Management Science

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Abstract. Affiliation with a financial conglomerate may provide hedge funds with superior information about the conglomerate's lending, investment banking, and brokerage clients; such affiliation can also lead to potential conflicts with the other units of the conglomerate and exacerbate the conflict between hedge fund companies and hedge fund investors. We find that affiliated funds significantly underperform unaffiliated funds. A difference-in-difference analysis confirms the negative relation between financial industry affiliation and hedge fund performance. Affiliated funds pursue asset-gathering strategies, overweight their conducted initial public offerings/seasoned equity offerings clients' stocks, are more likely to commit legal and regulatory violations, and tend to exhibit a greater number of internal conflicts. Our results are consistent with conflict of interest exerting a negative impact on the performance of affiliated hedge funds. However, it is possible that lack of skill also contributes to the underperformance of affiliated funds.

1. Introduction

Although hedge funds are typically organized as limited partnerships and belong to stand-alone hedge fund companies, a significant number of hedge funds are sponsored by financial institutions that provide a broad range of services. For example, 12.3% of the hedge funds in our sample are affiliated with banks, whereas 30.3% are affiliated with brokers and dealers.[1] Despite their large presence in the hedge fund industry, few studies have examined the performance of financial industry–affiliated hedge funds. The lack of research on affiliated hedge funds is surprising given the recent controversy surrounding the Volcker rule (as part of the Dodd–Frank Act), which prohibits banks from sponsoring hedge funds and private equity funds.

Financial industry affiliations may impact hedge fund performance mainly through two channels—conflicts of interest and superior information. Although conflicts of interest also exist in stand-alone hedge fund companies, they stand out more sharply in hedge funds affiliated with financial conglomerates. In particular, affiliated funds may pursue the interests of the financial conglomerate at the expense of fund performance. For example, hedge funds may use affiliated brokers to execute their trades even when the terms are not competitive. A financial conglomerate could also favor its proprietary trading desk over its hedge fund

business (Fecht et al. 2018). In addition, hedge funds affiliated with an investment bank may face implicit or explicit pressure to buy their investment banking clients' shares to help win future underwriting deals. Given that stock issuers perform poorly in the long run (Loughran and Ritter 1995), such investments would be detrimental to the interest of fund investors.

An alternative hypothesis is that affiliation with a financial conglomerate provides hedge funds with access to a broader set of resources and, more important, superior information. In particular, a financial institution may acquire private information about its lending, investment banking, or brokerage clients. If managers of affiliated hedge funds exploit such information to the benefit of fund investors, affiliated funds will tend to outperform unaffiliated funds.[2] Although information barriers, known as the *Chinese wall*, exist in financial institutions to restrict flows of material, nonpublic information from one division to another, there is ample evidence that, in practice, they often fail to prevent the spread of such information within financial conglomerates. Massa and Rehman (2008), Ivashina and Sun (2011), and Massoud et al. (2011), for example, present evidence that institutional investors and hedge funds trade on private information acquired through lending activities.

To summarize, the conflict-of-interest hypothesis predicts that affiliated hedge funds underperform

unaffiliated funds, whereas the superior-information hypothesis predicts the opposite. The conflict-of-interest hypothesis and the superior-information hypothesis are not mutually exclusive. If their effects on fund performance offset each other, then affiliated funds will neither outperform nor underperform unaffiliated funds. Therefore, financial industry affiliation may have a positive, negative, or no effect on hedge fund performance. It is an empirical question which of these effects dominates.

We test the hypotheses using a sample of hedge funds that file Form ADV with the Securities and Exchange Commission (SEC) over the period 2001–2014. We rely on the SEC's definitions of financial industry affiliations. More specifically, we examine eight types of affiliated financial institutions, namely bank, broker-dealer, insurance company, investment adviser, investment company, pension consultant, futures and commodity trading adviser, and sponsor of limited partnership.

We begin our analysis by comparing the performance of affiliated hedge funds with unaffiliated hedge funds. Using a portfolio approach, we find significant evidence that affiliated funds underperform unaffiliated funds. For example, bank-affiliated hedge funds underperform funds without any financial industry affiliations by 2.23% per year (t-statistic = 3.44) in raw returns and by 1.96% per year (t-statistic = 2.99) in Fung and Hsieh (2004) seven-factor alphas. The performance difference between affiliated and unaffiliated funds is negative in all eight types of affiliations and statistically significant in six to eight of them depending on the performance measure. The underperformance of affiliated funds remains statistically and economically significant after controlling for fund size, share restrictions, incentive fees, and other fund characteristics in cross-sectional regressions. Moreover, a difference-in-difference analysis focusing on a sample of funds that experienced financial industry affiliation changes because of mergers and acquisitions (M&As) confirms the negative relation between financial industry affiliation and hedge fund performance.

Hedge funds report their returns voluntarily to commercial databases (e.g., Lipper TASS), and they may cease reporting when they perform poorly. Therefore, the reported returns might not fully capture the underperformance of affiliated funds. To supplement our return analysis, we also study the relation between financial industry affiliation and hedge fund failure. To the extent that affiliated hedge funds underperform and poorly performing funds are more likely to drop out of the hedge fund database, we expect affiliated funds to exhibit a higher probability of attrition than unaffiliated funds. Our results support this hypothesis.

We argue that the broader the range of a financial institution's activities, the greater is the probability that an affiliated hedge fund will encounter potential conflicts of interest and the higher is the agency cost that hedge fund investors will face. Therefore, if the lower performance by affiliated hedge funds is because of conflicts of interest, we would expect this effect to be more pronounced when the number of financial industry affiliations is greater. Our results are consistent with this prediction. We aggregate the eight types of financial industry affiliations and find that the affiliated funds' underperformance increases with the number of affiliations.

To provide more direct evidence on the conflict-of-interest hypothesis, we conduct four additional tests. First, we examine the histories of legal and regulatory violations by hedge funds in investment-related activities. The potential conflict of interest because of complex affiliations might induce fraudulent behavior of fund managers because they have a greater incentive to deviate from fund investors' interests. Consistent with this hypothesis, we find that affiliated hedge funds are more likely to commit legal and regulatory violations than unaffiliated funds.

Second, we examine the relation between financial industry affiliation and potential internal conflicts of interest. We employ the same set of internal conflict variables examined by Brown et al. (2008). These variables are extracted from Form ADV filings and capture registered investment advisers' participation or interest in client transactions (e.g., whether the investment adviser directly trades with its advisory clients). Using an ordered logit model, we find that affiliated hedge fund companies tend to exhibit a greater number of internal conflicts than unaffiliated hedge fund companies.

Third, we focus on investment bank–affiliated hedge funds and examine the funds' stockholdings of their investment banking clients that have recently conducted initial public offerings (IPOs) or seasoned equity offerings (SEOs). Although affiliated hedge funds may have an incentive to hold these stocks to help win future underwriting deals, previous studies have shown that equity issuers perform poorly. Therefore, evidence of overweighting these stocks would be consistent with the conflict-of-interest hypothesis. We find that affiliated funds are twice as likely to hold client stocks as nonclient stocks. Moreover, affiliated funds' average dollar holding of client stocks is significantly higher than that of nonclient stocks. Finally, the average holding period of client stocks is significantly longer than that of nonclient stocks.

Our final test builds on Fung et al. (2020), who show that hedge fund families have an incentive to launch new funds in order to grow their assets and raise total

fee income for the fund family. More important, they find that such strategies result in lower fund performance. We argue that hedge fund companies belonging to financial conglomerates are more likely to implement such asset-gathering strategies because of their large client base and their desire to be a one-stop shop. Supporting this argument, we find that affiliated hedge fund companies on average manage a greater number of funds in a greater number of investment categories than stand-alone hedge fund companies.

An alternative explanation for the underperformance of affiliated hedge funds is that the managers of affiliated funds are less skilled than the managers of unaffiliated funds. We acknowledge that we cannot rule out this possibility. In general, one might argue that financial conglomerates such as J.P. Morgan and Goldman Sachs should be able to attract and retain better talent than stand-alone firms. However, this is not necessarily the case in the hedge fund industry. Anecdotal evidence suggests that many star fund managers and traders at financial conglomerates went on to start their own hedge funds, presumably for greater compensation and autonomy. Therefore, it is possible that lack of skill also contributes to the underperformance of affiliated funds.

Given the significant underperformance of affiliated hedge funds, one might ask how they can survive in the ultracompetitive hedge fund industry. What potential benefit does financial industry affiliation provide to the fund investors, the fund family, and the financial conglomerate? First, fund investors may benefit from a lower search cost by obtaining multiple services from the same financial institution. Second, affiliated funds may benefit from having access to a more stable source of funding from their parent companies, particularly during liquidity crises (Franzoni and Giannetti 2019). Third, financial conglomerates obtain synergies and economies of scope by running hedge funds alongside their investment banking, lending, and brokerage businesses. More important, affiliated hedge fund families, despite their below-average performance, generate greater fee income as a result of their larger asset base and greater number of funds (Fung et al. 2020).

