sup> Hedge fund managers are generally secretive about their strategy and positions. They also have more latitude in setting their net asset value (NAV) than regulated entities, which may hide fraud or undue risk exposures that could lead to a blowup. Indeed, 2008 was a tumultuous year. Many investors were dissatisfied with the losses they suffered following the Lehman bankruptcy. Many hedge fund managers also unexpectedly suspended or restricted redemptions, which led investors to question whether the hedge

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<sup>1</sup> According to the HFR (2011) survey, excluding funds of funds to avoid double-counting.

<sup>2</sup> Goetzmann, Ingersoll, and Ross (1997) show analytically that when the incentive contract is out of the money, managers have a strong incentive to increase risk. Brown, Goetzmann and Park (2001), however, find that hedge fund managers do not behave as this simple theory would suggest because reputation also matters. In addition, Panageas and Westerfield (2009) argue that risk-seeking incentives are mitigated by long-term repeated contracting effects.

fund managers were acting in the best interests of investors. The year culminated with the revelation of the fraud perpetrated by Bernard Madoff, which led to reported losses of \$21 billion.<sup>3</sup>

As a result, investors have been pushing for more transparency for their hedge fund investments.<sup>4</sup> Position-level transparency requires full disclosure of all fund positions on a regular basis. Transparency is useful for two purposes. First, it makes it easier to monitor the underlying financial risks and the actions of the manager. Second, it allows risk measurement and aggregation across the entire portfolio. In principle, this should help alleviate agency problems between investors and portfolio managers.

Many hedge fund managers, however, fiercely resist offering transparency. Some fear that their trading strategies could be reverse-engineered from their positions, leading to a loss of competitive advantage (free-riding). Another argument is that position disclosures could lead to third-parties trading against the hedge fund (front-running). Thus, a potential disadvantage of transparency is that disclosure could be harmful to the manager's returns and hence to the fund's investors themselves.

The actual effect has not been ascertained systematically. This paper provides a direct test of this "cost of transparency" hypothesis. We examine a subsample of hedge fund managers that agree to provide a managed account (MAC). As the name indicates, MACs are customized investment portfolios dedicated to a particular client, or to an independent entity, who usually has title to the assets. The hedge fund manager is hired as the investment subadvisor and directs trades. Normally, MACs are held in custody with a firm that is independent of the hedge fund manager, which should prevent a Madoff-type fraud. In this setup, MACs offer full portfolio transparency. Because MACs are generally run *pari passu* with the main commingled hedge fund, they indirectly

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<sup>3</sup> "Picard says \$21.2 billion lost in Madoff scheme," Financial Times (October 28, 2009.)

<sup>4</sup> For instance, "CalPERS and others pressure hedge funds for more transparency," Wall Street Journal (February 5, 2010.)

reveal positions in the main fund to the investors in the separately managed accounts. Therefore, hedge fund managers that accept managed accounts do offer transparency, at least to some investors via the managed account.

We investigate whether this willingness to provide transparency is related to differences in the performance of hedge funds. Using the TASS database, we classify funds into a sample in which managers accept MACs and another in which managers do not accept MACs. Because the database does not report MAC returns, however, we only analyze returns for commingled funds. Thus, our study compares the performance of the commingled funds of managers that are willing to provide transparency versus those funds that do not. We find that the performance of the main commingled funds is actually slightly better for managers who provide transparency than for those who do not, although this difference is not significant.

We also examine whether managers that provide transparency are more or less likely to be involved with fraud later. We would expect that managers that accept the additional monitoring made possible by transparency would be less likely to commit fraud.<sup>5</sup> We cannot confirm this conjecture in the data, however, due to the small sample of fraud cases. Nevertheless, we do find that the duration of the fraud is longer by over 14 months on average for managers who do not provide transparency. This result is consistent with transparency providing faster detection of fraud, as well as fraud being opportunistic rather than premeditated for managers who provide transparency.

In addition, our setup allows for a direct test of the selection bias hypothesis. It is sometimes asserted that the very best hedge fund managers have all of the assets they need and do not need to offer transparency. To the extent that offering separately managed accounts entails any

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<sup>5</sup> One caveat is that a manager could choose to commit fraud in the main commingled fund (where there is no transparency) while avoiding fraud in the separately managed accounts (which provide transparency).

cost to these managers, whether from free-riding and front-running concerns or costs of administration of separate accounts, they should not need to offer separate accounts. If this were the case, the existence of separate accounts implies a selection bias in which the group of hedge fund managers offering MACs is of lower quality and should have lower performance.

We present the first direct empirical analysis of the selection bias hypothesis. We do so by examining funds that are closed to new investment, which by definition should be funds that have all of the assets they need. We find that a number of funds that are closed nonetheless provide MACs. While the funds that are closed perform better than those that are open, we find no significant differences in performance between closed funds that offer MACs and closed funds that do not.

Another selection bias concern is that managers who do not offer MACs have illiquid investment strategies, so providing transparency would be quite costly for them. We address this by controlling for whether the fund has a lockup for investors. The argument is that managers with illiquid investments will offer their investors less liquidity in their funds. After controlling for investor liquidity, we still find no evidence of better performance by funds that do not offer MACs. In short, we find no support for the selection bias hypothesis.

It is important to note that transparency can be defined with different degrees. The most benign form is provided to an independent third-party, such as a fund administrator or fund of funds, that is subject to non-disclosure agreements and that is not authorized to trade. Another form is where transparency is provided solely to investors in the fund. These forms of transparency can be called “private,” and are least likely to cause issues for the hedge fund manager. On the other hand, hedge fund managers may have to reveal positions to regulators, who may disclose the information to the public. This form of “public” transparency may very well be harmful to the

hedge fund performance but is not examined here. So, our results only apply to “private” transparency.

This paper is structured as follows. We provide an overview of managed accounts and review the pros and cons of transparency in Section 2. Section 3 then describes the data and empirical setup. Section 4 discusses the results. Concluding comments are contained in Section 5.

## **2. Managed Accounts and the Transparency Debate**

### *2.1 Managed Accounts*

In the traditional commingled hedge fund structure, the hedge fund manager is the investment advisor and has full control of the assets. Investors rarely have access to position information for the fund in which they invest. As limited partners, they are subjected to the actions of other investors. During the 2008 crisis, for instance, many investors panicked and redeemed their funds, which forced other investors in the same pool to realize losses on the securities sold and sometimes left them with less liquid assets. Partly as a response, many hedge fund managers suspended or restricted redemptions (by raising “gates”). Less liquid assets were sometimes placed into “side pockets”, which are new classes of shares which the investors cannot redeem. Managers also have control over the valuation of the positions, which can raise issues of conflicts of interests.

