

# Side-by-Side Management of Hedge Funds and Mutual Funds\*

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## Abstract

We examine situations where the same fund manager simultaneously manages mutual funds and hedge funds. We refer to this as side-by-side management. We document 112 such cases involving 189 hedge funds and 304 mutual funds. The 155 side-by-side managed mutual funds in our sample in existence in 2004 managed a total of \$123 billion, raising significant concerns for regulators. Proponents of this practice argue that it is essential to hire and retain star performers. Detractors argue that the temptation for abuse is high and the practice should be banned. Our analysis based on various performance metrics shows that side-by-side *mutual fund* managers significantly *outperform* peer funds, consistent with this privilege being granted primarily to star performers. Interestingly, side-by-side *hedge fund* managers are at best on par with their style category peers, casting further doubt on the idea that conflicts of interest undermine mutual fund investors. Thus, we find no evidence of welfare loss for mutual fund investors due to exploitation of conflicts of interest.

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# Side-by-Side Management of Hedge Funds and Mutual Funds

## 1. Introduction

Recently, much attention has been paid by the general public and regulators to the conflicts of interest in the money management industry. Among the concerns of the commissioners at the SEC and other regulators is the growing practice of having mutual fund managers simultaneously running hedge funds known as *side-by-side management*. The nature of the outcome of these policy discussions among regulators and legislators could greatly influence the structure of the multi-trillion dollar investment management industry. This issue also continues to be the focus of considerable attention in the popular press (See, for example, Laise (2006a, b), Shari (2007), and Strauss (2007)). Though anecdotal evidence of side-by-side arrangements exists and concerns of assorted abuses grow<sup>1</sup>, there is limited empirical evidence to inform the debate. In this paper, we document the extent of side-by-side relationships, and test for any evidence of relationship abuses by side-by-side managers.

Why is side-by-side management drawing so much attention? The possibilities for conflicts of interest are extensive in such arrangements given the typical compensation structures of mutual and hedge fund managers. Mutual fund managers are usually paid a small percentage of assets under management, e.g., 1%, while hedge fund managers get a similar percentage of assets under management *plus* a hefty performance bonus, e.g., 20% of the profits. Thus, side-by-side managers that can opportunistically

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<sup>1</sup> Eliot Spitzer and others have brought several suits in which they claimed that fund companies allowed short-term trading in mutual funds (market timing) in return for the promise of long-term investments in their hedge funds. For example, RS Emerging Growth Fund's manager James Callinan is being investigated for allowing trading in and out of his fund. Mr. Callinan also manages hedge funds. Moreover, John Carifa and Michael Laughlin of Alliance Capital Management face similar charges.

benefit their hedge fund(s) at the expense of their mutual fund(s) might be tempted to do so, though managers' career concerns may be a mitigating force (see Chevalier and Ellison, 1999).

In spite of the abundant attention, there is at best a limited understanding about the effects of side-by-side management and little consensus on what to do about it. Proposed actions on the part of regulators and legislators run the gamut from simply forcing disclosure of side-by-side arrangements<sup>2</sup> to an outright banning of the practice. However, many in the money management industry contend that without the potential rewards of running a lucrative hedge fund(s) dangled in front of them, it will be extremely difficult to attract and retain the best portfolio managers.<sup>3</sup> In fact, there has been an exodus of talent from the mutual fund industry in search of more freedom and bigger paychecks in the hedge fund industry (See Arvedlund, 2002). In this paper, in addition to documenting the extent of side-by-side relationships among money managers we look to inform the debate by examining the welfare consequences of side-by-side management for investors.

We construct a unique dataset by combining the TASS hedge fund database from Tremont with the mutual fund database from CRSP, looking for instances of the same manager appearing in both databases. We identify 112 side-by-side managers who manage a total of 304 mutual funds (affiliated with 107 different mutual fund families) and 189 hedge funds simultaneously, suggesting that the practice of side-by-side management is quite widespread. Moreover, as of 2004, the 155 mutual funds with side-

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<sup>2</sup> The current arrangement forces fund companies to divulge side-by-side relationships in the fund's Statement of Additional Information (SAI).

<sup>3</sup> Ted Truscott of American Express is quoted as saying "To attract the best and brightest, we have to offer the opportunity for side-by-side management" (see Atlas 2004).

by-side arrangements at that time had \$123 billion under management, while mutual fund families of the side-by-side funds had over \$2.2 trillion under management.

Having identified a set of side-by-side managers, we go on to test for evidence of conflicts of interest and/or star power (star performers being allowed to run hedge funds) in the money management business. We compare the performance of side-by-side mutual funds against that of peer mutual funds chosen on the basis of style. If conflicts of interest are pushing side-by-side managers to exploit mutual fund investors to benefit hedge fund investors, we should observe that the open-end mutual funds involved in side-by-side arrangements significantly under-perform their peers. However, we find no evidence of underperformance on the part of side-by-side managers. On the contrary, our tests consistently show that side-by-side managers *outperform* their peers in the mutual fund industry in terms of Sharpe ratios and 4-factor alphas. The side-by-side managers are able to generate 4-factor alphas that exceed those of their peers by about 13 basis points per month or more than 1.5% per year and highly statistically significant. It is also interesting to note that this superior performance is net of expenses that are significantly higher at side-by-side mutual funds.

We also consider the possibility that, though side-by-side managers outperform their peers, they still strategically allocate returns to the detriment of mutual fund investors. To this end we compare the performance of side-by-side managed mutual funds before and after the side-by-side relationship is in place and we find no decline in performance following the instigation of a side-by-side relationship. But how do our side-by-side managers perform as hedge fund managers?

We compare the performance of side-by-side hedge funds against that of peer hedge funds chosen on the basis of primary strategy. We find no evidence of out-performance on the part of side-by-side managers. Instead, our tests show that side-by-side hedge fund managers under-perform their hedge fund peers in terms of Sharpe ratios, while their 6-factor alphas (see Agarwal and Naik, 2004) are lower though insignificantly different from those generated by their primary strategy cohorts.

The combination of at best comparable performance on the hedge fund side and out-performance on the mutual fund side is inconsistent with exploitation of conflicts of interest. Rather it suggests that the curtailment of side-by-side management could be quite costly to mutual fund investors. All of our results are confirmed in pooled time-series cross-sectional regressions with alphas or Sharpe ratios as the dependent variable, and other robustness checks.

The paper closest in spirit to ours is Cici et al. (2006). That paper also considers the issue of side-by-side management of mutual funds and hedge funds. However, there is a key difference in our papers: sample construction. While we look for instances of the same *person* managing mutual funds and hedge funds, Cici et al. (2006) find instances of the same *firm* managing both types of funds. Additionally, we consider the performance of side-by-side managers on both the mutual and hedge fund sides, while Cici et al. (2006) only consider mutual fund performance. We feel that our approach has two advantages. First, the potential conflicts of interest in a side-by-side relationship are more acute when the same individual (or group) manages both pools of money. Second, some side-by-side relationships involve the same individual but their respective mutual and

hedge fund companies are different (at least in name if not in legal status).<sup>4</sup> Finally, it is likely that the sample of Cici et al. includes many instances where the management of the mutual fund(s) and the hedge fund(s) does not involve the same person/people. In these cases, it is the fund company's incentives rather than the managers' incentives that drive decisions. Such cases are more akin to conflicts of interest within fund families of the type analyzed by Gaspar, Massa, and Matos (2006).

Interestingly, our results are different from those of Cici et al. (2006): while we show that side-by-side managers routinely *outperform* their mutual fund peers, Cici et al. (2006) find the opposite. As a robustness check, we compare the performance of side-by-side fund families by including all funds in the fund complexes other than those managed by the side-by-side managers. We find the performance of fund families engaged in side-by-side management to be on par with their peers.

There is one other paper that considers the simultaneous management of mutual funds and hedge funds: Agarwal, Boyson, and Naik (2006). That paper studies the performance of so-called "hedged mutual funds", i.e., mutual funds that are allowed to pursue hedge fund-type strategies such as long-short equity. They find that the performance of hedged mutual funds is poor, *except* in those cases where the hedged mutual funds are offered by companies that also offer hedge funds, consistent with our results.

Our work relates to the broader literature on compensation, incentives, and principal-agent problems. The literature discussing the need to link pay to performance is

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<sup>4</sup> Consider the case of Kevin Landis who has been identified in the press as a side-by-side manager (Atlas 2004). He manages mutual funds for First Hand and hedge funds for Silicon Capital Management. Approximately half of our side-by-side managers fall into this category.

vast and dates back to Jensen and Meckling (1976).<sup>5</sup> However, due to the incompleteness of contracts, incentive provision is imperfect and may lead to distortions as agents try to “game” the evaluation procedure to their advantage. Several studies in the mutual fund literature have uncovered evidence of such gaming activities that adversely affect investors. These conflicts of interest can be either at the fund level or the fund family level.<sup>6</sup> One way in which this distortion is mitigated is through career or reputation concerns (see Holmstrom, 1999; and Holmstrom and Ricart i Costa, 1986). Chevalier and Ellison (1999) show that the relationship between past performance and the likelihood of being fired is much stronger for younger mutual fund managers while Brown, Goetzmann and Park (2001) provide evidence that career concerns discourage hedge fund managers from taking excessive risk.

Our paper makes several contributions. We study a unique setting where the same agent has simultaneously contracted with two different principals and the agent’s performance in each case is readily observable. In spite of the fact that it is well documented that managers respond to incentives, we find no evidence that side-by-side managers strategically shift returns from mutual funds to hedge funds. It is likely that managers fear a loss to reputation and/or that mutual fund companies take sufficient steps to deter strategic allocation of returns. In a recent paper, Brown, Goetzmann, Liang and Schwarz (2006) also document some evidence supporting the theory that related entities and overlapping services have the potential to provide benefits to clients.