Conflicts of interest are pervasive in the asset-management industry. At the center of these conflicts are the divergent interests of fund investors and fund management companies. Although fund investors care about net-of-fee risk-adjusted returns, fund companies would like to maximize their own profits. Much research has examined conflicts of interest in mutual funds.[3] Hedge funds, however, have received far less attention. Yet, understanding the impact of conflicts of interest on hedge funds is even more imperative because of the lack of transparency, weak governance, and increasing retail orientation of the hedge fund industry. Indeed, the SEC recently declared conflicts of interest within hedge funds to be one of their regulatory priorities (Karpati 2012, Riewe 2015). Our sample of financial conglomerate–affiliated hedge funds provides a unique laboratory to study the issue of conflict of interest in the asset-management industry because of the potential for numerous conflicts of interest among these funds. Consequently, the economic impact and agency cost associated with conflicts of interest are likely to be particularly large in our setting.[4]

Our paper is closely related to those of Brown et al. (2008), Dimmock and Gerken (2012), and Franzoni and Giannetti (2019). Brown et al. (2008) examine the operational risk of hedge funds using information from Form ADV filings in the year 2006 and find an insignificant relation between a composite measure of financial industry affiliation and fund performance. In contrast to Brown et al. (2008), we use a finer classification of financial industry affiliation over a much longer sample period (i.e., 14 years), and we find a significant and negative relation between financial industry affiliation and hedge fund performance. Our findings are consistent with the story of Brown et al. (2008), who argue that conflicts of interest contribute to funds' operation risk, which negatively affects fund performance. Dimmock and Gerken (2012) find that fraud risk is negatively related to hedge fund performance. The only financial industry affiliation variable included in their model is whether a hedge fund has an affiliated broker. Moreover, this variable has an indeterminate relation with fraud risk. In a concurrent paper, Franzoni and Giannetti (2019) also examine financial conglomerate–affiliated hedge funds, but their primary focus is on risk-taking behaviors and liquidity issues.[5]

Our paper adds to a small but growing literature examining conflicts of interest in hedge funds. Bollen and Pool (2009, 2012) find evidence of overstated hedge fund returns and link such incidence to hedge fund fraud. Agarwal et al. (2011) find that hedge funds inflate December returns in order to maximize their incentive fees. Yin (2016) shows that hedge funds have an incentive to increase fund size to a level that maximizes their own compensation rather than fund performance. Sun and Teo (2019) find that hedge funds managed by publicly traded firms significantly underperform funds managed by private firms and attribute the difference to agency cost.

Finally, our paper contributes to the ongoing debate about the optimal scope of financial institutions. Advocates of universal banking point to its efficiency and economy of scope, particularly in the area of information gathering and monitoring. However, universal banking may give rise to conflicts of interest. Many people believe that the repeal of Glass–Steagall

Act in 1999 was an important cause of the financial crisis of 2007–2008. Indeed, Section 13 of the Dodd–Frank Act (i.e., the Volcker rule) prohibits banking entities from engaging in proprietary trading or sponsoring hedge funds and private equity funds. Our paper contributes to this debate by showing that affiliations with banks and other financial institutions exacerbate the conflict of interest in the hedge fund industry and have a negative impact on hedge fund performance.

The rest of this paper proceeds as follows. Section 2 discusses our data and sample. Section 3 presents our empirical results. Section 4 concludes.

2. Data and Sample

The data for this study come primarily from the following sources: (1) hedge fund financial industry affiliation and other regulatory data are from Form ADV filings, (2) hedge fund performance and characteristics are from the Lipper TASS Hedge Fund Database, (3) hedge fund stock holdings are from the Thomson Reuters 13F database, and (4) IPO and SEO data are from the Securities Data Company (SDC) New Issues Database. The sample period for our study is 2001–2014.

2.1. Form ADV Filings

The Investment Adviser Act of 1940 requires all investment advisers with assets under management (AUM) of more than $25 million and more than 14 U.S investors to register with the SEC and file Form ADV to disclose material information about the company. The purpose of this regulation is to protect the investing public and the financial markets. Form ADV contains rich information about registered investment advisers, including their administrative background, organizational structure, investor composition, and legal and regulatory history.[6] Before 2006, most hedge fund companies were, in effect, exempted from registration because they usually create limited partnerships in which clients invest and each partnership is counted as a single investor. Nevertheless, a significant number of hedge fund companies voluntarily registered with the SEC before 2006.

To exercise greater supervision over the hedge fund industry, the SEC announced a new rule in December 2004 that required all advisers to certain private investment pools (*hedge funds*) to register with the SEC by February 2006. Specifically, the new rule mandated that (1) an onshore hedge fund adviser must register with the SEC if it manages more than $25 million and that (2) an offshore hedge fund adviser (whose principal office and place of business are outside the United States) must register if it has more than 14 U.S. clients. More important, investment advisers should count each investor of their private

funds toward the threshold of 14 clients. As a result, the number of registered hedge fund companies increased substantially in 2005 and 2006. Although the rule was vacated by the U.S. Court of Appeals in June 2006, most hedge fund companies remained registered and continued to file Form ADV in subsequent years. After the 2007–2009 financial crisis, the Private Fund Investment Advisers Registration Act of 2010 in Title IV of the Dodd–Frank Act was enacted. Under this act, all hedge fund companies with assets under management of more than $150 million are required to register with the SEC and file Form ADV annually.

The appendix presents the number of hedge fund companies in the Lipper TASS database that filed Form ADV each year during 2001–2014. As we can see, many hedge fund companies filed Form ADV before 2005, and the number increased substantially in 2005 and 2006 because of the new SEC rule announced in December 2004. We note that most of the hedge fund companies continued to file Form ADV even after the rule was vacated in June 2006. In fact, when the registration became mandatory again in 2012, the number of hedge fund companies filing Form ADV only increased marginally. These statistics suggest that any bias associated with the voluntary nature of Form ADV filings before 2012 (except 2006) would be small.

2.1.1. Financial Industry Affiliations. We obtain data on financial industry affiliations from item 7 of Form ADV. Specifically, item 7 asks each registered investment adviser to disclose whether it is affiliated with the following categories of financial institutions: (1) bank, (2) broker-dealer, (3) futures and commodities trading adviser, (4) insurance company, (5) investment adviser, (6) investment company,[7] (7) pension consultant, and (8) sponsors of a limited liability partnership (LLP). Detailed descriptions of these categories are given in the appendix.

For each of the categories, we create a dummy variable that takes the value of one if the registered investment adviser is affiliated with a financial institution in that category and zero if it is not affiliated with *any* of the eight categories of financial institutions. For ease of exposition, we refer to these dummy variables collectively as *FIN* (i.e., the financial industry affiliation dummy variable).[8]

Although each of the eight categories of financial industry affiliations presents opportunities for potential conflicts of interest and/or superior information, we believe that the first two categories (i.e., banks and brokers) are the most interesting. On the one hand, affiliations with banks and brokers create many potential conflicts of interest that might harm hedge fund investors. As stated earlier, hedge funds may have a strong incentive to use affiliated brokers as their prime brokers. In addition, affiliated funds

may face pressure to buy their investment banking clients' shares to help win future underwriting deals. On the other hand, affiliations with banks and brokers also provide great opportunities for obtaining private information about the financial conglomerate's lending, investment banking, and brokerage clients, which, if exploited, could benefit hedge fund investors (e.g., Massoud et al. 2011, Kumar et al. 2020).

2.1.2. Legal and Regulatory Violations. Item 11 of Form ADV asks registered investment advisers to report their and their affiliates' disciplinary history. The questions include felony, investment-related misdemeanors, violations of the SEC or the Commodity Futures Trading Commission (CFTC) regulations, violations of other federal/state/foreign regulatory authority regulations, and violations of self-regulatory organizations' requirements. For our analysis, we identify 21 investment-related questions. These violations represent clear cases of material or potential damages to the fund investors. For example, question C.1 asks whether the SEC or the CFTC has ever found the investment adviser to have made a false statement or omission. Question D.2 asks whether any other regulatory authority has ever found the investment adviser to have been involved in a violation of investment-related regulations or statues.

Investment advisors must complete the Disclosure Reporting Page (DRP) to provide details of the violations. In particular, they need to disclose the person or entities for whom the DRP is being filed, the date first charged, the charge(s), and the outcome of the charges. For the purpose of focusing on legal and regulatory violations committed by hedge fund companies themselves rather than their affiliates, we go through the data set of DRP to exclude the violations committed by affiliates and to pin down the exact timing of each violation.