As a result of dissatisfaction with the traditional hedge fund structure, interest in managed accounts has grown sharply in recent years.<sup>6</sup> Moody’s (2010) provides a good introduction for hedge fund investing through managed accounts. Because the industry is organized as private

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<sup>6</sup> On the long-only side, however, large U.S. institutional investors have long been users of managed accounts. Moody’s (2010) reports that \$41 billion or 2% of the hedge fund industry is through major MAC platforms. Prequin (2010) found in a survey of 50 institutional investors that 16% have allocated capital through MACs and that 23% are planning to do so. Morgan Stanley (2010) reports that the median size of MACs on its prime brokerage operation has fluctuated between \$10 and \$20 million during 2005 to 2009.

placements, information about actual arrangements is confidential and can differ across managers and investors.

Even so, common features emerge. MACs can take different forms but in all cases, non-investment activities are controlled by the investor or its agent.<sup>7</sup> The hedge fund manager is then hired as an investment subadvisor and directs trading but has otherwise not control over the assets. This separates the valuation and governance functions from the hedge fund manager. For example, if the investor no longer trusts the hedge fund manager, the assets can be immediately reassigned to another manager without being stuck behind a lengthy redemption notice period.

Thus, compared to conventional commingled funds, MACs offer notable advantages. In addition, the investor can create customized accounts. Suppose for instance that the investor realizes that the manager is particularly skilled at stock selection in a particular sector. An account can then be customized with investment guidelines restricting the trading to this particular sector. The hedge fund manager compensation can be also customized, with clawbacks and hurdles more commonly used than in commingled funds. More importantly, the risk of the MAC portfolio can be actively monitored and managed, for instance with an active overlay on the portfolio.

On the other hand, MACs do not benefit from the economies of scale of large commingled funds.<sup>8</sup> Legal, audit, directors, custody, and other administrative costs may be proportionately higher than in the commingled fund.<sup>9</sup> MACs also create additional organizational costs for the hedge fund manager, who needs to split trades between different funds, track their performance

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<sup>7</sup> MACs can take several forms. In a “principal” or “separate” MAC, the investor such as a pension fund is the direct owner of the single account. In a “principal-intermediated” MAC, a fund of funds supervises several funds for various clients, and is generally the Investment Manager. The fund of funds aggregates assets across the investor portfolio and allocates capital across funds. In a “platform” MAC, another independent third party, such as a bank, offers standardized products to its clients. The client then decides where to invest. See Tomlinson (2009).

<sup>8</sup> In addition, MACs transfer operational risk from the hedge fund manager to the asset owner or platform manager. Leverage or short positions also create unlimited liability unless the assets are held in a special purpose vehicle.

<sup>9</sup> On the other hand, hedge fund managers sometimes charge additional costs such as software development or Bloomberg access to their commingled fund instead of absorbing them in the manager fees. MACs allow better control of the total costs charged to the investor.

separately, and potentially deal with other prime broker and administrators. For these costs to be acceptable, the account cannot be too small. For example, an annual cost of \$50,000 is high for a \$10 million account, but amounts to just 5bp for a \$100 million account.

Finally, for our purpose, MACs offer full transparency to their investors. As a result, they indirectly reveal positions in the main fund when the MAC fund is run “pari passu” (i.e., on an equal footing). The majority of MACs are run pari passu.<sup>10</sup> Indeed the MAC field in the TASS database pertains to a particular fund, and not the management company, which may have multiple funds. Some management companies accept MACs for some of their funds but not for others. So, it must mean that the hedge fund manager accepts MACs that follow the investment strategy of the advertised fund. When run pari passu, returns on the managed account and commingled fund must track each other closely. This explains why investors closely monitor the tracking error volatility. As an example, the median tracking error volatility for a sample of MACs was 0.75% per annum, which is very low.<sup>11</sup> In general, discrepancies in performance can be traced to differences in investment guidelines or to the effect of inflows and outflows in either fund. Thus, hedge fund managers that accept MACs automatically create some private transparency. Hedge fund managers typically try to protect themselves by non-disclosure agreements, which prevent the investor from disseminating knowledge about the portfolio positions, from using this information for their own trading activities, and from reverse-engineering the strategy.

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<sup>10</sup> Pearce (2009), for example, notes that “talking to my clients, dealing with tracking error is probably the single thing that takes most of their time on managed accounts.”

<sup>11</sup> This represents a panel of 16 long/short equity and equity market neutral funds run pari passu with the commingled funds over the period 2007 to 2010. Returns are measured over the longest histories, leaving aside the first and last month which reflect a ramping up and down of positions. In addition, the median performance difference was 0.34%. Thus, these MAC funds had slightly better performance than the commingled funds, which partly reflects lower management fees in this case.

## 2.2 Pros and Cons of Transparency

The primary benefit of transparency is that it helps mitigate the agency problems between fund investors and portfolio managers. Frequent disclosures allow investors to monitor portfolio managers more effectively. This is particularly an issue with hedge funds, given that portfolio managers have wider latitude in setting NAVs, have very few investment restrictions, and can trade actively.

Position-level transparency allows **risk monitoring** of the fund. For instance, the investor can check the accuracy of prices used to set NAVs. Closer monitoring of the fund can detect changes in the risk profile of the fund or style drift. This monitoring can also change the behavior of the portfolio manager. It can help to decrease the probability of fraud and blowups.<sup>12</sup> Ge and Zheng (2006), for example, find that mutual funds with a higher likelihood of committing fraud disclose holdings less frequently, when allowed to do so.

Disclosure is also important for **risk aggregation**. The investor should know how the fund interacts with other assets in the portfolio. Whether the fund has a positive or negative correlation with the rest of the portfolio affects the total portfolio risk. Given that hedge fund managers change positions quickly, it is essential to measure exposures from current positions.

Investors have become more insistent on the need for disclosure. For example, the President's Working Group (PWG) released a “best practices” report for hedge fund investments in 2008. The investor committee (PWG, 2008a) states, “A key concern for investors is that hedge funds' lack of transparency may lead to unexpected risk exposures. ... Hedge fund managers

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<sup>12</sup> Christory, et al. (2006) examine the characteristics of hedge funds that blowup. Over the period 1994 to 2004, they report an average probability of default of 0.30% per annum. Most of the blowups observed are attributed to operational problems such as fraud, which can be minimized through the due diligence process and continuous monitoring. Investment losses account for only a quarter of cases.

typically cite commercial reasons for providing little transparency. There are sometimes legitimate competitive reasons for keeping information confidential, but often there are not.”