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<sup>5</sup> See also Holmstrom and Milgrom (1987), Jensen and Murphy (1990), Hall and Liebman (1998), and Guay (1999), among others.

<sup>6</sup> Brown, Harlow, and Starks (1996), Chevalier and Ellison (1997), and Kacperczyk, Sialm and Zheng (2006) consider distortions at the fund level, while Nanda, Wang and Zheng (2004), Gaspar, Massa and Matos (2006), and Reuter (2006) look at family level gaming. We discuss each of these in more detail in Section 2.

We also contribute to the literature on delegated asset management by focusing on a previously un-explored segment of the money management industry: managers who simultaneously manage hedge funds and mutual funds. To our knowledge, we are the first paper to identify these managers and document their performance. Our evidence supports the idea that the privilege of running a hedge fund is primarily granted to the most skilled mutual fund managers. However, it is less clear how well these managers' skills translate to the world of hedge fund investing: our side-by-side managers' hedge funds somewhat under-perform their primary strategy peers. This evidence of specialized skills in the money management industry is also novel.

The rest of our paper is organized as follows: we review the literature and policy debate in Section 2, Section 3 contains details on our sample selection and tests, Section 4 describes and interprets our main performance results, and Section 5 concludes.

## **2. Background and Literature Review**

The tremendous surge in hedge fund assets of late (from \$400 billion to over \$1 trillion under management in the last 5 years) has drawn a lot of attention to this segment of the money management industry. Moreover, as concerns about conflicts of interest in the mutual fund industry have grown in recent years, hedge fund governance and regulation has also become of the subject of intense debate. The attention to hedge funds has accelerated with the acknowledgement that it is often hedge funds that benefit from late trading and market timing in mutual fund shares.

Congressman Richard H. Baker (R, LA), author of the Mutual Fund Transparency and Integrity Act, has been pushing the idea of banning the same manager from

simultaneously overseeing hedge funds and mutual funds. He has successfully pushed a bill through the House of Representatives that would prohibit such arrangements. The Senate, however, has yet to enact their version of such a bill.<sup>7</sup> Though the possibility for gamesmanship is clear, there are many proponents of allowing the same manager to simultaneously run both types of funds. For instance, Vanguard, the nation's second largest mutual fund company, has numerous such arrangements and doesn't see it as a problem if there is proper oversight.

In fact even mutual fund companies have quite divergent views on the practice of side-by-side management. Vanguard for one is a big proponent of the need to offer side-by-side management. It is little wonder since Vanguard out-sources a lot of its portfolio management to firms that also manage hedge funds. For example, Wellington Management Company, which manages the \$18.2 billion Vanguard Health Care Fund, also offers a health-care hedge fund managed by the same person (see Atlas, 2004). An outright ban of side-by-side management would decimate Vanguard. At the other extreme is Fidelity who manages all their funds in house and strictly forbids their portfolio managers from managing hedge funds.

Earlier papers have studied how incentives affect mutual fund managers' investment decisions. It is well documented in the literature that investors respond asymmetrically to the performance of a fund. A strongly performing fund attracts a disproportionate inflow of funds, relative to the cash outflow when performance is poor. This convex (call-option-like) response to fund performance suggests a disproportionate

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<sup>7</sup> Congressman Baker's bill is H.R. 2420. It was passed on November 19, 2003 and has 23 co-sponsors. The Senate has yet to pass a related bill, though S. 1822, S. 1971, S. 1958, and S. 2059 deal with related matters and are still pending. However, on April 8, 2006, Senator Shelby said he was inclined to let the

benefit to being a star performer. Chevalier and Ellison (1997) reveal that fund managers alter the riskiness of their portfolios at the end of the year in order to exploit the nonlinear shape of the flow-performance relation. Brown, Harlow and Starks (1996) show that managers of investment portfolios that are likely to be losers manipulate fund risk differently than those managing portfolios that are likely to be winners. This is attributed to the fact that managers' compensation is linked to relative performance. Khorana, Servaes, and Wedge (2007) show that portfolio manager ownership in their own funds has positive incentive effects. Finally, Kacperczyk, Sialm and Zheng (2006) propose a measure of mutual fund hidden costs and find evidence that mutual funds with lower hidden costs exhibit superior future performance and vice-versa.

Academic studies have also documented agency problems in mutual fund family operations. Nanda, Wang and Zheng (2004) examine the extent to which a fund's cash flows are affected by the stellar performance of other funds in its family. They show star performance results in greater cash inflow to other funds in its family. This induces lower ability families to pursue star creating strategies by increasing variation in investment strategies across funds. Khorana, Tufano, and Wedge (2007) and Mehran and Stulz (2007) emphasize that fund company incentives (and fund director incentives) may not be aligned with fund investor incentives. As a manifestation of this, Gaspar, Massa, and Matos (2006) document strategic cross-fund subsidization from high to low family value funds. Moreover, Reuter (2006) provides evidence that allocations of initial public offerings favor investors who direct brokerage business to lead underwriters. Goetzmann, Ivkovich, and Rouwenhorst (2001) and Zitzewitz (2003) illustrate that

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SEC handle these matters rather than introducing another bill. Finally, Susan Wyderko, Director of Investor Education at the SEC has also recently testified to congress on side-by-side management.

mutual funds are exposed to speculative traders by examining stale-price arbitrage losses for international mutual funds.

Career concerns may mitigate fund managers' incentive to game the evaluation procedure to their advantage. Chevalier and Ellison (1999) show that younger mutual fund managers with little track record have an incentive to herd so as not to be seen as poor performers. Brown, Goetzmann and Park (2001) provide evidence that career concerns discourage hedge fund managers from taking excessive risk.

Several recent papers have studied the performance of hedge funds and modeled the characteristics of hedge fund returns. These papers include Agarwal and Naik (2000 and 2004), Brown, Goetzmann and Ibbotson (1999), Brown and Goetzmann (2003), Brown, Goetzmann, Liang and Schwarz (2006), Fung and Hsieh (1997, 2000, 2001, 2002), Ibbotson and Chen (2006), Liang (1999, 2000), and Mitchell and Pulvino (2001). These papers show that hedge funds have performed well of late, but concerns abound that hedge funds tend to bear excessive amounts of left-tail risk. Agarwal and Naik (2004) show that this left tail risk is best modeled as exposure to index put options. We follow Agarwal and Naik (2004) and risk-adjust the hedge fund returns in our study using a 6-factor model that accounts for the left-tail risk inherent in many hedge fund strategies.

### **3. Data and Performance Measures**

#### ***3.1 Data Description***

We construct our sample of side-by-side managers by combining the CRSP mutual fund database with the TASS hedge fund database from Tremont. The CRSP Mutual Fund Database provides information on fund complex, monthly total net assets

(TNA), monthly returns, names and tenure of portfolio managers, and annual characteristics (e.g., expense ratio, 12b-1 fee, load, turnover ratio) for open-end mutual funds, including defunct funds. The TASS Database tracks information for 3,185 live hedge funds and 1,951 dead hedge funds as of year-end 2004. The database provides comprehensive information on monthly net asset value, fund inception date, start and end dates for performance report, investment objectives, names of portfolio managers, leverage, compensation structure, etc.

We merge the CRSP and TASS Databases by the names of portfolio managers. Specifically, we create lists of unique mutual fund manager names and hedge fund manager names, then combine them and look for matches. For each manager name that appears in both databases, we check the employment history with TASS to make sure that the two names indeed refer to the same manager. We then examine the tenure period for each manager as reported in the CRSP database and compare it to the hedge fund start and end dates. If there is an overlap between the two reported periods, then we classify the manager as a side-by-side manager, i.e., the manager simultaneously managed at least one mutual fund and at least one hedge fund for a certain period of time. Extensive cross-checking is then done with other sources, e.g., Morningstar, to ensure that we have in fact identified the same person managing both mutual funds and hedge funds. We then go back to each respective database and identify which mutual funds and which hedge funds she was ever a party to managing, either on her own or as part of a team and look for time overlaps.

A limitation of our approach is that the TASS dataset is not a comprehensive list of all hedge funds, nor would any other hedge fund dataset be a comprehensive list of all

hedge funds because such a dataset does not exist. Unlike with mutual funds where CRSP is a comprehensive database, hedge fund data is provided by several different organizations, the largest of which are TASS/Tremont (now owned by Lipper) and Hedge Fund Research (HFR). Each of these covers roughly 35-40% of the universe of hedge funds. Therefore, we acknowledge that we are not capturing the universe of side-by-side managers. Note that, under the assumption that side-by-side managed hedge funds not covered by TASS are not systematically different from those covered by TASS, this fact biases our tests against finding significant differences in performance between side-by-side managers and their peers, since our control pool will be “contaminated” with some side-by-side managers that have been incorrectly categorized as independent.

From the CRSP mutual fund database we identified 7,151 unique portfolio managers between 1980 and 2004, though roughly 1/3 of the 18,241 unique fund-manager pairs were listed as “team managed”.<sup>8</sup> From the TASS database we identified 3,648 unique hedge fund managers. By combining these databases and cross-checking potential matches we identified a total of 112 managers who were managing mutual funds and hedge funds simultaneously. These managers manage (or co-manage) a total of 304 mutual funds and 189 hedge funds simultaneously. Summary statistics on the distribution of funds among managers can be found in Panel A of Table 1. Mutual funds with several classes have had their classes combined into a single observation. The “typical” side-by-side manager simultaneously managed 1 hedge fund and 2 mutual

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<sup>8</sup> Massa, Reuter, and Zitzewitz (2006) and Baer, Kempf, and Ruenzi (2006) document a rise in the use of team management of mutual funds and explore its implications. In Section 4, as a robustness check, we exclude anonymous team-managed funds from the peer group and repeat the tests. The results remain similar.

funds, though we have managers that ran as many as 14 mutual funds or as many as 9 hedge funds.