2.1.3. Internal Conflicts. Item 8 of Form ADV asks registered investment advisers to identify sales or proprietary interest in client transactions. For example, question A.1 asks whether the investment advisor buys securities from or sells securities to its advisory clients. Question A.3 asks whether the investment advisor recommends securities to advisory clients in which it has a proprietary or ownership interest. We follow Brown et al. (2008) and focus on seven of these questions. We aggregate the responses to these questions and use the result as a proxy for potential internal conflicts of interest.

2.2. Hedge Fund Returns and Characteristics

Lipper TASS is one of the most comprehensive and widely used commercial hedge fund databases in the academic literature. The database contains both live and defunct funds (graveyard). From Lipper TASS, we obtain hedge fund returns and various fund characteristics including fund AUM, minimum investment, fee structure, the use of high-water mark (HWM), leverage, and share restriction provisions. We obtain the factors of Fung and Hsieh (2004) from David Hsieh's website.[9]

Following the previous literature, we mitigate the backfilling bias, survivorship bias, and self-selection bias in the hedge fund data in several ways. We exclude funds before their assets under management exceed $10 million. We follow previous studies (Aggarwal and Jorion 2010, Jorion and Schwarz 2019) and exclude fund data before each fund's entry date to the Lipper TASS database. In addition, we only keep funds that report net returns on a monthly basis in U.S. dollars. Finally, we retain both live and defunct funds in the sample in order to remove survivorship bias.

Because there is no common identifier for the asset-management companies in Lipper TASS and the investment advisers in Form ADV filings, we merge the two data sets by matching the company names manually. For each registered investment adviser, the SEC assigns a unique number. We search all Lipper TASS asset-management companies' names on the SEC's Investment Adviser Public Disclosure website to obtain their SEC numbers and Central Registration Depository numbers.[10] To ensure accuracy of the data, we require the name from Lipper TASS to be exactly the same as the company name we find on the SEC's website. In addition, when the company's address is available, we require the addresses from the two data sources to match as well. We then merge Form ADV data with the Lipper TASS hedge fund data using the SEC number. Our final sample contains 2,476 hedge funds that have both Form ADV data and the Lipper TASS hedge fund data.[11]

2.3. Hedge Fund Stock Holdings and Equity Issuance Data

We obtain hedge fund companies' quarterly stock holdings by merging Lipper TASS with the Thomson Reuters 13F database. In the United States, institutions with more than $100 million of AUM need to report their quarter-end stock positions that are more than 10,000 shares or worth more than $200,000. Following Griffin and Xu (2009) and Cao et al. (2018), we identify hedge fund companies in the 13F database by manually matching the institutional investors' names from 13F with the asset-management companies' names from Lipper TASS. To ensure accuracy, we require exact match of the names.

In addition, we collect data on all IPO and SEO issues in the United States for the period 2000–2014 from

the SDC New Issues Database. Specifically, we extract the Committee on Uniform Securities Identification Procedures number of each issuer and the names of the book runners. We match the names of the book runners with the names of hedge fund companies' related persons from Schedule D of Form ADV to identify hedge fund companies that have affiliated underwriters.

2.4. Summary Statistics

Table 1 presents the summary statistics of various fund characteristics. The average AUM of our sample funds is $226.11 million. An average fund requires a minimum investment of $1.88 million and charges a 1.42% management fee and 16.77% incentive fee; 37% of the funds have a lockup provision, and 76% of the funds use HWM, whereas 57% of the funds use leverage. Finally, 30% of the funds have managerial coinvestment.

Table 2 presents the percentages of our sample funds affiliated with each of the eight categories of financial institutions described in Section 2.1. For example, 12.3% of the sample funds are affiliated with banks, and 30.3% of the funds are affiliated with broker-dealers. There is a large variation in these percentages, ranging from 3.7% (pension consultants) to 54.1% (investment advisors).[12]

3. Empirical Results
3.1. Fund Performance

We begin our analysis by examining the relation between financial industry affiliation and hedge fund performance. We use three methods—univariate portfolio sort, Fama–MacBeth regression, and a difference-in-difference approach.

3.1.1. Univariate Portfolio Sort. Each year, we divide our sample funds into two groups (i.e., affiliated funds and unaffiliated funds) based on each of the eight financial industry affiliation dummy variables (*FIN*) described in Section 2.1. We then form equal-weighted portfolios within each group. We compute the average returns for affiliated and unaffiliated funds as well as their differences. In addition to raw returns, we also examine the seven-factor alphas of Fung and Hsieh (2004). Specifically, we estimate seven-factor alphas by regressing the time series of portfolio returns of affiliated or unaffiliated funds on the seven factors of Fung and Hsieh (2004).

Panel A of Table 3 presents the results for net returns. We find that affiliated funds exhibit significantly lower returns than unaffiliated funds. For example, bank-affiliated hedge funds have an average monthly return of 0.282%, whereas unaffiliated funds earn a monthly return of 0.468%. The difference

Table 1. Summary Statistics: Fund Characteristics

Variable	N	Mean	Median	P10	P90
Fund_AUM ($ million)	2,443	226.11	70.83	12.51	535.65
Fund_Age (month)	2,476	73.93	57.67	19.00	148.65
Family_AUM ($ million)	2,458	2,036.03	395.11	40.21	3,825.59
Family_Age (month)	2,476	119.91	111.00	39.00	210.27
Management Fee (%)	2,461	1.42	1.50	1.00	2.00
Incentive Fee (%)	2,460	16.77	20.00	5.00	20.00
Minimum Investment ($ million)	2,474	1.88	1.00	0.10	3.00
Lockup	2,476	0.37	0.00	0.00	1.00
Lockup Period (month)	2,476	4.69	0.00	0.00	12.00
Redemption Notice Period (days)	2,476	47.67	45.00	10.00	90.00
HWM	2,461	0.76	1.00	0.00	1.00
Personal Capital	2,476	0.30	0.00	0.00	1.00
Leveraged	2,476	0.57	1.00	0.00	1.00

Notes. This table presents summary statistics of sample hedge fund characteristics. Fund characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. To ensure accuracy, we require the name from Lipper TASS to be exactly the same as the company name from the SEC. In addition, when the company's address is available, we require the addresses from the two data sources to match as well. We then only keep funds that report net returns on a monthly basis in U.S. dollars. We retain both live and defunct funds in the sample to remove survivorship bias. We remove the observations before a fund's entry date to Lipper TASS and before it reaches $10 million in total net assets to mitigate the backfilling bias. Our final sample includes 2,476 hedge funds. The sample period is 2001–2014. The table reports fund characteristics including fund AUM, fund age, fund-family AUM, fund-family age, management fee, incentive fee, minimum investment requirement, lockup period length, redemption notice period length, use of an HWM provision, use of personal capital, and use of leverage. P10 and P90 are the 10th and 90th percentiles, respectively. Detailed descriptions of the eight categories of affiliated institutions are in the appendix.

Table 2. Summary Statistics: Fraction of Hedge Fund Companies with Financial Industry Affiliation

Fraction	Affiliation
Bank	0.123
BrokerDealer	0.303
FuturesCTA	0.339
Insurance	0.078
InvestAdv	0.541
InvestComp	0.187
Pension	0.037
SponsorLLP	0.370

Notes. This table presents summary statistics of financial industry affiliation variables. Fund characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. To ensure accuracy, we require the name from Lipper TASS to be exactly the same as the company name from the SEC. In addition, when the company's address is available, we require the addresses from the two data sources to match as well. We then only keep funds that report net returns on a monthly basis in U.S. dollars. We retain both live and defunct funds in the sample in order to remove survivorship bias. We remove the observations before a fund's entry date to Lipper TASS and before it reaches $10 million in total net assets to mitigate the backfilling bias. Our final sample includes 2,476 hedge funds. The sample period is 2001–2014. The table presents the fractions of the hedge funds that are affiliated with each of the eight categories of financial institutions. Detailed descriptions of the eight categories of affiliated institutions are in the appendix.

of –0.186% is statistically significant (*t*-statistic = –3.44). The difference in returns between affiliated and unaffiliated funds is negative and statistically significant in all eight categories of financial institutions that we consider. Recall that unaffiliated funds are funds without any financial industry affiliations.[13] As a result, the numbers in column "*FIN* = 0" are identical across all categories of financial institutions except for "InvestComp." The investment company category ceased to exist in Form ADV after 2012, so the sample period for this category is different from the other categories.