On the other hand, a separate report was issued by asset managers (PWG, 2008b). The term “transparency” is not even mentioned once in this report, as opposed to “confidential” which is mentioned eight times. Thus, most hedge fund managers fiercely resist providing transparency.

Some fear that a trading strategy could be reverse-engineered from the positions, leading to a loss of competitive advantage. This is the **free-riding** problem. This externality limits the rewards for investing intellectual capital into identifying promising investments. Alternatively, other investors could mimic, with a lag, the positions of the best performing funds. Notably, Frank et al. (2004) demonstrate that copycat portfolios that mimic the disclosed positions of mutual funds generate static returns similar to the returns of the actual funds. Wermers, Yao, and Zhao (2007) also find substantial excess returns, even beyond the 60-day reporting requirement lag.

Another argument is that widespread position disclosures could lead to third-party trading against the hedge fund, which is called **front-running**. This is particularly a problem when the fund is still building up positions, or with the possibility of short squeezes. In both cases, the argument is that disclosure could be harmful to the fund’s investors.

The free-riding problem, however, is not obvious. After all, portfolio managers should be happy to have other investors buy the long stocks in their funds after they have purchased it. This should create upward pressure on prices that should help the performance of the original long positions. The problem, however, occurs with future flows. If a fund receives additional inflows that must be invested in the same position, the fund may have to pay a higher price if others have been free-riding. Conversely, outflows require forced sales of existing positions. Outsiders anticipating these flows may have been selling in advance of the fund, pushing prices down and

creating losses for the fund. As an illustration, the managers of the hedge fund Long-Term Capital Management complained that others preyed upon them:

“... Wall Street firms began to get out in front of the fund's positions: if a trader elsewhere knew Long-Term Capital owned a lot of interest-rate swaps, for instance, he sold interest-rate swaps, and further weakened Long-Term's hand. The idea was that if you put enough pressure on Long-Term Capital, Long-Term Capital would be forced to sell in a panic and you would reap the profits.”<sup>13</sup>

For mutual funds, forecasting these flows is facilitated by the availability of daily cash flow estimates. Coval and Stafford (2007) document that investors who trade against constrained mutual funds earn significant returns. Such costs are part of overall flow-related costs, which Edelen (1999) estimates at 1.4 percent per annum. Overall, however, the validity of the free-riding or front-running arguments heavily depends on the ability of other investors to forecast future purchases or sales. It also depends on the size of the fund's position relative to normal trading volume.

Most previous studies focus on mutual funds, which have extensive disclosure requirements. Since May 2004, quarterly disclosures have been required for all the positions of each fund, with a lag of 60 calendar days. A more recent literature examines public disclosures of hedge fund portfolios. Under Section 13(f) of the Securities Exchange Act as amended in 1975, managers with total assets over \$100 million are required to make quarterly holding disclosures of their long securities positions within 45 calendar days.

Brunnermeier and Nagel (2004) use this 13(f) information to draw inferences on hedge fund behavior during the technology bubble. Griffin and Xu (2007) find that hedge funds have high turnover and that performance based on static positions is only slightly better than for mutual funds. In contrast, Aragon and Martin (2009) report a significant relationship between option positions and subsequent returns. A notable limitation of these papers, however, is that they can only focus on

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<sup>13</sup> Lewis (1999).

long positions. Short positions are not included. In addition, disclosures are required at the asset manager level instead of the fund level. This mixes positions for different types of hedge funds run by the same asset manager, and can even mix positions in mutual funds and hedge funds, if under the same asset manager. So, the information is less precise than for mutual funds.

More recently, regulators have examined public disclosure requirements for short positions. During the 2008 crisis, many regulators imposed public disclosure requirements for short positions above a certain threshold. For instance, the UK rules require investors to disclose publicly any short interest above 0.25 percent of the market capitalization of equities on a list of financial firms.<sup>14</sup>

Such requirements have raised serious concerns because short sales are more risky than long trades. Short sellers are potentially exposed to unlimited losses if a stock price moves against them and they are unable to cover a short position in a timely fashion. In addition, they can be subject to short squeezes.<sup>15</sup> The U.S. does not require public disclosure of short positions.

Finally, it is important to note that, in the context of MACs, transparency is limited to clients only. Since clients themselves would bear the costs of front-running or free-riding impacting their returns, the incentives to engage in such behavior would be limited, in turn limiting the costs of providing transparency. Further, in most cases, non-disclosure agreements should prevent the dissemination of information.<sup>16</sup> As a result, such private disclosures should be much less harmful than mandated public disclosures. In this situation, the arguments that hedge fund managers advance against disclosure seemingly become less relevant. Nonetheless, the majority of hedge fund managers do not offer MACs, and many resist any level of transparency, even to clients.

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<sup>14</sup> See FSA (2009).

<sup>15</sup> In addition to the direct effect on investors, Wyman (2010) shows that stocks subject to these rules have experienced a loss of liquidity, as measured by lower trading volume, higher bid-ask spread, and higher volatility. Thus such rules negatively affect market efficiency.

<sup>16</sup> The same would hold true for other parties with access to position information, including administrators, prime brokers, and any third-party risk measurement services.

These managers certainly perceive the costs of transparency to be high, presumably due to the risk of a strategy being reverse-engineered and then leaked.

This unwillingness to provide transparency leads to the “selection bias” argument. To the extent that managers perceive transparency to be costly, only managers who have high benefits from transparency will offer it. These managers are most likely in need of fund inflows, which implies lower quality managers with worse performance. Thus transparency itself may not be costly in terms of returns—it may simply be a useful marker of poor managers. Whether this alleged selection bias argument actually shows up in the data is an open, and hitherto unexplored, issue.

### **3. Data and Setup**

#### *3.1 Hedge Fund Database*

We use the April 2010 version of the Tremont Advisory Shareholders Services (TASS) hedge fund database, extracting data from January 1994 to December 2009. The TASS database covers close to one-half of the estimated total number of hedge funds in existence and includes both live and dead funds. The database provides total monthly returns net of management and incentive fees, as well as assets under management (AUM), for commingled funds.