Panel B documents the time trend of side-by-side management. The evidence suggests that most side-by-side arrangements were initiated recently (from 2000 to 2004). This four-year period saw 162 mutual funds and 105 hedge funds that started side-by-side management, accounting for more than 50% of our sample.

Panel C groups the side-by-side mutual funds by investment objectives. The investment objective with the largest number of side-by-side mutual funds is Equity Growth (58 funds), followed by Equity Small Companies (48 funds), Equity Mid-caps (25 funds), Equity Aggressive Growth (21 funds), Equity Growth and Income (20 funds), Equity International Growth (16 funds), and Equity Global Emerging Markets (11 funds). These seven objective categories account for 65% of side-by-side funds in our sample. It appears that side-by-side arrangements concentrate in growth oriented equity funds. Note that some managers work in more than one classification so the number of managers does not add to 112. In Panel D, we group the side-by-side hedge funds by TASS primary strategies. The primary strategy with the largest number of side-by-side hedge funds is Long/Short (116 funds), followed by Event Driven (15 funds), Equity Market Neutral (13 funds), Fund of Funds (11 funds), and Emerging Market (10 funds). These five primary categories account for almost 90% of side-by-side hedge funds in our sample.

Table 2 provides detailed summary statistics for the open-end mutual funds and hedge funds involved in side-by-side arrangements. As shown in Panel A, there are a total of 155 side-by-side mutual funds as of year-end 2004. The mean and median TNAs

for these funds are 793 million dollars and 136 million dollars respectively. The average turnover ratio is 107%. The average expense ratio is 1.68%, while the average management fee is 0.94%. This subset of funds had a total of \$123 billion under management as of the end of 2004. We also compare side-by-side managed mutual funds with their style peers along different dimensions. In comparing assets under management and turnover, we see that in some style categories the side-by-side funds are larger and/or have higher turnover, while in other style categories the reverse is true. The one dimension along which there is consistency is that side-by-side funds have unambiguously higher fees. This is true uniformly among all style categories. The differences are statistically significant and vary from 18 to 61 basis points.

Panel B of Table 2 reports the summary statistics for the 189 side-by-side hedge funds. The mean and median TNAs for these funds as of year-end 2004 are 159 million dollars and 55 million dollars respectively, much smaller than the average size of side-by-side mutual funds. The average management fee and incentive fee are 1.17% and 18% respectively. The average leverage ratio is about 60%. We then compare side-by-side managed hedge funds with their style peers for the top five TASS primary categories that observe the most side-by-side management. We notice that the average size (measured by TNA) of side-by-side hedge funds is smaller than their peers for all categories except Emerging Markets. The average management fees for side-by-side funds are lower in Long/Short, Event Driven and Market Neutral categories and higher in Fund of Funds and Emerging Market categories. Regarding incentive fees and leverage ratios, we observe that side-by-side funds tend to have lower averages in categories like Fund of Funds and Emerging Market.

### 3.2 Performance Measures

To evaluate mutual fund performance, we use various risk-adjustment methods to ensure that our empirical results are robust to different specifications of performance evaluation models. For example, we use the Sharpe ratio as well as the Carhart (1997) 4-factor abnormal returns as in the following equations:

$$\text{Sharpe ratio} = (R_{i,t} - R_{F,t}) / \text{Stdev}(R_{i,t}) \quad (1)$$

$$R_{i,t} - R_{F,t} = \alpha_i + \beta_{i,M}(R_{M,t} - R_{F,t}) + \beta_{i,S}SMB_t + \beta_{i,V}HML_t + \beta_{i,m}MOM_t + e_{i,t} \quad (2)$$

where  $R_{i,t} - R_{F,t}$  is the return of mutual fund  $i$  in month  $t$  minus the risk-free rate and  $R_{M,t} - R_{F,t}$ ,  $SMB$ , and  $HML$  are the standard Fama-French (1993) factors;  $MOM$  is the momentum factor of Carhart (1997). The intercept,  $\alpha_i$ , is the measure of abnormal performance: the so-called 4-factor alpha.

As for hedge fund performance, we also use the Sharpe ratio as defined in equation (1) to adjust for risk.<sup>9</sup> However, compared to mutual funds, hedge funds can follow much more dynamic trading strategies and can take short as well as long positions. As a result, hedge fund returns exhibit risk characteristics that are quite different from mutual fund returns (see Fund and Hsieh 1997). Recent research (Fung and Hsieh 2001, Mitchell and Pulvino 2001) has shown that the risk return characteristics are non-linear and exhibit option-like features. To address this issue, Agarwal and Naik (2004) expand the Carhart 4-factor model by adding several option-based risk factors. They find that the payoffs on a large number of equity-oriented hedge fund strategies are subject to large left tail risk and thus resemble those from writing a put option on the equity index.

We follow Agarwal and Naik (2004) and use the following 6-factor model to measure risk-adjusted returns for hedge funds<sup>10</sup>:

$$R_{i,t} - R_{F,t} = \alpha_i + \beta_{i,M}(R_{M,t} - R_{F,t}) + \beta_{i,S}SMB_t + \beta_{i,V}HML_t + \beta_{i,m}MOM_t + \beta_{i,ATM}ATM\_PUT + \beta_{i,OTM}OTM\_PUT + e_{i,t}. \quad (3)$$

Here,  $R_{i,t} - R_{F,t}$  is the return of hedge fund  $i$  in month  $t$  minus the risk-free rate and  $R_{M,t} - R_{F,t}$ ,  $SMB$ ,  $HML$ , and  $MOM$  are defined as in equation (2). The option risk factors  $ATM\_PUT$  and  $OTM\_PUT$  are the monthly returns in excess of the risk-free rate for the at-the-money put option on the S&P 500 index and the out-of-the-money put option on the S&P 500 index respectively. We obtain the monthly option pricing data from Option Metrics Database. Since the earliest reporting date for the database is January 1<sup>st</sup>, 1996, we have to limit the use of the 6-factor model to hedge fund returns in the post-1996 period.

#### 4. Performance of Side-by-Side Managed Funds

In this section, we provide detailed analysis on the welfare impact of side-by-side management. Section 4.1 investigates the risk-adjusted performance for mutual funds with side-by-side arrangements, while Section 4.2 examines the risk-adjusted performance for hedge funds with side-by-side arrangements. In Section 4.3, we conduct several robustness checks.

##### 4.1 Performance of Side-by-Side Mutual Funds

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<sup>9</sup> One problem with using Sharpe Ratios to measure hedge fund performance is that hedge funds have the ability to smooth their reported returns, making them appear less volatile than they are and thus biasing the Sharpe Ratio upward. See Getmansky, Lo, and Makarov (2003)

We begin by examining the risk-adjusted performance of open-end mutual funds during the period of side-by-side management. As discussed earlier, side-by-side managers may have the incentive to sacrifice the mutual fund side in an effort to give the hedge fund side extra benefits. If such conflicts of interest are widely exploited, we should observe that the mutual funds involved in side-by-side arrangements significantly under-perform their peers.

#### **4.1.1 Performance Relative to Peer Funds**

In our empirical analysis, we compare the risk-adjusted performance of each side-by-side mutual fund in our sample to the mean and median performance of a control group of funds that have the same investment objective but without the side-by-side arrangement. For both the side-by-side funds and the control group, we measure the risk-adjusted performance during the period of side-by-side management, which is defined as follows. For each side-by-side manager, we compare her starting date as a mutual fund manager to the earliest starting date of the hedge funds under her management. The later of the two dates is then used as the starting date for the side-by-side management period. Similarly, we identify her ending date as a mutual fund manager and compare it to the latest ending date of the hedge funds under her management. The earlier of the two dates is then defined as the ending date for the side-by-side management period.<sup>11</sup>

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<sup>10</sup> Since the two option factors are likely to be correlated, we also considered a 5-factor model containing only the out-of-the-money put option factor. The results are similar.

<sup>11</sup> Given that we do not have a time series of manager names for each hedge fund, we assume that a manager stays with a fund throughout its life, i.e., managers only change funds when funds are dissolved. Anecdotal evidence suggests that this is a reasonable assumption. Moreover, the team responsible for collecting and maintaining the TASS data concur with this assessment.

We use monthly return data from CRSP to calculate both the Sharpe ratio and the 4-factor adjusted return, based on Equations (1) and (2), respectively. We require that funds have at least 24 monthly returns available to be included in the analysis. The results are reported in Panel A of Table 3.

The evidence suggests that mutual funds that are part of a side-by-side arrangement actually significantly *outperform* their peers with the same investment objectives. The monthly Sharpe ratio for side-by-side funds is on average 0.139, compared to 0.108 for the control group. The average difference in monthly Sharpe ratio between the side-by-side funds and the control group is 0.032, and is statistically significant at the 1% level. Comparing median side-by-side fund Sharpe ratios with median Sharpe ratios among the fund's style category peers, the difference is 0.040, again significant at the 1% level.