Controlling for the seven factors of Fung and Hsieh (2004) does not qualitatively change the results. The difference in seven-factor alphas between affiliated and unaffiliated funds is negative in all categories of financial institutions and statistically significant in six of them. We note that this performance difference is because of unaffiliated funds significantly outperforming their benchmarks rather than affiliated funds underperforming their benchmarks. That is, both affiliated and unaffiliated funds tend to exhibit positive seven-factor alphas. This finding is consistent with the prevailing evidence in the literature that hedge funds, as a group, generate positive abnormal returns Kosowski et al (2007).

In panel B of Table 3, we examine whether the underperformance of affiliated funds shows up in

gross returns. To compute gross returns, we add the management fee and incentive fee to net returns. We follow the approach of Agarwal et al. (2009) in estimating the incentive fees received by fund managers. Using gross returns, we continue to find that affiliated funds significantly underperform unaffiliated funds. For example, bank-affiliated hedge funds underperform unaffiliated funds by 0.221% per month (*t*-statistic = 4.03).[14] The difference between affiliated and unaffiliated funds is negative and significant in all eight categories of financial institutions. The findings are qualitatively similar when we examine seven-factor alphas.

3.1.2. Fama–MacBeth Regressions. Previous studies have identified a number of fund characteristics that impact hedge fund returns. For example, Aragon (2007) shows that share restrictions are positively related to fund performance. Agarwal et al. (2009) find that managerial incentives influence hedge fund returns. Teo (2009) documents an inverse relation between fund size and fund performance. To control for these determinants of hedge fund returns, we estimate a regression model of fund returns on financial industry affiliation along with various controls:

$$Ret_{i,t} = \alpha + \beta FIN_{i,t} + \gamma \mathbf{X}_i + e_{i,t}, \qquad (1)$$

where the dependent variable $Ret_{i,t}$ is the monthly return of hedge fund i in month t. The independent variable of interest is the *FIN* dummy variable. The set of control variables ($\mathbf{X}_i$) includes lagged fund size, lagged fund-family size, incentive fee, management fee, the use of the HWM provision, the use of personal capital, the use of a lockup provision, and the average return for hedge funds with the same style. We refer readers to Agarwal et al. (2015) for detailed discussions of these determinants of cross-sectional hedge fund returns. We estimate regression Equation (1) month by month and evaluate the statistical significance of regression coefficients by using the Fama–MacBeth procedure.

Panel A of Table 4 presents the regression results for net returns. There are eight regression models in this table corresponding to the eight categories of financial industry affiliations. The heading of each column indicates the particular *FIN* variable used in the model. For instance, the column with the heading "Bank" shows the results when the affiliation is with banks. We find that the coefficient on *FIN* is negative in all eight regressions and statistically significant in six of them. This finding is consistent with our portfolio result that affiliated funds underperform unaffiliated funds. For example, the coefficient on *FIN* in column (1) is –0.249 (*t*-statistic = –3.70), suggesting that bank-affiliated funds, on average, underperform

Table 3. Financial Industry Affiliation and Hedge Fund Performance—Univariate Portfolios

	Raw return			Seven-factor alpha		
Affiliation	FIN = 1	FIN = 0	Difference	FIN = 1	FIN = 0	Difference
			Panel A: Net returns			
Bank	0.282 (2.34)	0.468 (3.70)	−0.186 (−3.44)	0.033 (0.52)	0.196 (2.72)	−0.163 (−2.99)
BrokerDealer	0.327 (2.58)	0.468 (3.70)	−0.141 (−2.66)	0.087 (1.25)	0.196 (2.72)	−0.109 (−2.02)
FuturesCTA	0.350 (3.03)	0.468 (3.70)	−0.118 (−2.47)	0.120 (1.73)	0.196 (2.72)	−0.076 (−1.62)
Insurance	0.286 (2.74)	0.468 (3.70)	−0.182 (−2.95)	0.028 (0.40)	0.196 (2.72)	−0.168 (−3.04)
InvestAdv	0.357 (2.77)	0.468 (3.70)	−0.111 (−2.03)	0.133 (1.84)	0.196 (2.72)	−0.063 (−1.16)
InvestComp	0.198 (1.13)	0.437 (2.93)	−0.239 (−2.66)	−0.008 (−0.08)	0.158 (1.80)	−0.166 (−1.94)
Pension	0.260 (2.17)	0.468 (3.70)	−0.208 (−2.69)	0.027 (0.34)	0.196 (2.72)	−0.169 (−2.24)
SponsorLLP	0.286 (2.17)	0.468 (3.70)	−0.182 (−3.09)	0.053 (0.72)	0.196 (2.72)	−0.143 (−2.46)
			Panel B: Gross returns			
Bank	0.515 (4.16)	0.736 (5.76)	−0.221 (−4.03)	0.261 (3.97)	0.465 (6.34)	−0.204 (−3.68)
BrokerDealer	0.569 (4.37)	0.736 (5.76)	−0.167 (−3.20)	0.321 (4.42)	0.465 (6.34)	−0.144 (−2.72)
FuturesCTA	0.611 (5.24)	0.736 (5.76)	−0.125 (−2.69)	0.376 (5.30)	0.465 (6.34)	−0.089 (−1.96)
Insurance	0.484 (4.38)	0.736 (5.76)	−0.252 (−4.04)	0.220 (2.90)	0.465 (6.34)	−0.245 (−4.27)
InvestAdv	0.618 (4.79)	0.736 (5.76)	−0.118 (−2.34)	0.387 (5.26)	0.465 (6.34)	−0.078 (−1.55)
InvestComp	0.432 (2.45)	0.709 (4.73)	−0.277 (−3.30)	0.209 (2.22)	0.435 (4.89)	−0.226 (−2.79)
Pension	0.455 (3.54)	0.736 (5.76)	−0.281 (−3.47)	0.214 (2.49)	0.465 (6.34)	−0.251 (−3.16)
SponsorLLP	0.538 (3.99)	0.736 (5.76)	−0.198 (−3.38)	0.297 (3.80)	0.465 (6.34)	−0.168 (−2.90)

Notes. This table compares the performance between affiliated and unaffiliated hedge funds. Fund returns are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation data are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014, with 168 monthly observations. *FIN* is a dummy variable of financial industry affiliation, which equals one if the hedge fund is affiliated with a certain type of financial institution and zero if the fund does not have any financial industry affiliation. We form equal-weighted portfolios of affiliated funds (*FIN* = 1) and unaffiliated funds (*FIN* = 0). We compute the average raw returns of the portfolios, and we also regress the portfolio returns on the seven factors of Fung and Hsieh (2004) to obtain seven-factor alphas. The average number of funds per month ranges from 24 to 347 for *FIN* = 1 and from 174 to 176 for *FIN* = 0 across the eight types of affiliations. Panel A is based on net returns, and panel B is based on gross returns. We estimate funds' gross returns by following the approach of Agarwal et al. (2009). Returns and alphas are expressed in percent per month. Numbers in parentheses are *t*-statistics.

unaffiliated funds by approximately 3% per year after controlling for other fund characteristics.

The estimated coefficients on control variables are generally consistent with those in the prior literature. For example, similar to Aragon (2007), we find that funds using a lockup provision have higher returns. Results in panel B of Table 4 based on gross returns paint a similar picture. We find that the coefficient on *FIN* is negative and statistically significant in all eight regressions.

3.1.3. Difference-in-Difference Analysis. Tables 3 and 4 present strong evidence that affiliated funds underperform unaffiliated funds by using univariate portfolio sorts and Fama–MacBeth regressions, respectively. In these two analyses, we exploit variations in financial industry affiliations across funds and evaluate the impact on the cross section of fund performance. In this section, we use a difference-in-difference approach to exploit variations in financial industry affiliations

over time. Specifically, we construct a sample of hedge funds that experienced affiliation changes because of M&As by using the ownership data reported on Form ADV filings.[15] We then combine this sample with the sample of funds that did not experience any affiliation changes to perform the difference-in-difference analysis. Specifically, we follow Bertrand and Mullainathan (2003) and estimate the following regression:

$$Ret_{i,t} = \alpha_i + \alpha_t + \delta FIN_{i,t} + \gamma \mathbf{X}_i + e_{i,t}, \quad (2)$$

where the dependent variable $Ret_{i,t}$ is the monthly return of hedge fund i in month t. The terms α_i and α_t are the fund and year fixed effects, respectively. The control variables include lagged fund size, lagged fund age, lagged fund-family size, and style returns. We cluster standard errors at the fund level. This regression specification accounts for the fact that financial industry affiliation changes are staggered over time. The staggered change of the affiliation

Table 4. Financial Industry Affiliation and Hedge Fund Performance—Fama–MacBeth Regressions