Following the usual selection criteria used in the literature, we discard funds that (1) are not in U.S. dollars, (2) are funds of funds, (3) report returns on non-monthly basis, and (4) report returns gross instead of net. We also eliminate duplicate funds, defined as funds from the same management company with a return correlation greater than 0.99. This happens, for example, with master-feeder structures with an offshore (“limited”) and onshore (“LP”) fund. To eliminate backfilled data, we truncate returns before the “date added to the database” field. Aggarwal and

Jorion (2010a) show that discarding the first 12 months of returns does not fully address the backfill issue. After this process, approximately 40% of the original funds remain in our sample.

The TASS database contains a field called “Accepts Managed Accounts.” This field has not been explored in previous empirical research.<sup>17</sup> Like all descriptive fields in the TASS database, there is no time series for this variable. We verified, however, that this variable is highly persistent. In a spot check with the 2002 version of the database, only 104 out of 3305 common funds have changed their status.

Willingness to offer MACs can be viewed as a signal that the hedge fund manager offers transparency. This is only a proxy because commercial databases do not have a field that records whether transparency is allowed.<sup>18</sup>

Table 1 provides descriptive statistics. There are 1462 funds in our sample that accept managed accounts, or 29.4% of our overall sample. The median minimum account size is \$5 million. Of the funds that accept managed accounts, only 30.4% are still alive, while of the funds that do not accept managed accounts, 36.6% are still alive. This is a reflection of the fact that funds started earlier in our sample (in the 1990s) were more likely to accept managed accounts than were funds started later in our sample (in the latter part of the 2000s). Funds started earlier are also more likely to be in the dead fund database.

In terms of distribution by sector, global macro funds and managed futures funds are relatively more likely to offer managed accounts, perhaps because these funds trade in more liquid markets and can more easily replicate positions across multiple accounts. By contrast, emerging markets funds, long-short equity funds, and multi-strategy funds are relatively less likely to offer managed accounts. This may also be a function of relative timing, as there were relatively more

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<sup>17</sup> The only exception is Brown et al. (2009), who use this variable as a control but do not comment on it.

<sup>18</sup> In theory, our signal could be noisy because some managers could be offering transparency without accepting MACs. In practice, given the widespread reluctance to offer transparency, this is not very likely.

managed futures funds earlier in our sample, when there were also relatively more funds that accepted managed accounts.<sup>19</sup>

Two other characteristics stand out. Funds that accept managed accounts are generally smaller than funds that do not accept managed accounts, perhaps because smaller funds seeking additional assets need to offer transparency in order to gather those assets. Funds that accept managed accounts also are older than funds that do not, consistent with the fact that funds that offered managed accounts were relatively more prevalent in the 1990s than in the 2000s. Otherwise, there is little difference in terms of management and incentive fees.

### *3.2 Fraud and SEC Enforcement Actions*

We also examine whether transparency is related to fraud. The Securities and Exchange Commission (SEC) is authorized to bring civil enforcement actions against asset managers for violations of the securities laws. We hand collect actions against hedge fund managers from September 1995 to December 2009 from the SEC's web site. This yields a total sample of actions against 213 hedge funds run by 184 different investment advisers/fund management companies (some fund management companies ran multiple fraudulent funds). Cross-referencing with the TASS database gives a total of 44 funds for which managers were charged.<sup>20</sup>

While this number seems large, a recent Securities and Exchange Commission (2003) report states that "There is no evidence indicating that hedge funds or their advisers engage disproportionately in fraudulent activity" (p.73). The SEC also notes that the total number of hedge

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<sup>19</sup> In terms of total assets, 48% of funds were in the global macro and managed futures categories at the end of 1993. The fraction fell to 19% at the end of 1999 and was at 24% at the end of 2009.

<sup>20</sup> Bollen and Pool (2009) follow the same approach and end up with a sample of 93 funds in the CISDM and TASS databases. Ge and Zheng (2006) examine a sample of mutual funds for which the fund family is under SEC investigation.

fund fraud cases seems to have grown in recent years, simply due to the sheer growth of the industry.

Other work makes inference about actual fraud from the ADV forms, which Registered Investment Advisors must file annually with the SEC.<sup>21</sup> This form discloses conflicts of interest, regulatory violations, and criminal charges against the asset manager. The problem with this approach, however, is that these forms are not updated in the worst fraud cases, when the investment manager goes out of business.<sup>22</sup>

## **4. Empirical findings**

### *4.1 Performance*

We use several measures of fund performance. The first measure is the raw return. The advantage of this method is that it does not require estimation of any parameter. However, it does not control for risk nor market movements. The second measure adjusts for the TASS classification into 10 sectors. For each sector, Dow Jones Credit Suisse (DJCS) provides an index based on an asset-weighted portfolio of funds using the TASS database. These DJCS indexes include funds with at least one year of track record, with at least \$10 million in assets, and with audited financial statements.<sup>23</sup> These indexes should be largely free from backfill and survivorship biases, because they are constructed “live,” or from contemporaneous data. Indeed, these indexes are not recomputed to include previous returns and do include funds that may die later.<sup>24</sup>

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<sup>21</sup> See Dimmock and Gerken (2009).

<sup>22</sup> For instance, the last ADV form for Bernie Madoff was filed on January 2008 and was basically uninformative. Madoff admitted to fraud in December 2008.

<sup>23</sup> After April 2005, the minimum size went up to \$50 million.

<sup>24</sup> For funds in the index, the index provider attempts to track the last return of a fund that dies. Otherwise, the last return is estimated. For example, in the case of funds that were Madoff victims, the last return was set at -100%, which led to a return of -40% for the equity market neutral index for November 2008.

We use these sector returns to adjust fund returns for sector effects. Abnormal, style-adjusted, returns are defined as  $\alpha$  and are measured as:

$$\alpha_{it} = R_{it} - \beta_{it} R_{St} , \quad (1)$$

where  $R_{it}$  is the return on fund  $i$  at time  $t$ ,  $R_{St}$  is the return on the sector  $S$  to which fund  $i$  belongs, and  $\beta_{it}$  is the sector exposure of fund  $i$ , computed over the calendar year, or less if the series are shorter. This approach is simple to implement and is relatively robust because it requires estimation of one parameter only.

Table 2 presents the annual returns, betas, and number of funds by year for funds that accept managed accounts and funds that do not accept managed accounts. Annual returns are computed as an equally-weighted average of fund returns. We also report summary statistics for value-weighted returns, where fund returns in each month are weighted by fund size in that month. Because fund size (assets under management) is missing for a number of fund-months, the number of observations is reduced for this analysis.