Our results are similar using 4-factor adjusted returns. The monthly 4-factor alpha for side-by-side funds is on average 0.044%, not statistically different from zero. However, for the average fund with the same investment objective, the monthly 4-factor alpha is on average  $-0.087\%$ , and is statistically significant at the 1% level. This is consistent with the evidence documented in the mutual fund literature that actively managed funds significantly under-perform the benchmark after expenses are factored in (see Jensen, 1968; Malkiel 1995; Gruber 1996). The side-by-side funds on average outperform the control group by 0.132% per month (or 1.584% on an annual basis). This difference is statistically significant at the 1% level.

When comparing medians, the finding is similar with side-by-side funds outperforming their style peers by 0.080% per month (0.96% per year), significant at the

1% level. Keep in mind that these 4-factor alphas are net of expenses and expenses are significantly *higher* at side-by-side funds. These findings are consistent with the notion that side-by-side arrangements are given to fund managers with superior skills. Despite the well-documented underperformance by the average mutual fund, several recent papers, for example, Kacperczyk, Sialm and Zheng (2005), Mamaysky, Spiegel and Zhang (2006), Kacperczyk and Seru (2006), and Cremers and Petajisto (2006) document methods that are able to identify funds with superior performance.

To reduce the potential bias from omitting funds with a shorter side-by-side period (less than 24 months), we also examine the performance of side-by-side funds using a portfolio approach. For each month from January 1990 to December 2005, we construct two portfolios based on the presence/absence of a side-by-side arrangement and calculate equally weighted portfolio returns.<sup>12</sup> We then regress the monthly portfolio returns and the difference in monthly portfolio returns on four risk factors: Market, SMB, HML and MOM. The factor loadings and the alphas are reported in Panel B of Table 3.

The 4-factor adjusted alpha for the side-by-side portfolio is 0.072% but not statistically different from zero. In contrast, for the portfolio of funds without the side-by-side arrangement, the 4-factor adjusted alpha is -0.077% and statistically significant at the 10% level. Moreover, when we regress the difference in portfolio returns on the four factors, the alpha is 0.148% and significant at the 1% level. This portfolio is equivalent to a long position in side-by-side managed funds and a short position in style category peers. Consistent with the findings in Panel A, the portfolio approach confirms that side-by-side mutual funds significantly outperform their peers. Moreover, the factor loadings

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<sup>12</sup> We also construct value-weighted portfolios yielding similar results.

indicate that side-by-side managers are over-weighting small-cap stocks and value stocks relative to their style peers.

Finally, we examine the performance of side-by-side funds using a pooled time-series cross-sectional regression approach. This approach allows us to examine the effect of side-by-side management while controlling for the potential impact of other factors on fund performance, for example, time trends, style effects, fund size, portfolio turnover, expenses, etc. Specifically, we estimate the following pooled regression with clustered standard errors:

$$\begin{aligned} \alpha_{i,t} = & a + b_1(\text{Side-by-Side})_{i,t} + b_2(\text{Log}(TNA))_{i,t-1} + b_3(\text{Log}(\text{Family TNA}))_{i,t-1} \\ & + b_4(\text{Log}(\text{Age}))_{i,t-12} + b_5(\text{Total Load})_{i,t-12} + b_6(\text{Expenses})_{i,t-12} \\ & + b_7(\text{Turnover})_{i,t-12} + (\text{Time fixed effects}) + (\text{Style fixed effects}) + e_{it} \end{aligned} \quad (4)$$

The dependent variable here is the 4-factor adjusted return for fund  $i$  in month  $t$ . For each fund in any given month, we first estimate the factor loadings using the previous 36-month return data. The estimated factor loadings are then used to compute the abnormal return for the current month. The regressors include: an indicator variable that equals one if the fund is a side-by-side fund in the current month; the logarithm of fund TNA at the end of previous month; the logarithm of fund family TNA at the end of previous month; the logarithm of fund age in the previous year; the total load in the previous year; the expense ratio in the previous year; the turnover ratio in the previous year; the time fixed-effect, and the investment objective fixed-effect. The standard errors are adjusted for heteroskedasticity and are clustered by month (see Petersen 2006).

Table 4 presents the coefficient estimates for regression (4). The results buttress our earlier finding that side-by-side managers outperform their peers. After controlling for time and style fixed effects, the only regressors that are significant are the expense

ratio and the side-by-side dummy. Similar to Table 3, the point estimate suggests out-performance of 0.132% per month (1.584% per year). Note that the coefficient on expenses indicates that, in general, funds do not do particularly well at covering their expenses. This makes our side-by-side funds all the more impressive since they charge significantly higher fees than their peers.

Given that not all of our funds are equity funds, and given that the 4-factor alpha is not typically estimated for fixed income and other “non-equity” funds, we also include a separate regression that includes only equity funds. The results are very similar: side-by-side funds outperform by 0.151% per month (1.812% per year).

#### **4.1.2 Assessing the Impact of Introducing Side-by-Side Management**

Though our tests to this point consistently show out-performance on the part of side-by-side managers, it is conceivable that these managers are very talented and yet are still taking advantage of investors and exploiting existing conflicts of interest. A natural way to resolve the self selection problem is to compare the performance of side-by-side managers before and after the side-by-side relationship was in place. A significant drop in fund performance upon commencement of the side-by-side relationship, if there is any, would be consistent with the existence of conflicts of interest.

In Table 5, we use a multivariate regression approach similar to the approach in Table 4 to examine the performance difference between the side-by-side managers and their peers before and after the side-by-side arrangement. The side-by-side funds included in the regression consist of funds that switched to the side-by-side arrangement during the period from 1990 to 2005 and had both pre- and post-switch performance data available,

i.e., these managers began their careers as mutual fund managers and eventually became side-by-side managers. This constitutes about 80% of our side-by-side sample. This approach allows us to conduct an additional test on the effects of the introduction of a side-by-side arrangement by comparing pre-side-by-side alphas with side-by-side alphas.

Specifically, we estimate the following pooled time-series cross-sectional regression:

$$\begin{aligned}
\alpha_{i,t} = & a + b_0(\text{Pre-Side-by-Side})_{i,t} + b_1(\text{Side-by-Side})_{i,t} \\
& + b_2(\text{Log}(TNA))_{i,t-1} + b_3(\text{Log}(\text{Family TNA}))_{i,t-1} \\
& + b_4(\text{Log}(\text{Age}))_{i,t-12} + b_5(\text{Total Load})_{i,t-12} + b_6(\text{Expenses})_{i,t-12} \\
& + b_7(\text{Turnover})_{i,t-12} + (\text{Time fixed effects}) + (\text{Style fixed effects}) + e_{it}
\end{aligned} \tag{5}$$

Here, the (Pre-Side-by-Side) indicator equals one if the fund was managed by the side-by-side manager prior to her taking on the task of managing a hedge fund. All other variables are defined as in regression (4). The standard errors are adjusted for heteroskedasticity and are clustered by month (see Petersen, 2006).

The regression results presented in Table 5 suggest that side-by-side managed mutual funds significantly outperform their peers during periods both before and after the commencement of the side-by-side arrangement.<sup>13</sup> The coefficient estimates for the Pre-Side-by-Side and Side-by-Side indicators are 0.124% per month and 0.123% per month, respectively. The F-statistic testing the difference between the two coefficients is not significant (P-value = 0.99). This result indicates no decline in fund performance after the side-by-side relationship takes place. Thus, we find no evidence that the side-by-side relationship is detrimental to the performance of mutual fund managers. This finding is

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<sup>13</sup> We also ran this regression using the methodology of Fama and MacBeth (1973) including lagged 4-factor alpha as a regressor. The results were similar.

consistent with the argument that money management firms use this arrangement to retain their best people, i.e., their star performers.

We also estimate a separate regression that includes only equity funds. The results are very similar: side-by-side managed funds significantly outperform their peers both before and after the commencement of side-by-side arrangement. The coefficient estimate for the Side-by-Side indicator (0.145% per month) is in fact higher than that for the Pre-Side-by-Side indicator (0.105% per month), although the difference is not statistically significant (P-value = 0.62).

As an alternative test of the effect of introducing a side-by-side arrangement, we develop a procedure that is analogous to the matching procedures commonly used in the corporate finance literature to examine abnormal accounting performance surrounding events such as mergers, share repurchases, and security issuance (see, for example, Barber and Lyon, 1996; Nohel and Tarhan, 1998; and Lie, 2001). Specifically, for each of the side-by-side managed mutual funds, we identify all mutual funds with the same investment objective but without the side-by-side arrangement. We first rank these funds based on risk-adjusted performance and sort them into quartiles. The risk-adjusted performance is measured during the same pre-side-by-side period as the side-by-side fund in question. We then rank these funds based on TNA at the beginning of the side-by-side period and sort them into quartiles. The matched funds are then identified as funds that fall into the same quartile in both risk-adjusted performance and fund size. Finally, we compare the performance of side-by-side funds to the performance of the matched funds during the side-by-side periods.<sup>14</sup> The matching procedure reduces the

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<sup>14</sup> Alternatively, we match each side-by-side fund with the style peer having the closest risk-adjusted performance in the pre-side-by-side period. The results (not reported) are similar.

side-by-side sample to 65 mutual funds. Based on 4-factor alphas, side-by-side managed mutual funds outperform the matched funds at the 10% significance level. This result is not reported in a separate table but is available upon request. Hence, after controlling for managerial ability, we find no evidence of a significant performance drop following the commencement of a side-by-side arrangement.

With \$123 billion under management at year-end 2004, our estimates suggest that the side-by-side managers in our sample earned an extra \$2 billion *annually* for their investors over what they would have earned investing in the average fund in their style category. This is clearly economically significant.<sup>15</sup> Despite the potential conflicts of interest inherent in a side-by-side arrangement, fund managers' fear of reputation loss and/or fund families' preventive steps may have deterred strategic allocation of returns from mutual funds to hedge funds.