Variable	(1) Bank	(2) BrokerDealer	(3) FuturesCTA	(4) Insurance	(5) InvestAdv	(6) InvestComp	(7) Pension	(8) SponsorLLP
Panel A: Net returns								
Intercept	−0.779	−0.279	−0.382	−0.327	−0.532	−0.170	−0.688	−0.022
	(−2.03)	(−0.80)	(−0.87)	(−0.75)	(−1.80)	(−0.32)	(−1.38)	(−0.06)
FIN_t	−0.249	−0.090	−0.119	−0.235	−0.093	−0.252	−0.306	−0.112
	(−3.70)	(−1.53)	(−1.96)	(−3.70)	(−1.35)	(−2.59)	(−3.18)	(−1.88)
$\log(Fund\_AUM)_{t-1}$	0.013	0.010	0.021	0.032	0.029	−0.011	0.025	0.040
	(0.54)	(0.48)	(1.13)	(1.24)	(1.25)	(−0.39)	(0.86)	(1.82)
$\log(Family\_AUM)_{t-1}$	0.034	0.010	0.004	−0.002	0.000	0.025	0.022	−0.029
	(1.59)	(0.49)	(0.23)	(−0.08)	(0.00)	(0.78)	(0.90)	(−1.44)
HWM	0.095	0.133	0.052	0.059	0.115	0.164	0.064	0.095
	(1.53)	(2.54)	(1.16)	(1.00)	(2.33)	(2.01)	(0.94)	(1.80)
Incentive fee	−0.001	−0.010	−0.005	−0.008	−0.002	−0.011	−0.003	−0.008
	(−0.23)	(−3.53)	(−1.78)	(−1.98)	(−0.77)	(−2.33)	(−0.77)	(−2.48)
Management fee	−0.119	−0.005	−0.016	−0.086	−0.023	−0.108	−0.132	−0.072
	(−1.47)	(−0.07)	(−0.30)	(−0.99)	(−0.37)	(−1.16)	(−1.42)	(−0.93)
Personal capital	0.058	0.038	0.004	0.013	0.016	0.014	0.014	−0.036
	(1.01)	(0.75)	(0.09)	(0.19)	(0.37)	(0.19)	(0.20)	(−0.70)
Lockup	0.126	0.135	0.111	0.152	0.096	0.249	0.163	0.143
	(2.44)	(2.52)	(2.25)	(2.66)	(2.08)	(3.15)	(2.66)	(2.95)
Style control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.149	0.131	0.168	0.155	0.136	0.151	0.162	0.154
Panel B: Gross returns								
Intercept	−1.248	−0.459	−0.757	−0.676	−0.844	−0.522	−1.208	−0.386
	(−3.06)	(−1.28)	(−1.69)	(−1.44)	(−2.83)	(−0.89)	(−2.25)	(−0.96)
FIN_t	−0.290	−0.096	−0.146	−0.300	−0.111	−0.286	−0.401	−0.116
	(−4.09)	(−1.67)	(−2.46)	(−4.47)	(−1.73)	(−2.97)	(−3.88)	(−2.00)
$\log(Fund\_AUM)_{t-1}$	0.022	0.015	0.024	0.046	0.039	−0.011	0.040	0.047
	(0.88)	(0.70)	(1.32)	(1.68)	(1.68)	(−0.39)	(1.28)	(2.12)
$\log(Family\_AUM)_{t-1}$	0.040	0.007	0.011	−0.005	−0.001	0.035	0.028	−0.025
	(1.80)	(0.39)	(0.60)	(−0.20)	(−0.04)	(1.05)	(1.07)	(−1.24)
HWM	0.061	0.092	0.024	0.023	0.075	0.128	0.010	0.071
	(0.98)	(1.77)	(0.54)	(0.38)	(1.49)	(1.53)	(0.15)	(1.36)
Incentive fee	0.005	−0.007	−0.001	−0.004	0.002	−0.009	0.003	−0.004
	(1.00)	(−2.32)	(−0.42)	(−0.92)	(0.62)	(−1.72)	(0.63)	(−1.21)
Management fee	−0.041	0.097	0.085	−0.015	0.075	−0.015	−0.071	0.015
	(−0.48)	(1.35)	(1.49)	(−0.17)	(1.19)	(−0.16)	(−0.73)	(0.19)
Personal capital	0.053	0.032	0.015	0.006	0.009	0.018	0.010	−0.029
	(0.89)	(0.62)	(0.03)	(0.09)	(0.22)	(0.24)	(0.14)	(−0.53)
Lockup	0.164	0.159	0.154	0.200	0.126	0.317	0.212	0.177
	(2.99)	(2.98)	(3.08)	(3.35)	(2.77)	(3.99)	(3.31)	(3.59)
Style control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.153	0.132	0.163	0.157	0.13	0.155	0.164	0.149

Notes. This table reports results of the Fama–MacBeth regression of hedge fund returns on financial industry affiliation variables and other fund characteristics. Fund returns and characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation data are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. There are eight regression models in the table, and the heading of each column indicates the *FIN* variable used in the regression. The variable *FIN* is a dummy variable of financial industry affiliation, which equals one if the hedge fund is affiliated with a certain type of financial institution and zero if the fund does not have any financial industry affiliation. The variable $\log(Fund\_AUM)_{t-1}$ is the log of lagged fund size; $\log(Family\_AUM)_{t-1}$ is the log of lagged family size; and *HWM*, *Personal capital*, and *Lockup* are dummy variables for the use of the HWM provision, personal capital, and a lockup period, respectively. Management fees and incentive fees are measured in percent. We also control for the style returns in the regression. We estimate 168 cross-sectional regressions, one for each month. The average number of funds per month ranges from 181 to 470 across the eight regression models. Panel A is based on net returns, and panel B is based on gross returns. We estimate funds' gross returns by following the approach of Agarwal et al. (2009). Returns are expressed in percent per month. Numbers in parentheses are *t*-statistics. The average adjusted R^2 is also reported.

dummy also means that our control group is not restricted to funds that never experienced a change during the sample years. It implicitly takes as the control group all funds without affiliation change at time t, even if they have already experienced a change or will experience a change later on.

We present the results in Table 5. As in Table 4, we estimate the regression model separately for each of the eight financial industry affiliation categories, and our dependent variable is net returns in panel A and gross returns in panel B. We note that the number of control variables included in the difference-in-difference analysis is smaller than those included in the Fama–MacBeth regressions in Table 4. This is because fund characteristics (e.g., incentive fee) reported in the Lipper TASS database are not historical. They are as of the vintage date and are time invariant. Because we already include fund fixed

Table 5. Financial Industry Affiliation and Hedge Fund Performance—Difference-in-Difference Analysis

Variable	(1) Bank	(2) BrokerDealer	(3) FuturesCTA	(4) Insurance	(5) InvestAdv	(6) InvestComp	(7) Pension	(8) SponsorLLP
Panel A: Net returns								
Intercept	6.996	6.977	7.328	6.962	7.290	9.126	7.689	7.705
	(7.41)	(9.25)	(8.58)	(6.96)	(10.62)	(8.79)	(7.00)	(9.02)
FIN_t	−1.060	−0.424	−0.183	−1.066	−0.269	−0.470	−1.252	−0.018
	(−4.41)	(−1.86)	(−0.91)	(−4.59)	(−2.26)	(−1.26)	(−5.95)	(−0.18)
$\log(Fund\_AUM)_{t-1}$	−0.256	−0.305	−0.261	−0.197	−0.274	−0.407	−0.257	−0.331
	(−5.03)	(−6.77)	(−5.45)	(−3.03)	(−6.57)	(−6.47)	(−3.58)	(−6.84)
$\log(Family\_AUM)_{t-1}$	−0.107	−0.058	−0.110	−0.161	−0.077	−0.092	−0.156	−0.079
	(−1.86)	(−1.27)	(−2.04)	(−2.37)	(−1.83)	(−1.59)	(−2.09)	(−1.49)
$\log(Fund\_Age)_{t-1}$	−0.011	−0.031	−0.09	−0.046	−0.143	0.021	0.00	−0.044
	(−0.14)	(−0.47)	(−1.46)	(−0.49)	(−2.78)	(0.22)	(0.00)	(−0.71)
Style control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.331	0.307	0.336	0.329	0.308	0.350	0.323	0.305
Panel B: Gross returns								
Intercept	7.710	7.505	7.896	7.964	7.868	10.103	8.730	8.157
	(6.93)	(8.33)	(7.92)	(6.71)	(9.83)	(8.55)	(6.71)	(8.52)
FIN_t	−1.273	−0.579	−0.222	−1.218	−0.283	−0.374	−1.482	−0.016
	(−5.11)	(−2.20)	(−0.99)	(−5.09)	(−2.21)	(−0.80)	(−6.03)	(−0.14)
$\log(Fund\_AUM)_{t-1}$	−0.278	−0.328	−0.291	−0.224	−0.306	−0.452	−0.29	−0.369
	(−4.89)	(−6.36)	(−5.40)	(−3.11)	(−6.53)	(−6.45)	(−3.69)	(−6.85)
$\log(Family\_AUM)_{t-1}$	−0.122	−0.054	−0.11	−0.183	−0.073	−0.099	−0.167	−0.069
	(−1.80)	(−0.99)	(−1.73)	(−2.31)	(−1.47)	(−1.47)	(−1.91)	(−1.12)
$\log(Fund\_Age)_{t-1}$	−0.01	−0.06	−0.096	−0.068	−0.160	−0.008	−0.042	−0.034
	(−0.11)	(−0.71)	(−1.33)	(−0.65)	(−2.60)	(−0.08)	(−0.37)	(−0.46)
Style control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.339	0.313	0.342	0.341	0.309	0.360	0.335	0.310