Between 1994 and 2000, more funds offered managed accounts than did not. Starting in 2001, this pattern reversed strongly. Perhaps surprisingly, over the entire sample period, funds that accepted managed accounts had higher returns (7.61% annually) than did funds that did not accept managed accounts (6.74%).<sup>25</sup> This difference is not statistically significant, however. This difference also shows up in subperiods 1994 to 2000 and 2001 to 2009. Interestingly, funds that accept managed accounts performed much less badly in 2008 than did funds that do not accept managed accounts. The difference is large, at 822 basis points (bp). Using value-weighted returns,

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<sup>25</sup> The table shows that the number of funds in the sample increases by a factor of 100 between 1994 and 2009. To reflect the increased precision in later years, we report weighted least-squares estimates of averages and test statistics, using as weights the average number of funds in each year.

we find that funds that accept managed accounts outperform funds that do not accept managed accounts by 68bp, although this difference is not statistically significant either.

Further, funds that accept managed accounts have slightly lower betas with respect to their style indices. This suggests that managers that accept managed accounts are not generating higher returns by simply leveraging up their positions relative to their stated styles. However, this leaves open the possibility that funds that accept managed accounts have simply happened to congregate in styles that performed relatively well.

To examine this possibility, Table 3 reports returns by sector.<sup>26</sup> Six of the nine sectors show better performance by funds that accept managed accounts. Recall that managed futures funds and global macro funds were relatively more likely to accept managed accounts. While managed futures funds that accept MACs do better than those that do not, the opposite is true for the global macro funds. Also recall that emerging markets funds, long-short equity funds, and multi-strategy funds were relatively less likely to accept managed accounts. While emerging markets funds that do not accept managed accounts do better than those that do not, the opposite is true for long-short equity funds and multi-strategy funds. In sum, we find no systematic patterns that explain the difference in returns between funds that accept managed accounts and those that do not.

Our previous results have focused on raw returns, without providing any risk adjustment. Table 4 presents abnormal, sector-adjusted returns. Note that the time series and cross-sectional differences are much less than before, which shows that the sector adjustment is effective in controlling for common patterns in returns. Consistent with our previous results, funds that accept managed accounts perform slightly better than funds that do not accept managed accounts. Over the entire sample, however, the difference is small, at 20bp. As before, the difference is present in the subperiods 1994 to 2000 and 2001 to 2009. We see a notable difference in 2008, at 324bp,

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<sup>26</sup> We omit the “short bias” sector due to the small number of funds.

although this is much less than with raw returns. When we value-weight abnormal returns (alphas), we find that funds that do not accept MACs now outperform funds that do by 72 basis points per year, but this difference is again not statistically significant.

The previous approach adjusted for sector or style, but did not directly adjust for risk factors. It also relied on a fund classification into sectors, which may be subjective. To address this issue, we use a variant of the Fung and Hsieh (2004) seven-factor model. The factors are: the S&P 500 equity return, an equity size factor, a bond market factor, a credit spread factor, and three trend-following factors (bond, currency, and commodity). We augment the seven factors with a short-term interest rate and a stock index lookback straddle from Fung and Hsieh (2001). To be included, a fund must have at least 18 months of return observations. We use a fund's entire history to estimate the regression. Table 5 reports results for annual abnormal returns net of the risk-free rate. As before, the difference between funds that do and do not accept managed accounts is small and insignificant. In contrast with the previous equally-weighted results, funds that do not accept managed account have slightly superior performance, by 57bp. The difference, however, is randomly spread across years, without apparent systematic pattern. With value weighting, the difference is 62bp, again not statistically significant.

#### *4.2 Selection Bias*

The usual selection bias argument is that lower quality managers are the ones that offer managed accounts. Our previous analysis suggests that this is not the case—managers offering managed accounts perform slightly better than the ones who do not offer managed accounts. Selection bias, however, could still be an issue if the high quality managers who offer transparency are not actually investable. Indeed, high-quality managers that have attracted all of the assets they wish to manage are generally closed to new investment.

More precisely, the selection bias hypothesis is that managers that are open to new investment and accept managed accounts will perform substantially worse than managers that are open but do not accept managed accounts. Given that our previous results show that managers with managed accounts perform slightly better than managers without managed accounts, selection bias could only occur if managers that are closed to new investment and accept managed accounts perform dramatically better than managers that are closed but do not accept managed accounts.<sup>27</sup> Further, as a practical matter, investors are primarily concerned with funds in which they can invest, making this analysis potentially more relevant than one that does not condition on whether the fund is open to new investors.

To address the selection bias hypothesis, we perform a four-way split of our data, looking at managers that are open or closed to new investment, and that accept or do not accept managed accounts. Table 6 reports the results. Consistent with prior research, when we equally weight fund returns, we find that closed funds have significantly higher abnormal returns than open funds. This is not entirely astonishing because the currently closed status is correlated with previous performance. Interestingly, whether the fund is open or closed, we find that funds that offer managed accounts perform somewhat better than funds that do not offer managed accounts, although the differences are not statistically significant. For closed funds, the difference is 148bp; for open funds, this is 8bp. When we value weight fund returns, closed funds continue to outperform open funds, and open funds that offer managed accounts marginally outperform open funds that do not offer managed accounts. However, closed funds that do not offer managed accounts now outperform closed funds that do offer managed accounts by 310bp, which is

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<sup>27</sup> A fund can be closed to new investors yet can accept managed accounts if it already has separately managed accounts.

borderline significant. This result is driven by a few large hedge funds that show substantial abnormal returns and are given large weights.

The previous table attempts to mitigate the issue of selection bias by adjusting for sectors and fund betas. Even so, this may not fully address variations among individual funds within sectors. Within the long-short equity sector, for example, funds that deal in less liquid stocks or take large concentrated positions may be more concerned about providing transparency. To address these concerns, we also provide results of a regression with additional controls.

$$\alpha_{it} = \gamma_0 + \gamma_1 I_{MAC} + \gamma_2 I_{CLOSED} + \gamma_3 I_{LIQ} + \gamma_4 \ln(AUM_{it}) + \varepsilon_{it} \quad (2)$$

This is a pooled cross-sectional and time-series (or unbalanced panel) regression of sector-adjusted abnormal returns on a managed account dummy variable and controls including whether the fund is open or closed, liquidity, and size. Liquidity is measured as the lockup dummy variable; size is taken as the log of AUM. In this regression, the coefficient  $\gamma_1$  on the MAC dummy variable indicates whether managed accounts are associated with a systematically different return. The regression is shown in Table 7. As before, the managed account variable is small, positive, and not statistically significant.<sup>28</sup> Closed funds perform significantly better than open funds, and larger funds perform better than smaller funds. Crucially, even after controlling for investor liquidity, we find no evidence that funds that offer managed accounts perform worse than funds that do not.