#### **4.2 Performance of Side-by-Side Hedge Funds**

Next we explore the performance of hedge funds with side-by-side arrangements. We conduct similar performance tests for the hedge fund side as those described in Section 4.1 for the mutual fund side, with appropriate methodological adjustments. If the side-by-side arrangement provides strong incentives for fund managers to favor hedge fund investors at the expense of mutual fund investors, we would expect that the hedge funds involved in the side-by-side arrangement significantly outperform their peers. However, another important factor that may affect the performance result is the ability of

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<sup>15</sup> Based on the results in Tables 3 and 4, the side-by-side mutual funds on average outperform their peers by 1.584% on an annual basis. Multiplying this average outperformance by the \$123 billion assets under side-by-side management at year-end 2004 suggests that the side-by-side managers in our sample earned an extra \$2 billion annually for their investors. This could well be an under-estimate as we acknowledge that

side-by-side managers relative to their peers in the hedge fund industry. Specifically, the skill sets of these two types of managers may differ and may not be transferable (See Arvedlund, 2002).

#### **4.2.1 Performance relative to Peer Funds**

For each hedge fund with a side-by-side arrangement, we compute the risk-adjusted return during the side-by-side period and compare it to the mean and median risk-adjusted return for a control group of funds during the same time span. The control group has the same TASS primary strategy category as the side-by-side funds but their managers do not simultaneously manage mutual funds.<sup>16</sup> We require funds to have at least 24 months of return data available in the TASS database to be included in the analysis. This requirement leaves us with 156 hedge funds with side-by-side arrangements. We use both the Sharpe ratio and the 6-factor adjusted alpha (as defined in equation (3)) to measure risk-adjusted performance.

As shown in Panel A of Table 6, side-by-side managed hedge funds underperform their peers. When Sharpe ratios are used, the average underperformance is 0.054 per month and is statistically significant at the 1% level. Interestingly, though side-by-side hedge funds have Sharpe Ratios that far exceed what they can generate on the mutual fund side, their hedge fund strategy peers perform much better, which leads to the given under-performance. When 6-factor alphas are used, the performance difference has the same negative sign but is no longer statistically significant.

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we are significantly under-estimating the number of side-by-side managers given we only have a partial universe of hedge fund managers.

<sup>16</sup> Note that while there are 192 mutual fund style categories, there are only 12 primary strategy categories in the Tremont database.

Another approach to evaluate performance differences is to construct portfolios. For each month from January 1996 to December 2005, we construct two portfolios based on the presence/absence of side-by-side arrangement and calculate equally weighted portfolio returns. We then regress the monthly portfolio returns and the difference in portfolio returns on the six risk factors: Market, SMB, HML, MOM, ATM\_PUT, and OTM\_PUT. We focus on the portfolio performance for the post-1996 period due to the limitation of data availability for the option-based risk factors.

The portfolio results are reported in Panel B of Table 6. The 6-factor alpha for the side-by-side portfolio is not statistically different from zero. By contrast, the 6-factor alpha for the no-side-by-side portfolio is 0.352% per month and is statistically significant at the 1% level. Again, we find no evidence of outperformance on the part of side-by-side managed hedge funds.

It is also of interest to see that the factor loadings differ for side-by-side funds and their peers. Notice the loading on the market portfolio factor. We should expect this to be smaller for hedge funds than for mutual funds since hedge funds tend to take significant short positions (and it is in fact smaller when compared to comparable numbers for mutual funds reported in Panel B of Table 3). However, the market portfolio loading for the side-by-side hedge funds is close to 0.50, while the comparable figure among their primary strategy peers is under 0.30. This suggests that the side-by-side hedge funds have significantly fewer short positions than their peers.

#### **4.2.2 Performance Test in A Multivariate Setting**

Similar to the test in Section 4.1.2, we compare the performance of side-by-side hedge funds to their peers. This approach allows us to control for other factors that might affect hedge fund performance.

Specifically, we estimate the following pooled time-series cross-sectional regression with clustered standard errors:

$$\begin{aligned} \alpha_{i,t} = & a + b_1(\text{Side-by-Side})_{i,t} + b_2(\text{Log}(TNA))_{i,t-1} + b_3(\text{Log}(Age))_{i,t-12} \\ & + b_4(\text{Management fee})_i + b_5(\text{Incentive fee})_i + b_6(\text{Average leverage ratio})_i \\ & + b_7(\text{Lock-up period})_i + b_8(\text{Personal Capital})_i \\ & + (\text{Time fixed effects}) + (\text{Style fixed effects}) + e_{it}. \end{aligned} \quad (6)$$

The dependent variable is the 6-factor adjusted alpha for fund  $i$  in month  $t$ . For each fund in any given month, we first estimate the factor loadings using the previous 36-month return data. The estimated factor loadings are then used to compute the abnormal return for the current month. The independent variables include: an indicator variable that equals one if the fund is a side-by-side managed fund in the current month; the logarithm of fund TNA at the end of previous month; the logarithm of fund age in the previous year; the management fee; the incentive fee; the average leverage ratio during the fund's life; the lockup period; an indicator variable that equals one if the fund manager invests personal capital in the fund; the time fixed-effect and the style fixed-effect. Note that the management fee, incentive fee, average leverage ratio, lockup period, and personal capital indicator are not time varying.

Table 7 presents the regression results. When all available data and all funds from TASS are used in the regression, the coefficient on the side-by-side indicator is negative and statistically significant at the 5% level after controlling for various factors that may have an impact on hedge fund performance.

The coefficient estimates for other control variables are largely consistent with the literature on hedge fund performance. The incentive fee is positively related to the hedge fund return. The same is true for lockup period. The longer the lockup period, the longer hedge fund investors have to keep their investments in the fund. This may reduce the negative impact of liquidity needs on fund performance (see Aragon 2006). Since most of the side-by-side hedge funds are long/short equity funds, we also estimate a separate regression that includes only the long/short funds. The results are qualitatively similar.

The above results provide no evidence that the potential conflicts of interest in the side-by-side relationship work in favor of hedge fund performance. In fact if anything our results suggest that hedge fund investors may be worse off because their hedge fund manager was allowed to simultaneously manage a mutual fund.

### **4.3 *Robustness Tests***

In this section, we perform several robustness checks to ensure that our results are not driven by the cross-fund subsidization within the same fund family, the presence of anonymous team-managed funds in the control group, the possibility that some side-by-side managed mutual and hedge funds are owned by different parent companies, the use of return gap as performance measure, and the potential survivorship bias and back-filling bias with the TASS hedge fund database.

#### **4.3.1 Mutual Fund Performance**

##### *Comparing Performance at the Family Level*

We consider the possibility of a different sort of conflict of interests driven by differences in objectives between mutual fund investors and parent corporations of mutual fund families. Nanda et al. (2004) and Gaspar et al. (2006) both find evidence of strategic behavior across funds within the same family. Thus, rather than a situation where mutual fund investors are being exploited to benefit hedge fund investors, it might be the case that investors in so-called “low family value funds” are being exploited to benefit investors in “high family value funds”. If this were systematically occurring, we might expect non-side-by-side managers belonging to families containing one or more side-by-side managers to under-perform their peers; the assumption being that the side-by-side managed funds are “high family value funds”, given their high fees and outstanding performance.

To test for this possibility, we compare the performance of non-side-by-side mutual funds belonging to fund families that sponsor side-by-side relationships to funds belonging to fund families without side-by-side relationships. For each month during the sample period, we separate the non-side-by-side mutual funds into two mutually exclusive portfolios based on whether or not the parent families sponsor side-by-side relationships and compute the equally weighted portfolio returns. We then regress the monthly portfolio returns and the differences in portfolio returns on four risk factors: Market, SMB, HML, and MOM. The 4-factor alpha for the side-by-side family portfolio (-0.049% per month) slightly outperforms the 4-factor alpha for the non-side-by-side family portfolio (-0.078% per month), but the difference (0.028% per month) is not statistically significant. The results are not reported in a separate table but are available

upon request. Hence, we find no evidence of underperformance by mutual fund families with side-by-side arrangements.

#### *Excluding Anonymous Team-managed Funds*

Massa, Reuter, and Zitzewitz (2006) and Baer, Kempf, and Ruenzi (2006) document a rise in the use of team management by mutual funds and explore its implications. They find some evidence that anonymous team-managed mutual funds under-perform their style category peers whose managers are named. They attribute the difference to the reputation effects of having the manager's name associated with the fund.

We run a test to see if this phenomenon is driving our results since our matching algorithm precludes anonymous team-managed funds from being in the side-by-side pool. Moreover, team-managed funds will likely be a significant subset of the control group given their widespread use. In our tests, we exclude anonymous team-managed funds from the peer group and repeat the earlier tests. The results are reported in Panel A of Table 8 and are very similar to those reported in Table 3. It is safe to conclude that our results are not driven by the presence of anonymous team-managed funds in the control group but only named managers in the side-by-side sample.

#### *Funds Under the Same Parent Company*

Our side-by-side managers fall into two broad (approximately equal) categories: cases where the mutual fund(s) and hedge fund(s) are owned by the same parent company, and cases where they are owned by different parents. It is reasonable to

assume that the opportunities to strategically manipulate returns are greater when the hedge fund(s) and mutual fund(s) are owned by the same parent since in those cases portfolio manager incentives and parent company incentives are well-aligned. On the other hand, these are also more likely to represent attempts to retain star managers. For this reason, we re-run our tests by focusing exclusively on the side-by-side cases where the mutual fund(s) and hedge fund(s) are owned by the same management company. The results are reported in Panel B of Table 8 and are similar to those in Table 3. For side-by-side arrangements within the same management company, the 4-factor adjusted alphas for mutual funds on average outperform the peer groups by 0.22% per month. This difference is statistically significant at the 1% level. The evidence thus suggests that under either of the above-mentioned arrangements the side-by-side managers stand out as star performers relative to their style peers. Moreover, those side-by-side managers whose mutual and hedge fund(s) are owned by the same parent seem to stand out the most, consistent with the star retention argument.