Notes. This table reports results of the panel regression of hedge fund returns on financial industry affiliation variables and fund characteristics while controlling for fund and year fixed effects. Fund return and characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation data are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. We then construct a sample of hedge funds that experienced affiliation changes because of merger and acquisitions by using the ownership data reported in Schedules A and B of Form ADV filings. We combine this sample with the sample of funds that did not experience any affiliation changes to arrive at our final sample. We estimate the following regression equation for the difference-in-difference analysis: $Ret_{i,t} = \alpha_i + \alpha_t + \delta FIN_{i,t} + \gamma Control + e_{i,t}$, where α_i and α_t capture the fund and year fixed effects, respectively. There are eight regression models in the table, and the heading of each column indicates the *FIN* variable used in the regression. The variable *FIN* is a dummy variable of financial industry affiliation, which equals one if the hedge fund is affiliated with a certain type of financial institution and zero if the fund does not have any financial industry affiliation. The variable $\log(Fund\_AUM)_{t-1}$ is the log of lagged fund size; $\log(Family\_AUM)_{t-1}$ is the log of lagged family size; and $\log(Fund\_Age)_{t-1}$ is the log of lagged fund age. We also control for the style returns in the regression. The number of fund-month observations ranges from 30,141 to 67,827 across the eight panel regression models. Panel A is based on net returns, and panel B is based on gross returns. We estimate funds' gross returns by following the approach of Agarwal et al. (2009). Returns are expressed in percent per month. Standard errors are clustered at the fund level. Numbers in parentheses are *t*-statistics. The adjusted R^2 is also reported.

effects in regression Equation (2), we cannot include any fund characteristics that do not vary during the life of a fund.

The results in Table 5 continue to indicate a negative relation between financial industry affiliation and hedge fund performance. In panel A, the coefficient on the financial industry affiliation dummy is negative in all eight categories of financial institutions and statistically significant in five of them. The gross return results reported in panel B are qualitatively the same. The coefficient on *FIN* is negative in all eight regressions and statistically significant in the same five categories as in panel A. We note that the coefficient estimates on *FIN* in Table 5 are much larger than those in Table 4. This is primarily because of differences in specifications. In Table 4, the coefficient on *FIN* captures the cross-sectional performance difference between affiliated and unaffiliated funds. In Table 5, the coefficient on *FIN* captures the time-series performance change around affiliation changes for a subsample of funds that experienced such affiliation changes because of M&As. To the extent that financial industry affiliation impacts fund performance, the difference-in-difference analysis in Table 5 is likely to capture this impact more sharply (by controlling for fund and year fixed effects and by focusing on a subset of funds that experienced affiliation changes) than the analysis in Table 4, thus explaining the larger coefficients in Table 5.

In summary, the results from portfolio sorts, Fama–MacBeth regressions, and difference-in-difference analyses suggest that affiliated funds underperform unaffiliated funds. This evidence is consistent with the conflict-of-interest hypothesis. We emphasize that our results do not imply that the superior-information effect does not exist; they simply suggest that the superior-information effect, if it exists, is dominated by the conflict-of-interest effect.

3.2. Hedge Fund Failure

Hedge funds report their returns voluntarily to commercial databases including Lipper TASS. They might cease reporting when they have poor performance. Therefore, reported returns might not fully capture the underperformance of affiliated funds. To supplement our return analysis, we study the relation between financial industry affiliation and hedge fund failure in this section. To the extent that affiliated hedge funds underperform and poorly performing funds are more likely to drop out of the hedge fund database, we expect affiliated funds to exhibit a higher probability of attrition than unaffiliated funds.

The Lipper TASS database reports both live funds and defunct funds, and it also provides reasons for funds dropping out of the database. These reasons include liquidation, stopped reporting, unable to contact,

closed to new investment, merged into another fund, and dormant funds. Baquero et al. (2005) and Liang and Park (2010) argue that it might be misleading to regard all the funds in the graveyard as failures because funds might drop out of the database because of mergers or being closed to new investors when they reach the full capacity of the strategy. We follow Liang and Park (2010) and identify fund failures when (1) a fund moves to the graveyard and (2) the reason for the dropout is either "liquidated" or "unable to contact."

We examine the relation between financial industry affiliation and hedge fund failure by estimating a logistic model. We follow existing studies (e.g., Liang and Park 2010) and include the following control variables: the standard deviation of fund returns during the past year, lagged fund size, lagged fund age, past one-year return of the fund, and dummy variables for the use of the HWM provision, personal capital, leverage, and a lockup period for the fund. We also control for fund style effect and year dummy variables. Similar to Table 5, we cluster standard errors at the fund level when drawing statistical inferences.

Table 6 presents the results. We find that the estimated coefficient on *FIN* is positive in all specifications, suggesting that financial industry affiliation is associated with a higher probability of fund failure. The result is statistically significant at the 5% level in seven of the eight categories of financial institutions. The results for the control variables are intuitive and consistent with prior literature. For example, larger and older funds are less likely to fail. In addition, past fund performance is a critical determinant of fund failure. The negative and highly significant coefficient on past one-year return suggests that the lower the past return is, the more likely the fund will be liquidated. Overall, Table 6 shows that affiliated hedge funds are more likely to fail, which lends additional support to the conflict-of-interest hypothesis.

3.3. Number of Financial Industry Affiliations

If the lower performance of affiliated hedge funds is because of conflicts of interest, we would expect this effect to be more pronounced when the number of financial industry affiliations is greater. Specifically, we argue that the broader the range of a financial institution's services, the greater is the cross-selling pressure and the greater is the probability that an affiliated hedge fund will face potential conflicts of interest. Moreover, the more business units that a financial institution has, the more difficult it is to prevent conflict-of-interest exploitation and, therefore, the higher are the agency costs faced by hedge fund investors. To test this hypothesis, we construct an index variable *FIN_Index* by summing up the eight

Table 6. Financial Industry Affiliation and Hedge Fund Failure

Variable	(1) Bank	(2) BrokerDealer	(3) FuturesCTA	(4) Insurance	(5) InvestAdv	(6) InvestComp	(7) Pension	(8) SponsorLLP
Intercept	0.523	2.145	1.730	0.755	2.852	1.782	0.939	1.924
	(0.544)	(0.002)	(0.010)	(0.388)	(<0.001)	(0.046)	(0.359)	(0.004)
FIN_t	0.453	0.296	0.381	0.599	0.182	0.341	0.342	0.258
	(0.001)	(0.004)	(<0.001)	(<0.001)	(0.044)	(0.009)	(0.111)	(0.011)
Stdev of returns$_{t-1}$	−1.725	−0.317	−0.035	−1.421	0.974	0.687	−1.756	−0.106
	(0.604)	(0.888)	(0.987)	(0.682)	(0.588)	(0.790)	(0.637)	(0.960)
$\log(AUM)_{t-1}$	−0.244	−0.298	−0.237	−0.248	−0.307	−0.273	−0.263	−0.252
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
$\log(Age)_{t-1}$	0.090	0.021	−0.002	0.170	0.107	0.112	0.113	0.068
	(0.208)	(0.710)	(0.976)	(0.024)	(0.020)	(0.119)	(0.198)	(0.195)
$Return_{t-1}$	−23.494	−26.287	−24.370	−21.674	−19.314	−22.197	−17.482	−22.192
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.001)	(<0.001)
HWM	−0.185	0.088	−0.010	−0.035	0.020	−0.013	−0.165	0.017
	(0.201)	(0.447)	(0.930)	(0.820)	(0.834)	(0.927)	(0.362)	(0.880)
Personal capital	−0.240	−0.177	−0.184	−0.410	−0.239	−0.355	−0.471	−0.288
	(0.068)	(0.094)	(0.075)	(0.003)	(0.007)	(0.009)	(0.002)	(0.005)
Leveraged	−0.030	−0.177	−0.185	0.097	−0.220	0.042	0.138	−0.206
	(0.801)	(0.066)	(0.059)	(0.434)	(0.008)	(0.725)	(0.329)	(0.027)
Lockup	0.245	0.060	0.085	0.137	−0.027	0.079	0.201	−0.033
	(0.055)	(0.546)	(0.390)	(0.271)	(0.751)	(0.514)	(0.149)	(0.728)
Style fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.059	0.056	0.049	0.056	0.049	0.052	0.054	0.046