Overall, these results offer no support for the selection bias hypothesis. Within the group of presumed high quality managers (i.e., closed to new investors), a willingness to offer transparency is not associated with lower returns on an equally-weighted basis, and the same is true within the group of presumed lower quality managers. Even after controlling for investor liquidity, funds

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<sup>28</sup> Note that no attempt is made to adjust for clustering at the fund level. Such adjustment would reduce significance. Given that the coefficient  $\gamma_1$  is not significant anyway, the conclusions are not affected.

offering managed accounts perform no worse (indeed perform better) than funds that do not offer managed accounts.

### *4.3 Risk*

As a next step in our analysis, we further explore the sources of differences between funds that offer transparency and those that do not. One possibility is that greater transparency prevents extreme blowups or instances of hedge fund fraud.

We do find that situations of extreme losses (defined as those greater than 90% in a month) are concentrated in funds that do not accept managed accounts. There are seven such instances for funds that do not accept managed accounts, while there is only one such instance for funds that accept managed accounts. Interestingly, of the seven funds that suffered extreme losses and did not accept managed accounts, five were funds that invested with Bernard Madoff.

### *4.4 Fraud Prediction*

This leads to the question of whether transparency can be used as a signal to weed out managers that are more likely to commit fraud. Bollen and Pool (2009a) attempt to relate the occurrence of fraud to the behavior of reported hedge fund returns. Bollen and Pool (2009b), in particular, find that the distribution of monthly hedge fund returns presents a discontinuity around zero, which they interpret as a “widespread phenomenon” of fund managers manipulating asset values to avoid showing losses. They also use other indicators, such as serial correlation. Overall, however, they conclude that focusing on hedge fund returns “is not useful for predicting fraud.”

Instead, we consider funds that have been investigated by the SEC for fraud. Table 8 provides summary data on hedge fund fraud cases. We find 44 funds investigated for fraud in our sample. Of these, 11 accept managed accounts and 33 do not. The fraction of frauds in the sample

that accept managed accounts is  $11/1462=0.75\%$ . The fraction in the sample that does not accept managed accounts is  $33/3518=0.94\%$ , which is higher. Because the number of fraud cases in our sample is small, however, we cannot draw statistical inferences about the relative probabilities of fraud.

It is hard to imagine how a hedge fund manager would purposefully engage in fraud and at the same time open himself to the scrutiny of transparency. Indeed, Madoff misappropriated investors' assets and did not directly offer managed accounts.<sup>29</sup>

On the other hand, fraud sometimes involves overvaluation or misrepresentation of returns. This usually occurs after a large loss, which the hedge fund manager attempts to minimize. Because fraud in this case is opportunistic rather than planned, the manager may have offered transparency. The implication is that fraud should be of shorter duration for managers that offer managed accounts, either due to the nature of the fraud or to the fact that transparency allows fraud to be detected earlier. In either case, transparency should be beneficial in limiting the size of losses.

To test this hypothesis, we examine the SEC complaints to determine how long the fraud lasted. Indeed, we find that the length of the fraud is longer for funds without managed accounts (1435 days) than for funds that accept managed accounts (999 days). This finding is consistent with the hypothesis that fraud is detected earlier when transparency is offered.

## **5. Conclusion**

This is the first paper that directly tests the cost of transparency. More precisely, we examine whether a willingness to offer transparency to investors is beneficial or costly in terms of

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<sup>29</sup> Several of the funds in the table that experienced fraud in 2008 are Madoff-related (including Fairfield, Kingate, and Rye). These funds did not offer managed accounts, as reported in TASS. On the other hand, investors in some funds, such as LuxAlpha, thought that they had adequate segregation between the investment advisor and the custodian. In fact, the custodian delegated to the custody of the assets to an entity controlled by Madoff. See Clauss et al. (2009).

hedge fund returns. We measure a fund's willingness to offer transparency by whether it accepts separately managed accounts. Here, transparency is private because it is limited to investors in the fund.

Overall, we find no evidence that a willingness to offer transparency harms fund returns. Funds that offer separately managed accounts generate somewhat higher returns, albeit not statistically significantly so. This absence of significance holds using raw returns, abnormal returns, alphas from a multiple-factor model, as well as across different hedge fund sectors. This result also holds regardless of whether the fund is open or closed to new investment. This provides no support for concerns that managers offering transparency suffer from selection bias. On balance, we find no evidence that the costs of transparency outweigh the benefits.

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**Table 1**  
**Descriptive Characteristics for Funds Where Managers Accept or not Managed Accounts**

This table describes the number and characteristics of hedge funds sorted on the variable indicating whether the manager accepts or not Managed Accounts. Characteristics are equally-weighted. For the size calculation, observations with assets under management less than \$10,000 are excluded. Fraction is the proportion of total funds that offer Managed Accounts.

	<b>Panel A: Accepts Managed Accounts</b>	<b>Panel B: Does Not Accept Managed Accounts</b>	<b>Fraction that Accepts: A/(A+B)</b>
<b>Total number of funds:</b>	1462	3518	29%
Live	444	1289	26%
Dead	1018	2229	31%
<b>Number by sector:</b>			
Convertible Arbitrage	53	110	33%
Fixed Income Arbitrage	76	124	38%
Equity Market Neutral	123	226	35%
Long-Short Equity	482	1442	25%
Emerging Markets	147	435	25%
Dedicated Short Bias	11	26	30%
Event-Driven	141	339	29%
Global Macro	127	205	38%
Managed Futures	232	263	47%
Multi-Strategy	70	348	17%
<b>Characteristics:</b>			
Size (average over life)	\$95,872,424	\$146,994,507	
Age since inception (years)	6.4	5.6	
Management fee	1.52%	1.47%	
Incentive fee	18.95%	18.14%	
Median minimum MAC size	\$5,000,000		

**Table 2**  
**Performance of Funds by Manager Accepting or not Managed Accounts: Raw Returns**

This table presents the performance of hedge fund portfolios sorted on the variable indicating whether the manager accepts or not Managed Accounts. Portfolios are constructed as equal-weighted averages of fund raw returns during each month. Returns are in percent. Style beta is the portfolio beta to the sector return. The computation for the average return and t-statistic uses the number of funds in each year as weights. Value-weighted averages construct monthly returns using fund AUM as weights and then take the arithmetic average of annual returns.