#### *Measuring Fund Performance Using Return Gap*

Given that the Cici et al. (2006) paper bases their main conclusions on comparing the return gap (see Kacperczyk et al., 2006) of side-by-side funds with their independent strategy cohorts, we estimate return gaps for our side-by-side managers and their style peers. Our results are largely consistent with what we report in earlier tables: we again find no evidence that mutual fund investors are being exploited. The return gap results are not reported in a separate table but are available upon request. Note that we cannot

compute return gaps for hedge funds since we do not have holdings data for our hedge funds.

### **4.3.2 Hedge Fund Performance**

#### *Survivorship Bias and Back-filling Bias*

Two important issues that come up in dealing with hedge fund data are survivorship bias and back-filling bias. Survivorship bias occurs when the database vendor fails to keep the records of funds that exit the database due to either a failure to report or liquidation of the fund. There is some debate on whether this biases performance up or down (see Jagannathan et al., 2006). The back-filling bias refers to the fact that some of the data are “back-filled”, e.g., though a particular hedge fund joins the database in 1999, they may include data back to 1996. Given the voluntary nature of reporting, there may be an incentive to report superior performance and hide poor performance. TASS keeps the records of both live and dead hedge funds within the database after 1994 and provides the initial reporting date for each hedge fund it covers. Malkiel and Saha (2005) provide a detailed account of these potential biases for the TASS data.

We conduct two sets of tests to check whether our empirical results are distorted by the biases discussed above. First, we compare the attrition rates of side-by-side managers with their peers in the hedge fund industry. For each year starting from 1994 (the year in which TASS started to keep dead hedge funds in the database), we separately calculate the percentage of funds that dropped from the database for the side-by-side group and the no-side-by-side group. The average annual attrition rate for the side-by-

side group is 6.01%, compared to 7.65% for the non-side-by-side group. Hence, the underperformance of side-by-side managed hedge funds is unlikely to be driven by the difference in attrition rate between the two groups of funds.

Second, we re-run the tests reported in Tables 6 and 7, excluding all back-filled data and data before 1994. The results are qualitatively similar. As shown in the last two columns of Table 7, side-by-side managed hedge funds significantly under-perform their peers in terms of 6-factor adjusted alpha by 0.34% per month. The magnitude of underperformance is in fact larger than what we found using all available data.

In summary, we find no evidence that side-by-side managed hedge funds benefit from potential conflicts of interest in terms of risk-adjusted performance. In contrast, these funds have significantly lower Sharpe ratios than their peers. Recall that these side-by-side managers deliver much better risk-adjusted performance than their peers on the mutual fund side. It is intriguing to observe that the superior performance on the mutual fund side fails to translate into similar results on the hedge fund side.

## **5. Conclusion**

In this paper, we document situations where the same fund manager is simultaneously managing a mutual fund(s) and a hedge fund(s), often in a similar asset or strategy domain. We refer to this as side-by-side management of mutual funds and hedge funds. We document 112 such managers that manage 189 hedge funds and 304 mutual funds. The 155 side-by-side managed mutual funds in our sample in existence in 2004 managed a total of \$123 billion, raising significant concerns for regulators.

Proponents of this practice argue that it is essential in order to hire and/or retain first rate managerial talent, i.e., star performers. Detractors argue that the temptation for abuse is high and the practice should be stopped because the possibilities for conflicts of interest are extensive in such arrangements given the typical compensation structures of mutual fund managers and hedge fund managers.

We compile a database that combines the TASS hedge fund data with the CRSP mutual fund data, looking for instances of the same portfolio manager managing mutual and hedge fund money. Our intent is to document the extent of this side-by-side fund management and relate its use to fund performance and to inform the policy debate on this topic. More than 60% of the side-by-side arrangements identified are since 1999, suggesting this is somewhat a recent trend. Moreover, it is an arrangement we especially see with managers of growth-oriented equity funds.

An analysis based on Sharpe ratios, 4-factor alphas, and a pooled time-series cross-sectional regression suggests that mutual funds whose manager(s) simultaneously manages a hedge fund significantly *outperform* peer funds, consistent with this privilege being granted primarily to the most talented managers. Though star performers could still be influenced by potential conflicts of interest, we find no evidence that this is so. Similar tests of the performance of hedge fund managers show that they are at best on par with their primary strategy peers.

Taken together these results cast doubt on the notion that side-by-side managers are willing/able to benefit their hedge fund investors at the expense of their mutual fund investors. Rather, our findings tend to support those who claim that the opportunity to manage a hedge fund side-by-side with a mutual fund is only granted to star performers.

Moreover, it appears that managers' career or reputation concerns and/or the steps that fund companies take to mitigate the possibility of manager gaming are sufficient to allay fears that mutual fund investors may be exploited to the benefit of hedge fund investors.

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**Table 1**  
**Status of Side-by-Side Management**

This table documents the summary statistics and time trend of side-by-side management during the period from 1980 to 2004. Panel A reports the total number of managers, mutual funds, and hedge funds involved in the side-by-side management. In the “Mutual Funds” and “Hedge Funds” columns, we report the sample distribution for the number of mutual funds and hedge funds managed by each side-by-side manager. Panel B reports the number of mutual funds, hedge funds and fund managers that started to have the side-by-side management during each year in the sample period. Panel C groups side-by-side mutual funds and managers by Standard & Poor Investment Objectives. Panel D groups side-by-side hedge funds and managers by TASS primary strategy categories.

**Panel A: Number of Funds and Fund Managers**

	<b>Managers</b>	<b>Mutual Funds</b>	<b>Hedge Funds</b>
<b>Total</b>	112	304	189
<b>Mean</b>	---	2.71	1.77
<b>Median</b>	---	2	1
<b>Max</b>	---	14	9
<b>75% Quantile</b>	---	3	2
<b>25% Quantile</b>	---	1	1
<b>Min</b>	---	1	1

**Panel B: Time Trend of Side-by-Side Management**

<b>Year</b>	<b>Number of Mutual Funds</b>	<b>Number of Hedge Funds</b>	<b>Number of Fund Managers</b>
1980	2	1	1
1982	1	0	0
1987	1	1	1
1989	5	5	2
1990	3	0	0
1991	5	1	1
1992	5	5	3
1993	12	4	3
1994	11	8	6
1995	11	11	7
1996	20	10	8
1997	27	16	10
1998	18	8	6
1999	21	14	6
2000	44	27	14
2001	36	26	17
2002	47	20	15
2003	25	17	7
2004	10	15	5
<b>Total</b>	304	189	112

**Table 1**  
**Panel C. Side-by-Side Mutual Funds by Standard & Poor Investment Objectives**

<b>Investment Objectives</b>	<b>Number of Mutual Funds</b>	<b>Number of Fund Managers</b>
Equity USA Growth (GRO)	58	35
Equity USA Small Companies (SCG)	48	29
Equity USA Midcaps (GMC)	25	20
Equity USA Aggressive Growth (AGG)	21	15
Equity USA Growth & Income (GRI)	20	14
Equity International Growth (EIG)	16	10
Equity Global Emerging Markets (EID)	11	6
Asset Allocation USA Balanced (BAL)	8	8
Equity Global Equity Sector (EGX)	8	8
Equity Global Growth (EGG)	7	6
Equity USA Income & Growth (ING)	7	5
Equity USA Technology (TEC)	7	5
Asset Allocation USA Flexible (FLX)	6	6
Tx Bd Corp Intermediate (CIM)	5	5
Tx Bd Corp Short (CSM)	5	4
Convertibles (CVR)	5	2
Equity USA Financial Sector (FIN)	4	2
Equity European (ERP)	3	2
Tx Bd USA Govt General (GGN)	3	3
Equity Gold (GLD)	3	2
Equity USA Health (HLT)	3	3
Equity USA Real Estate (RLE)	3	3
Tx Bd Global Bond General (BGN)	2	2
Tx Bd Corp High Yield (CHY)	2	2
Equity Global Total Return (EGT)	2	1
Equity International Small Company (EIS)	2	2
Asset Allocation Global Flexible (FLG)	2	2
Tx Bd USA Government Intermediate (GIM)	2	2
Tx Bd USA Government Short (GSM)	2	2
Tx MM Govt & Agency (SUA)	2	2
Tx Bd Global Emerging Market (BGE)	1	1
Tx Bd Corp Bond General (CGN)	1	1
Tx Bd Corp Medium Quality (CMQ)	1	1
Tx Bd Strategic Income (CSI)	1	1
Equity International Total Return (EIT)	1	1
Equity Japan (EJP)	1	1
Equity Asia Pacific (EPC)	1	1
Equity Asia Pacific Excluding Japan (EPX)	1	1
Equity Single Country (ESC)	1	1
Tx Bd USA Govt Mortgage Backed (GMB)	1	1
Asset Allocation USA Income (IMX)	1	1
Equity Utilities Sector (UTI)	1	1
<b>TOTAL</b>	<b>304</b>	<b>112</b>