Notes. This table reports the results on the logit regression of hedge fund failure. Hedge fund data are obtained from Lipper TASS, and financial industry affiliation data are obtained from Form ADV filings. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. We identify fund failure when the fund is moved to the graveyard, and the dropout reason provided by Lipper TASS is either "liquidated" or "unable to contact." The model is estimated on a yearly basis. There are eight models in the table with the heading indicating the *FIN* variable. The variable *FIN* is a dummy variable, which equals one if the hedge fund is affiliated with a certain type of financial institution and zero if it does not have any affiliation. The variable *Stdev of returns$_{t-1}$* is the standard deviation of fund returns over the past year; $\log(AUM)_{t-1}$ is the log of lagged fund size; $\log(Age)_{t-1}$ is the log of lagged fund age; $Return_{t-1}$ is the fund return during the past year; and *HWM, Personal capital, Leveraged,* and *Lockup* are the dummy variables for the use of HWM provision, personal capital, leverage, and a lockup period, respectively. The number of fund-year observations ranges from 2,962 to 7,762 across the eight models. The model also adjusts for style and year fixed effects. Standard errors are clustered at the fund level. Numbers in parentheses are *p*-values.

financial industry affiliation dummy variables. We then repeat our fund performance analysis by using *FIN_Index* as the explanatory variable.

Table 7 presents the frequency distribution of *FIN_ Index*. More than a quarter (26.63%) of the hedge fund companies are not affiliated with any financial institutions,

Table 7. Number of Financial Industry Affiliations and Hedge Fund Performance: Frequency Distribution of *FIN_Index*

	FIN_Index								
Variable	0	1	2	3	4	5	6	7	8
% Frequency	26.63	25.61	18.81	11.35	6.31	3.74	3.40	2.22	1.93

Notes. This table reports the results of the analyses based on the number of financial industry affiliations. Fund returns and characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation data are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. The variable *FIN* is a dummy variable, which equals one if the hedge fund is affiliated with a certain type of financial institution and zero if it does not have any affiliation, and *FIN_Index* is the sum of the eight financial industry affiliation dummy variables. Detailed descriptions of the eight types of affiliated institutions are in the appendix. The variable *FIN_Index* ranges from zero to eight. We report the frequency distribution of the *FIN_Index* across the sample funds.

whereas the rest are affiliated with at least one financial institution. Nearly half the fund companies have more than one financial industry affiliation, with the maximum being eight. Table 8 presents the regression results. We find significant evidence that the performance of affiliated funds is decreasing in the number of financial industry affiliations. The coefficient on *FIN_Index* is –0.04 (*t*-statistic = –4.26) in column (1), suggesting that funds affiliated with all eight types of financial institutions underperform funds with no affiliations by 0.32% per month (4 basis points × 8). This result is robust to the control of other fund characteristics such as fund size and incentive

Table 8. Number of Financial Industry Affiliations and Hedge Fund Performance: Number of Affiliations and Performance

Variable	Net return		Gross return	
	(1)	(2)	(3)	(4)
Intercept	0.068	–0.237	0.075	–0.521
	(2.12)	(–0.77)	(2.14)	(–1.67)
FIN_Index_t	–0.040	–0.033	–0.045	–0.037
	(–4.26)	(–3.41)	(–4.75)	(–3.96)
$\log(Fund\_AUM)_{t-1}$		0.025		0.031
		(1.38)		(1.75)
$\log(Family\_AUM)_{t-1}$		–0.011		–0.011
		(–0.61)		(–0.61)
HWM		0.079		0.047
		(2.15)		(1.22)
Incentive fee		–0.004		0.001
		(–1.64)		(0.07)
Management fee		0.006		0.107
		(0.11)		(1.97)
Personal capital		0.021		0.026
		(0.57)		(0.74)
Lockup		0.124		0.158
		(2.94)		(3.85)
Style control	Yes	Yes	Yes	Yes
R^2	0.110	0.133	0.109	0.129

Notes. This table reports the results of the analyses based on the number of financial industry affiliations. Fund returns and characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation data are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. We report results of the Fama–MacBeth regression of hedge fund returns on *FIN_Index* and other fund characteristics. The variable $\log(Fund\_AUM)_{t-1}$ is the log of lagged fund size; $\log(Family\_AUM)_{t-1}$ is the log of lagged family size; and *HWM*, *Personal capital*, and *Lockup* are dummy variables for the use of the HWM provision, personal capital, and a lockup period, respectively. Management fees and incentive fees are measured in percent. We also control for the style returns in the regression. The average number of funds per month ranges from 562 to 642 across the four regression models. We estimate funds' gross returns by following the approach of Agarwal et al. (2009). Returns are expressed in percent per month. Numbers in parentheses are *t*-statistics. The average adjusted R^2 is also reported.

fees and holds whether we examine net returns or gross returns.

3.4. Legal and Regulatory Violations
Thus far we have presented evidence that financial industry affiliation is negatively related to hedge fund performance, which is consistent with the conflict-of-interest hypothesis. To provide more direct evidence on this hypothesis, we conduct four additional tests in this and the next three sections. In this section, we examine a more direct measure of conflict of interest (i.e., histories of legal and regulatory violations by hedge funds in investment-related activities). Potential conflicts of interest are a fact of life in the hedge fund industry. The real question is whether such opportunities are exploited, thereby imposing agency costs on hedge fund investors. We argue that legal and regulatory violations are manifestations of conflicts of interests that are actually exploited.

We examine whether financial industry affiliation is related to the probability of hedge fund violations. Specifically, we estimate a logistic model of regulatory and legal violations on *FIN* and a set of control variables including lagged fund-family age, lagged fund-family size, lagged number of funds in the family, past violations of the family, past family returns, and year fixed effects. This analysis is conducted at the fund-family level, and correspondingly, we cluster standard errors at the fund-family level. Table 9 reports the results. There are eight models in this table corresponding to the eight affiliation categories. The coefficient on *FIN*, our primary variable of interest, is positive in all eight specifications. The result is statistically significant at the 1% level in seven of the eight models and significant at the 10% level in the remaining model. This result indicates that the presence of financial industry affiliation is associated with a higher probability of legal and regulatory violations by hedge fund companies. We note that the coefficient on past violations is positive and highly significant, suggesting the serial nature of these violations. Overall, consistent with the conflict-of-interest hypothesis, we find that affiliated hedge funds are more likely to commit legal and regulatory violations than unaffiliated funds. This finding is also consistent with Dimmock et al. (2018), who find that fraud is contagious within financial institutions.

3.5. Internal Conflicts
In the second test, we examine the relation between financial industry affiliation and potential internal conflicts of interest. We employ the same set of internal conflict variables examined by Brown et al. (2008). These variables capture the registered investment advisers' participation or interest in client transactions. For example, question A.1 in item 8 of

Table 9. Financial Industry Affiliation and Legal and Regulatory Violations

Variable	(1) Bank	(2) BrokerDealer	(3) FuturesCTA	(4) Insurance	(5) InvestAdv	(6) InvestComp	(7) Pension	(8) SponsorLLP
Intercept	−8.669	−10.602	−6.349	−17.180	−7.725	−20.541	−12.005	−7.049
	(0.014)	(0.001)	(0.011)	(<0.001)	(0.001)	(<0.001)	(0.142)	(0.043)
FIN_t	1.992	1.546	1.671	1.706	1.613	1.484	1.666	1.470
	(<0.001)	(0.006)	(0.003)	(0.007)	(0.002)	(0.008)	(0.095)	(0.006)
$\log(Family\_Age)_{t-1}$	−0.146	0.004	−0.071	−0.196	−0.184	0.002	−0.442	0.200
	(0.726)	(0.990)	(0.794)	(0.687)	(0.442)	(0.996)	(0.353)	(0.558)
$\log(Family\_AUM)_{t-1}$	0.193	0.254	0.010	0.082	0.130	0.251	−0.056	−0.082
	(0.245)	(0.096)	(0.945)	(0.729)	(0.238)	(0.136)	(0.906)	(0.690)
$\log(\# \ of \ Funds)_{t-1}$	−0.637	−0.269	−0.150	−0.322	−0.022	−0.512	−0.800	0.496
	(0.049)	(0.308)	(0.623)	(0.426)	(0.931)	(0.112)	(0.294)	(0.115)
$Family \ Return_{t-1}$	−8.718	−2.521	5.438	−27.475	−8.510	−8.492	−29.447	−13.086
	(0.328)	(0.833)	(0.726)	(0.020)	(0.456)	(0.344)	(0.059)	(0.228)
$Past \ Violations$	3.385	3.686	3.507	3.821	2.558	3.300	−9.605	2.514
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.055	0.040	0.034	0.046	0.020	0.039	0.012	0.021