Year	<b>Panel A: Accepts Managed Accounts</b>			<b>Panel B: Does Not Accept Managed Accounts</b>		
	Annual Return	Style Beta	No. of Funds	Annual Return	Style Beta	No. of Funds
1994	-0.58	0.59	5	-10.60	0.93	15
1995	7.22	0.37	17	11.34	0.30	20
1996	12.44	0.85	102	13.25	0.84	83
1997	14.73	0.73	196	12.20	0.75	135
1998	-2.05	0.59	274	-4.44	0.71	194
1999	22.16	0.74	350	26.08	0.79	245
2000	-0.32	0.88	374	4.58	0.94	274
2001	2.04	1.38	319	4.07	1.15	474
2002	1.70	0.93	404	0.97	0.97	732
2003	18.44	0.86	407	16.91	1.00	870
2004	7.10	0.86	439	7.81	0.95	986
2005	8.44	0.86	470	8.66	0.85	1159
2006	11.39	0.84	540	12.25	0.87	1328
2007	11.23	0.90	549	11.13	0.84	1391
2008	-12.16	0.83	522	-20.37	0.88	1533
2009	16.85	0.82	493	19.09	0.99	1493
Equal-Weighted Average Return Difference (t-statistic)	<b>7.61</b> <b>0.87</b> 1.00	0.86		<b>6.74</b>	0.91	
Value-Weighted Average Return Difference (t-statistic)	<b>6.78</b> <b>0.68</b> 0.47			<b>6.09</b>		

**Table 3**  
**Performance of Funds by Sector: Annual Returns**

This table presents the performance of hedge fund portfolios sorted on the variable indicating whether the manager accepts or not Managed Accounts, classified by sector. The computation for the average return uses the number of funds in each year as weights. Returns are in percent. Period is 1994 to 2009.

<b>Sector</b>	<b>Panel A: Accepts Managed Accounts</b>	<b>Panel B: Does Not Accept Managed Accounts</b>
Convertible Arbitrage	7.01	2.98
Fixed Income Arbitrage	5.49	5.25
Equity Market Neutral	4.42	3.90
Long-Short Equity	8.04	6.80
Emerging Markets	8.84	10.12
Event-Driven	6.69	6.86
Global Macro	6.62	8.33
Managed Futures	9.44	6.70
Multi-Strategy	7.12	5.50

**Table 4**  
**Performance of Funds by Manager Accepting or not Managed Accounts: Sector-Adjusted Alphas**

This table presents the performance of hedge fund portfolios sorted on the variable indicating whether the manager accepts or not Managed Accounts. Portfolios are constructed as equal-weighted averages of fund alphas during each month. Alpha, or abnormal return, is measured as  $\alpha_{it} = R_{it} - \beta_i R_{St}$ , where  $R_S$  is the style index return and beta is estimated over the calendar year. Alpha and its standard error are annualized, in percent. The computation for the average return and t-statistic uses the number of funds in each year as weights.

Year	Panel A: Accepts Managed Accounts			Panel B: Does Not Accept Managed Accounts		
	Abnormal Annual Returns	Std. Error	No. of Funds	Abnormal Annual Returns	Std. Error	No. of Funds
1994	-7.95	4.63	5	-21.20	4.99	15
1995	5.39	5.95	17	9.61	4.48	20
1996	-2.06	2.55	102	-1.31	2.50	83
1997	1.26	1.93	196	-2.17	2.45	135
1998	0.02	2.60	274	-0.70	1.78	194
1999	1.78	2.15	350	4.38	2.09	245
2000	-5.18	2.98	374	-1.09	2.76	274
2001	0.19	3.21	319	3.78	3.27	474
2002	-2.41	1.85	404	0.01	2.11	732
2003	2.09	1.86	407	1.14	1.51	870
2004	-2.05	1.03	439	-1.82	0.80	986
2005	1.34	1.09	470	1.10	1.11	1159
2006	0.36	1.05	540	-0.21	0.79	1328
2007	0.75	0.78	549	0.27	1.00	1391
2008	0.24	2.24	522	-3.00	1.71	1533
2009	2.43	1.94	493	0.49	1.79	1493
Equal-Weighted Average Alpha Difference (t-statistic)	<b>0.07</b> <b>0.20</b> 0.37	1.82		<b>-0.13</b>	1.51	
Value-Weighted Average Alpha Difference (t-statistic)	-0.19 -0.72 -1.15			0.53		

**Table 5****Performance of Funds by Manager Accepting or not Managed Accounts: Fung-Hsieh Alphas**

This table presents the performance of hedge fund portfolios sorted on the variable indicating whether the manager accepts or not Managed Accounts. Portfolios are constructed as equal-weighted averages of fund alphas during each month. Alpha, or abnormal return, is measured from the Fung-Hsieh (2004) factor model, which includes the S&P 500 equity return, an equity size factor, a bond market factor, a credit spread factor, three trend-following factors (bond, currency, and commodity), and two lookback straddles (short-term interest rate and stock index). Alpha and its standard error are annualized, in percent. The computation for the average return and t-statistic uses the number of funds in each year as weights.

Year	<b>Panel A: Accepts Managed Accounts</b>			<b>Panel B: Does Not Accept Managed Accounts</b>		
	Abnormal Annual Returns	Std. Error	No. of Funds	Abnormal Annual Returns	Std. Error	No. of Funds
1994	7.29	5.34	5	4.57	6.15	10
1995	5.04	4.56	13	2.55	4.24	18
1996	8.59	2.49	89	4.00	2.13	71
1997	-0.18	2.72	185	-3.28	2.53	129
1998	-5.42	2.32	257	-6.59	2.64	188
1999	10.76	2.79	339	11.78	4.02	238
2000	2.86	3.17	366	5.83	2.99	268
2001	3.74	2.85	331	5.75	2.13	439
2002	6.13	2.78	390	5.42	1.67	684
2003	7.24	2.75	404	6.67	1.78	855
2004	2.97	2.33	429	3.18	1.84	976
2005	5.45	2.62	462	5.66	2.90	1134
2006	3.82	2.63	530	4.94	3.00	1299
2007	9.74	0.95	542	11.01	1.02	1362
2008	6.53	4.24	520	4.61	4.19	1466
2009	13.28	2.42	484	11.07	2.58	1420
Equal-Weighted Average Alpha Difference (t-statistic)	<b>5.91</b> <b>-0.57</b> -1.40	2.65		<b>6.48</b>	2.52	
Value-Weighted Average Alpha Difference (t-statistic)	4.88 -0.62 -0.65			5.50		

**Table 6**  
**Performance of Funds by Manager Accepting or not Managed Accounts and Open or Closed to New Investment**

This table presents the performance of hedge fund portfolios sorted on two variables indicating whether the manager accepts or not Managed Accounts and whether the fund is open or closed to new investment. In Panels A, B, C, D, and E, portfolios are constructed as equal-weighted averages of style-adjusted (abnormal) returns during each month. The computation for the average abnormal annual return and t-statistic uses the number of funds in each year as weights. In Panel F, differences are reported for value-weighted averages of style-adjusted returns, where the weights are fund assets under management. Returns are in percent.