**Table 1**  
**Status of Side-by-Side Management (cont.)**

**Panel D. Side-by-Side Hedge Funds by TASS Primary Categories**

<b>Primary Category</b>	<b>Number of Hedge Funds</b>	<b>Number of Fund Managers</b>
<b>Long/Short</b>	116	71
<b>Event Driven</b>	15	9
<b>Equity Market Neutral</b>	13	9
<b>Fund of Funds</b>	11	4
<b>Emerging Market</b>	10	4
<b>Fixed Income</b>	6	5
<b>Dedicated Short Selling</b>	5	3
<b>Managed Futures</b>	5	4
<b>Global Macro</b>	4	3
<b>Convertible</b>	3	2
<b>Multi-Strategies</b>	1	1

**Table 2**  
**Summary Statistics**

This table reports summary statistics for side-by-side managed mutual and hedge funds. Panel A reports the summary statistics for the 155 mutual funds with the side-by-side arrangements as of year-end 2004. The fund characteristics include TNA, turnover ratio, expense ratio, and management fee. For multiple-class funds, the TNA is calculated by summing across all share classes. All other measures are calculated as the TNA-weighted averages across all share classes. We report mean and median statistics for all side-by-side mutual funds as well as for the top five investment objective groups that observe the most side-by-side management (as identified in Panel C of Table 1): Equity USA Growth (GRO), Equity USA Small Companies (SCG), Equity USA Midcaps (GMC), Equity USA Aggressive Growth (AGG), and Equity USA Growth & Income (GRI). Panel B reports the summary statistics for the 189 hedge funds with the side-by-side arrangements. The fund characteristics include TNA (as of year-end 2004), management fee, incentive fee, and average leverage ratio. We report mean and median statistics for all side-by-side hedge funds as well as for the top five primary categories that observe the most side-by-side management (as identified in Panel D of Table 1): Long/Short equity funds, Event Driven, Equity Market Neutral, Fund of Funds, and Emerging Market.

**Panel A: Summary Statistics for Side-by-Side Mutual Funds**

Objective		TNA (\$Mil)		Turnover (%)		Expenses (%)		Mgmt Fee (%)	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median
All Side-by-Side Funds		793.12	135.60	106.83	64.57	1.68	1.52	0.94	0.97
GRO	Side-by-Side	1183.24	124.50	57.56	45.00	1.51	1.51	0.93	1.00
	All	1228.13	148.50	83.80	60.13	1.33	1.27	0.73	0.75
SCG	Side-by-Side	719.09	254.20	80.60	54.00	1.63	1.50	0.99	1.00
	All	698.12	199.80	98.47	72.00	1.43	1.40	0.84	0.85
GMC	Side-by-Side	137.03	89.40	159.70	125.00	1.70	1.82	0.88	0.90
	All	743.28	195.30	121.52	91.99	1.52	1.34	0.75	0.75
AGG	Side-by-Side	266.91	75.60	208.24	159.64	2.44	2.22	1.17	1.00
	All	774.05	122.26	267.77	110.77	1.91	1.69	0.90	0.85
GRI	Side-by-Side	1293.37	501.90	56.30	60.00	1.64	1.20	0.76	0.70
	All	2120.51	262.20	58.54	40.00	1.03	1.00	0.54	0.60

**Panel B: Summary Statistics for Side-by-Side Hedge Funds**

Objective		TNA (\$Mil)		Mgmt Fee (%)		Incent Fee (%)		Leverage (%)	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median
All Side-by-Side Funds		158.51	54.73	1.17	1.00	17.61	20.00	57.98	0.00
Long/ Short	Side-by-Side	154.75	45.07	1.09	1.00	18.75	20.00	42.40	0.00
	All	271.10	40.70	1.29	1.25	19.12	20.00	39.64	0.00
Event Driven	Side-by-Side	62.61	50.08	1.21	1.50	18.73	20.00	73.96	5.00
	All	481.20	81.50	1.37	1.50	18.83	20.00	55.24	0.00
Mkt. Neutral	Side-by-Side	122.64	160.44	1.12	1.00	20.00	20.00	53.09	0.00
	All	199.10	29.59	1.38	1.50	19.53	20.00	75.06	0.00
Fund of Funds	Side-by-Side	108.69	94.11	1.60	1.65	3.64	0.00	0.00	0.00
	All	351.77	45.67	1.44	1.50	9.15	10.00	24.03	0.00
Emerg. Market	Side-by-Side	386.38	96.87	1.62	1.50	13.50	20.00	0.00	0.00
	All	190.09	65.21	1.53	1.50	17.58	20.00	26.51	0.00

**Table 3**  
**Performance of Side-by-Side Mutual Funds**

Panel A reports the performance of side-by-side mutual funds relative to a control group of funds with the same investment objectives (peer funds). For each mutual fund under side-by-side management, we compute the risk-adjusted performance during the side-by-side period and compare it to the mean and median risk-adjusted performance of all peer funds. We require monthly return data for at least two years. A total of 235 side-by-side funds are included in the analysis. We use monthly return data from CRSP to calculate both measures of risk-adjusted performance. The first row reports the mean and median monthly Sharpe ratio and 4-factor alpha for side-by-side mutual funds. The second row reports the mean and median monthly Sharpe ratio and 4-factor alpha for the median peer fund. The third row reports the mean and median monthly difference in Sharpe ratio and 4-factor alpha between the side-by-side group and the control group. Panel B examines the performance of side-by-side mutual funds using a portfolio approach. For each month from January 1990 to December 2005, we construct two portfolios based on the presence of side-by-side arrangement and calculate equally weighted portfolio returns. We then regress the monthly portfolio returns and the difference in monthly portfolio returns on four risk factors: Market, SMB, HML, and MOM. The factor loadings and the alphas are reported in the table. The p-values are reported in the parentheses. Statistical significance of 1%, 5%, and 10% is indicated by \*\*\*, \*\*, and \* respectively.

**Panel A: Performance Relative to Peer Funds**

	Sharpe Ratio		4-Factor Alpha	
	Mean	Median	Mean	Median
<b>Side-by-Side Funds</b>	0.139*** (0.00)	0.155*** (0.00)	0.044% (0.22)	0.033% (0.31)
<b>Funds with Same Investment Objectives</b>	0.108*** (0.00)	0.103*** (0.00)	-0.087%*** (0.00)	-0.085%*** (0.00)
<b>Performance Difference</b>	0.032*** (0.00)	0.040*** (0.00)	0.132%*** (0.00)	0.080%*** (0.00)

**Panel B: Portfolio Performance**

	Alpha	Market	SMB	HML	MOM
<b>Side-by-Side</b>	0.072 (0.32)	0.783*** (0.00)	0.197*** (0.00)	0.144*** (0.00)	0.024* (0.10)
<b>No side-by-side</b>	-0.077* (0.08)	0.710*** (0.00)	0.084*** (0.00)	0.074*** (0.00)	0.016* (0.06)
<b>Difference</b>	0.148*** (0.00)	0.073*** (0.00)	0.113*** (0.00)	0.070*** (0.00)	0.008 (0.45)

**Table 4**  
**Performance of Side-by-Side Mutual Funds:**  
**Regression Approach**

The table examines the performance of side-by-side mutual funds relative to other funds using a pooled regression approach. The dependent variable is the current month four-factor adjusted return. The independent variables include: an indicator variable that equals one if the fund is a side-by-side fund in the current month; the logarithm of fund TNA at the end of previous month; the logarithm of fund family TNA at the end of previous month; the logarithm of fund age in the previous year; the total load in the previous year; the expense ratio in the previous year; the turnover ratio in the previous year; the time fixed-effect, and the investment objective fixed-effect. The standard errors are adjusted for heteroskedasticity and clustered by month. The table separately reports regression results when all funds and only equity funds are included in the sample. The p-values are reported in the parentheses. Statistical significance of 1%, 5%, and 10% is indicated by \*\*\*, \*\*, and \* respectively. All coefficients reported in the table are the actual coefficient estimates multiplied by 100.

	<b>4-Factor Alpha (t)</b>	
	All Funds	Equity Funds
<b>Side-by-Side Indicator</b>	0.132*** (0.00)	0.151*** (0.00)
<b>Log Fund TNA (t-1)</b>	-0.003 (0.85)	-0.010 (0.54)
<b>Log Family TNA (t-1)</b>	0.003 (0.53)	0.006 (0.36)
<b>Log Fund Age (t-12)</b>	-0.016 (0.48)	-0.018 (0.45)
<b>Total Load (t-12)</b>	-0.003 (0.42)	-0.003 (0.36)
<b>Expenses (t-12)</b>	-9.048*** (0.00)	-9.504*** (0.00)
<b>Turnover (t-12)</b>	-0.002 (0.56)	-0.002 (0.71)
<b>Time fixed-effect</b>	Included	Included
<b>Style fixed-effect</b>	Included	Included
<b>Observations</b>	515,806	381,315

**Table 5**  
**Performance of Side-by-Side Mutual Funds: Before vs. After**  
**Regression Approach**

This table examines the performance change of side-by-side mutual funds around the commencement of side-by-side arrangement relative to other funds using a pooled regression approach. The data sample consists of funds that switched to the side-by-side arrangements during the sample period and have both pre- and post-switch performance data available and funds that never switched to the side-by-side arrangements. The dependent variable is the current month 4-factor adjusted return. The independent variables include: an indicator variable that equals one if the fund is not a side-by-side fund in the current month but later on introduces side-by-side arrangement; an indicator variable that equals one if the fund is a side-by-side fund in the current month; the logarithm of fund TNA at the end of previous month; the logarithm of fund family TNA at the end of previous month; the logarithm of fund age in the previous year; the total load in the previous year; the expense ratio in the previous year; the turnover ratio in the previous year; the time fixed-effect, and the investment objective fixed-effect. The standard errors are adjusted for heteroskedasticity and are clustered by month. The table separately reports regression results when all funds and only equity funds are included in the sample. The p-values are reported in the parentheses. Statistical significance of 1%, 5%, and 10% is indicated by \*\*\*, \*\*, and \* respectively. All coefficients reported in the table are the actual coefficient estimates multiplied by 100.

	<b>4-Factor Alpha (t)</b>	
	All Funds	Equity Funds Only
<b>Pre-Side-by-Side Indicator</b>	0.124*** (0.00)	0.105** (0.01)
<b>Side-by-Side Indicator</b>	0.123** (0.02)	0.145** (0.01)
<b>Log Fund TNA (t-1)</b>	-0.002 (0.87)	-0.010 (0.56)
<b>Log Family TNA (t-1)</b>	0.004 (0.51)	0.006 (0.36)
<b>Log Fund Age (t-12)</b>	-0.016 (0.47)	-0.019 (0.42)
<b>Total Load (t-12)</b>	-0.003 (0.41)	-0.003 (0.36)
<b>Expenses (t-12)</b>	-9.308*** (0.00)	-9.772*** (0.00)
<b>Turnover (t-12)</b>	-0.002 (0.56)	-0.002 (0.73)
<b>Time fixed-effect</b>	Included	Included
<b>Style fixed-effect</b>	Included	Included
<b>Observations</b>	511,089	377,377

**Table 6**  
**Performance of Side-by-Side Hedge Funds**

This table examines the performance of hedge funds with side-by-side arrangements. In Panel A, we compute the risk-adjusted performance for each hedge fund during the side-by-side management period and compare it to the mean and median risk-adjustment performance for a control group of funds with the same TASS primary category during the same time period. To measure risk-adjusted performance, we require monthly return data for at least two years. A total of 156 side-by-side funds are included in the analysis. We use monthly return data from TASS to calculate both Sharpe ratio and 6-factor (four factors plus two option return factors) alpha as measures of risk-adjusted performance. The first row reports the mean and median monthly Sharpe ratio and 6-factor alpha for hedge funds under side-by-side management. The second row reports the mean and median monthly Sharpe ratio and 6-factor alpha for the median funds with the same investment category. The third row reports the mean and median monthly difference in Sharpe ratio and 6-factor alpha between the side-by-side group and the control group. Panel B examines the performance of side-by-side hedge funds using a portfolio approach. For each month from January 1996 to December 2005, we construct two portfolios based on the presence of side-by-side arrangement and calculate equally weighted portfolio returns. We then regress the monthly portfolio returns and the difference in monthly portfolio returns on six risk factors: Market, SMB, HML, MOM, ATM\_Put, and OTM\_Put. The factor loadings and the alphas are reported in the table. The p-values are reported in the parentheses. Statistical significance of 1%, 5%, and 10% is indicated by \*\*\*, \*\*, and \* respectively.

**Panel A: Performance Relative to Peer Funds**

	Sharpe Ratio		6-Factor Alpha	
	Mean	Median	Mean	Median
<b>Side-by-Side Funds</b>	0.182*** (0.00)	0.174*** (0.00)	0.222* (0.08)	0.167** (0.02)
<b>Funds with Same Investment Objectives</b>	0.236*** (0.00)	0.204*** (0.00)	0.306*** (0.00)	0.330*** (0.00)
<b>Performance Difference (Average across funds)</b>	-0.054*** (0.00)	-0.060*** (0.00)	-0.085 (0.50)	-0.106 (0.13)

**Panel B: Portfolio Performance**

	Alpha	Market	SMB	HML	MOM	ATM_Put	OTM_Put
<b>Side-by-Side</b>	0.232 (0.12)	0.486*** (0.00)	0.132*** (0.00)	0.157*** (0.00)	0.106*** (0.00)	-0.010 (0.60)	0.008 (0.67)
<b>No side-by-side</b>	0.352*** (0.00)	0.295*** (0.00)	0.080*** (0.00)	0.069** (0.04)	0.076*** (0.00)	-0.008 (0.61)	0.006 (0.70)
<b>Difference</b>	-0.120 (0.23)	0.191*** (0.00)	0.052** (0.02)	0.087*** (0.00)	0.030** (0.03)	-0.002 (0.86)	0.002 (0.86)

**Table 7**  
**Performance of Side-by-Side Hedge Funds:**  
**Regression Approach**

This table examines the performance of side-by-side hedge funds relative to other funds using a pooled regression approach. We report two sets of regression analyses. The first set of regressions uses all available data as reported in TASS. The second set of regressions excludes all back-filled data and data before 1994 to minimize back-filling bias and survivorship bias. The dependent variable is the current month 6-factor adjusted return. The independent variables include: an indicator variable that equals one if the fund is a side-by-side fund in the current month; the logarithm of fund TNA at the end of previous month; the logarithm of fund age in the previous year; the management fee; the incentive fee; the average leverage ratio; the lockup period; an indicator variable that equals one if the fund manager has a personal stake in the fund; the time fixed-effect; and the investment objective fixed-effect. The standard errors are adjusted for heteroskedasticity and are clustered by month. The table separately reports regression results when all hedge funds and only long/short equity funds are included in the sample. The p-values are reported in the parentheses. Statistical significance of 1%, 5%, and 10% is indicated by \*\*\*, \*\*, and \* respectively.

	<b>6-Factor Alpha (t)</b>			
	Using All Available Data		Excluding Back-Filled Data and Data Before 1994	
	All Funds	Long/Short Funds	All Funds	Long/Short Funds
<b>Side-by-Side Indicator</b>	-0.2012** (0.01)	-0.1428 (0.22)	-0.3380*** (0.00)	-0.3721*** (0.00)
<b>Log Fund TNA (t-1)</b>	0.0286** (0.04)	0.0037 (0.88)	0.0504*** (0.00)	0.0542** (0.03)
<b>Log Fund Age (t-12)</b>	-0.1447** (0.02)	-0.1936** (0.03)	-0.0784 (0.14)	-0.2103** (0.02)
<b>Mgmt fee</b>	0.0670 (0.20)	0.1722* (0.09)	0.0464 (0.43)	0.0500 (0.66)
<b>Incentive fee</b>	0.0043 (0.26)	0.0161** (0.04)	-0.0006 (0.88)	0.0086 (0.36)
<b>Avg leverage</b>	0.0000 (0.62)	0.0001 (0.75)	-0.0000 (0.52)	0.0001 (0.80)
<b>Lockup period</b>	0.0052* (0.07)	0.0035 (0.58)	0.0019 (0.48)	-0.0003 (0.96)
<b>Personal Capital</b>	0.0012 (0.97)	-0.0561 (0.32)	0.0514 (0.14)	0.0258 (0.63)
<b>Time fixed-effect</b>	Included	Included	Included	Included
<b>Style fixed-effect</b>	Included	---	Included	---
<b>Observations</b>	131,538	42,805	103,683	34,493

**Table 8**  
**Performance of Side-by-Side Mutual Funds: Robustness Checks**

This table examines the performance of mutual funds with side-by-side arrangements. Panel A reports the performance of side-by-side mutual funds relative to a control group of funds with the same investment objectives, as in Table 3. However, in this case, all anonymously team-managed mutual funds have been eliminated from the control group (they are necessarily excluded from the side-by-side group). For each mutual fund under side-by-side management, we compute the risk-adjusted performance during the side-by-side period and compare it to the mean and median risk-adjusted performance of all funds with the same investment objective during the same time period. To measure risk-adjusted performance, we require monthly return data for at least two years. A total of 235 side-by-side funds are included in the analysis. We use monthly return data from CRSP to calculate both Sharpe ratio and 4-factor alpha as measures of risk-adjusted performance. The first row reports the mean and median monthly Sharpe ratio and 4-factor alpha for side-by-side mutual funds. The second row reports the mean and median monthly Sharpe ratio and 4-factor alpha for the median funds with the same investment objective. The third row reports the mean and median monthly difference in Sharpe ratio and 4-factor alpha between the side-by-side group and the control group. Panel B looks at similar tests but restricts attention to only those cases where the parent company of the mutual fund is the same as the parent company of the hedge fund. A total of 103 funds are included in the analysis. The p-values are reported in the parentheses. Statistical significance of 1%, 5%, and 10% is indicated by \*\*\*, \*\*, and \* respectively.

**Panel A: Excluding Anonymous Funds from the Peer Group**

	Sharpe Ratio		4-Factor Alpha	
	Mean	Median	Mean	Median
<b>Side-by-Side Funds</b>	0.142*** (0.00)	0.155*** (0.00)	0.047% (0.19)	0.035% (0.25)
<b>Funds with Same Investment Objectives</b>	0.110*** (0.00)	0.102*** (0.00)	-0.082%*** (0.00)	-0.085%*** (0.00)
<b>Performance Difference (Average across funds)</b>	0.032*** (0.00)	0.039*** (0.00)	0.130%*** (0.00)	0.092%*** (0.00)

**Panel B: Side-by-Side Funds with the Same Management Companies**

	Sharpe Ratio		4-Factor Alpha	
	Mean	Median	Mean	Median
<b>Side-by-Side Funds</b>	0.161*** (0.00)	0.178*** (0.00)	0.134%*** (0.00)	0.150%*** (0.00)
<b>Funds with Same Investment Objectives</b>	0.117*** (0.00)	0.113*** (0.00)	-0.087%*** (0.00)	-0.081%*** (0.00)
<b>Performance Difference (Average across funds)</b>	0.044*** (0.00)	0.065*** (0.00)	0.220%*** (0.00)	0.211%*** (0.00)