Year	<b>Panel A: Closed Funds that Accept Managed Accounts</b>			<b>Panel B: Closed Funds Without Managed Accounts</b>		
	Abnormal Annual Returns	Std. Error	No. of Funds	Abnormal Annual Returns	Std. Error	No. of Funds
1994	-15.32	5.07	1	-33.67	5.78	11
1995	31.61	40.25	2	11.10	9.46	10
1996	-11.52	12.39	11	9.42	7.21	15
1997	12.53	4.27	20	2.77	3.36	21
1998	0.18	2.53	30	3.63	4.40	26
1999	7.42	4.85	37	11.31	1.90	31
2000	5.84	3.07	47	3.51	3.04	39
2001	1.14	2.47	40	3.12	1.65	84
2002	3.29	2.22	58	3.76	1.61	126
2003	4.26	1.31	52	0.64	1.54	147
2004	3.22	1.61	50	0.17	1.14	137
2005	4.47	1.82	47	1.87	1.35	149
2006	-2.15	1.22	50	-1.00	1.01	147
2007	2.68	2.41	44	1.41	1.76	131
2008	3.17	3.69	32	-2.19	2.23	108
2009	0.63	2.22	30	6.41	2.14	85
Equal-Weighted Average Alpha	<b>3.06</b>	2.76		<b>1.58</b>	1.86	

Year	Panel C: Open Funds that Accept Managed Accounts			Panel D: Open Funds Without Managed Accounts		
	Abnormal Annual Returns	Std. Error	No. of Funds	Abnormal Annual Returns	Std. Error	No. of Funds
1994	-4.57	6.23	4	6.64	6.92	4
1995	2.08	2.26	15	10.36	2.55	10
1996	-1.12	2.15	91	-3.40	2.01	68
1997	-0.06	1.79	176	-2.98	2.65	114
1998	-0.05	2.84	244	-1.38	1.94	168
1999	1.06	1.96	313	3.29	2.32	214
2000	-6.85	3.27	327	-1.83	2.99	235
2001	0.05	3.52	279	3.95	3.68	390
2002	-3.31	1.97	346	-0.73	2.42	606
2003	1.80	1.98	355	1.24	1.57	723
2004	-2.68	1.08	389	-2.14	0.79	849
2005	1.00	1.10	423	0.99	1.20	1010
2006	0.61	1.08	490	-0.13	0.80	1181
2007	0.60	0.76	505	0.16	1.01	1260
2008	0.06	2.30	490	-3.07	1.82	1425
2009	2.54	1.98	463	0.13	1.84	1408
Equal-Weighted Average Alpha	<b>-0.27</b>	1.86		<b>-0.35</b>	1.59	

**Panel E:**

Difference (A-B)	<b>1.48</b>
(t-statistic)	(1.23)
Difference (A-C)	<b>3.33</b>
(t-statistic)	(2.64)

Difference (C-D)	<b>0.08</b>
(t-statistic)	(0.13)
Difference (B-D)	<b>1.93</b>
(t-statistic)	(2.36)

**Panel F:**

	A. Closed Funds that Accept MACs	B. Closed Funds Without MACs	C. Open Funds that Accept MACs	D. Open Funds Without MACs
Value-Weighted Average Alpha	<b>0.66</b>	<b>3.76</b>	<b>-0.33</b>	<b>-0.45</b>

Difference (A-B)	<b>-3.10</b>
(t-statistic)	(1.73)
Difference (A-C)	<b>0.99</b>
(t-statistic)	(0.61)

Difference (C-D)	<b>0.12</b>
(t-statistic)	(0.13)
Difference (B-D)	<b>4.21</b>
(t-statistic)	(3.37)

**Table 7**  
**Pooled Cross-Sectional Regression of Fund Returns**

This table presents the results of a pooled cross-sectional regression of individual fund style-adjusted alphas

$$\alpha_{it} = \gamma_0 + \gamma_1 I_{MAC} + \gamma_2 I_{CLOSED} + \gamma_3 I_{LIQ} + \gamma_4 \ln(AUM_{it}) + \varepsilon_{it}$$

where  $I_{MAC}$  is a dummy variable set to 1 if the manager accepts a managed account for this fund. The controls include a dummy variable  $I_{CLOSED}$  for whether the fund is closed, a liquidity variable  $I_{LIQ}$  set to 1 if there is a lockup, and size taken as the log of AUM. Standard errors are between parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

	Fund alphas
<b>Independent Variables:</b>	
Constant	-0.182 (0.111)
Managed Accounts	0.032 (0.024)
Closed	0.233*** (0.037)
Liquidity	0.024 (0.024)
Size, ln(AUM)	0.012* (0.007)
Adj. R-squared	0.0003
N	167,503

**Table 8**  
**SEC Fraud Investigations by Manager Accepting or not Managed Accounts**

This table presents the number of fraud cases as reported on the SEC's web sites by year for funds where the manager accepts or not Managed Accounts. The average length of days is between the inception date of the fund and the date of the announcement of the SEC investigation.

	<b>Panel A: Accepts Managed Accounts</b>		<b>Panel B: Does Not Accept Managed Accounts</b>	
<b>Year Fraud Ended</b>	<b>Number of Funds</b>	<b>Average Length of Fraud (Days)</b>	<b>Number of Funds</b>	<b>Average Length of Fraud (Days)</b>
1998			1	272
1999				
2000	2	1841		
2001	2	486	3	252
2002	4	195	4	1197
2003	1	1328	5	982
2004			1	121
2005	1	3164	7	779
2006			1	1137
2007	1	1062	1	1386
2008			7	3672
2009			3	943
<b>Total</b>	<b>11</b>		<b>33</b>	
<b>Average</b>		999		1435