Notes. This table reports the results on the logit regression of legal and regulatory violations of hedge fund companies. Fund characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliations and legal and regulatory violations data are obtained from Form ADV filings. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. We examine the investment-related disciplinary history in item 11 of Form ADV. We search the DRP of Form ADV for details on the violations. We focus on the violations committed by hedge fund companies themselves and use the *Date First Charged* to pin down the exact timing of the violation. The dependent variable is a dummy variable that equals one if there is violation for that hedge fund company in a given year and zero otherwise. The model is estimated at the hedge fund company-year level. There are eight regression models in the table, with the heading of each column indicating the *FIN* variable of interest. The variable *FIN* is a dummy variable of financial industry affiliation, which equals one if the hedge fund company is affiliated with a certain type of financial institution and zero if the hedge fund company does not have any affiliation. Detailed definitions of the eight categories of affiliated financial institutions are in the appendix. The variables $\log(Family\_Age)_{t-1}$ is the log of lagged family age; $\log(Family\_AUM)_{t-1}$ is the log of lagged family size; $\log(\# \ of \ Funds)_{t-1}$ is the log of the lagged number of funds in the family; *Family Return*$_{t-1}$ is the value-weighted return of funds in the family during the past one year; and *Past Violations* is an indicator variable, which equals one if there is a violation in the past. The model also adjusts for year fixed effects. The number of fund company-year observations ranges from 1,525 to 3,457 across the eight logit regression models. Standard errors are clustered at the hedge fund company level. Numbers in parentheses are *p*-values.

Form ADV asks whether the investment advisor trades directly with its advisory clients. We follow Brown et al. (2008) and focus on seven of these questions. We aggregate the seven responses and use the result as a measure of potential internal conflicts of interest.

We then use an ordered logit model to estimate the relation between financial industry affiliation and the number of internal conflicts. We use an ordered logit model because the value of the dependent variable ranges from zero to seven, with a higher value corresponding to a greater number of potential internal conflicts. The control variables include lagged fund-family age, lagged fund-family size, lagged number of funds in the family, and year fixed effects. We cluster standard errors at the fund-family level. The results reported in panel A of Table 10 indicate that the coefficient on *FIN* is positive and statistically significant in all eight categories of financial industry affiliations. Because more complex financial institutions are more likely to incur internal conflict, we additionally control for the number of affiliates (obtained from Form ADV) in this regression and present

the results in panel B. The coefficient on *FIN* is positive in seven of eight regressions and statistically significant in four of them. Overall, we find that affiliated hedge fund companies tend to exhibit a greater number of internal conflicts than unaffiliated hedge fund companies.

3.6. Investment Bank–Affiliated Hedge Funds

In our third test, we focus on investment bank–affiliated hedge funds and examine the funds' stock holdings of investment banking clients that have recently conducted IPOs or SEOs. Although affiliated hedge funds may have an incentive to hold these stocks to help win future investment banking deals, previous studies have shown that equity issuers underperform in the long run (Loughran and Ritter 1995). Therefore, evidence of overweighting equity issuers' stocks would be consistent with the conflict-of-interest hypothesis.

To test this hypothesis, we first compile a list of IPO/SEO issues during the period 2000–2014. We then match the book runners of these equity issues with the names of the related persons (i.e., affiliates)

Table 10. Financial Industry Affiliation and Internal Conflicts of Interest

Variable	(1) *Bank*	(2) *BrokerDealer*	(3) *FuturesCTA*	(4) *Insurance*	(5) *InvestAdv*	(6) *InvestComp*	(7) *Pension*	(8) *SponsorLLP*
				Panel A: Baseline model				
Intercepts	Included	Included	Included	Included	Included	Included	Included	Included
FIN_t	2.135	1.461	0.856	1.960	0.776	1.374	2.730	1.162
	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)
$\log(Family\_AUM)_{t-1}$	0.089	0.029	0.057	0.075	0.069	0.099	0.103	0.039
	(0.157)	(0.572)	(0.243)	(0.235)	(0.088)	(0.102)	(0.122)	(0.416)
$\log(Family\_Age)_{t-1}$	0.290	0.182	0.302	0.326	0.194	0.217	0.368	0.323
	(0.010)	(0.059)	(0.002)	(0.004)	(0.021)	(0.054)	(0.003)	(<0.001)
$\log(\#\ of\ Funds)_{t-1}$	−0.113	−0.007	−0.138	−0.106	−0.026	−0.126	−0.142	0.079
	(0.374)	(0.947)	(0.232)	(0.429)	(0.796)	(0.353)	(0.325)	(0.456)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.215	0.156	0.076	0.167	0.072	0.128	0.153	0.131
				Panel B: Control for number of affiliates				
Intercepts	Included	Included	Included	Included	Included	Included	Included	Included
FIN_t	1.077	0.783	0.163	0.462	0.216	0.472	−0.010	0.462
	(0.015)	(<0.001)	(0.375)	(0.332)	(0.116)	(0.062)	(0.993)	(0.010)
$\log(Family\_AUM)_{t-1}$	0.094	0.017	0.065	0.065	0.050	0.090	0.100	0.038
	(0.131)	(0.734)	(0.179)	(0.301)	(0.215)	(0.132)	(0.135)	(0.427)
$\log(Family\_Age)_{t-1}$	0.324	0.258	0.406	0.359	0.307	0.266	0.376	0.370
	(0.005)	(0.009)	(<0.001)	(0.002)	(<0.001)	(0.02)	(0.002)	(<0.001)
$\log(\#\ of\ Funds)_{t-1}$	−0.118	−0.021	−0.181	−0.145	−0.075	−0.206	−0.170	−0.027
	(0.34)	(0.85)	(0.096)	(0.267)	(0.432)	(0.106)	(0.229)	(0.796)
$\#\ Affiliates_t$	0.272	0.278	0.466	0.346	0.434	0.387	0.470	0.387
	(0.002)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(<0.001)	(0.004)	(<0.001)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.231	0.188	0.179	0.189	0.169	0.183	0.168	0.188

Notes. This table reports the results on the ordered logit regression of internal conflicts of hedge fund companies. Fund characteristics data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. We obtain the internal conflict of interest data from item 8 of Form ADV. Following Brown et al. (2008), we focus on proprietary interest in client transactions, sales interest in client transactions, and participation or interest in client transactions to measure the level of internal conflict of interest within the hedge fund company. We create dummy variables to indicate the following types of internal conflicts: (1) if the company buys and sells between itself and clients, (2) if a related party buys and sells securities also recommended to the fund, (3) if the fund recommends securities in which a related party has an ownership interest, (4) if the fund performs agency cross-transactions, (5) if a related party recommends securities to clients for which they are the underwriter, (6) if a related party recommends securities with a sales interest, and (7) if the fund uses external research. We construct an index by summing up all the dummy variables, with seven indicating the highest level of internal conflicts. We use this index as the dependent variable for the ordered logit regressions. The model is estimated at the hedge fund company-year level. There are eight regression models in the table, with the heading of each column indicating the *FIN* variable of interest. The variable *FIN* is a dummy variable of financial industry affiliation, which equals one if the hedge fund company is affiliated with a certain type of financial institution and zero if it does not have any industry affiliation. Detailed definitions of the eight categories of affiliated financial institutions are in the appendix. The variable $\log(Family\_AUM)_{t-1}$ is the log of lagged fund-family size; $\log(Family\_Age)_{t-1}$ is the log of lagged family age; $\log(\#\ funds)_{t-1}$ is the log of the lagged number of funds in the family, and $\#\ Affiliates_t$ is the number of other affiliates. The model includes year fixed effects. The number of fund company-year observations ranges from 1,608 to 3,649 across eight regression models. Standard errors are clustered at the hedge fund company level. Numbers in parentheses are *p*-values. Pseudo-R^2 is also reported.

of the hedge fund companies from Schedule D of Form ADV. For hedge fund companies that have related persons serving as the IPO/SEO book runners during our sample period, we extract their quarterly stock holdings from the 13F institutional holdings database. Finally, we compare the holdings of IPO/SEO clients' stocks and nonclient stocks by affiliated hedge funds.

Tables 11–13 report the results of this analysis. We find that a total of 154 hedge fund companies in our sample have affiliated IPO/SEO book runners during our sample period (Table 11). Among these 154 hedge fund companies, 74 also report quarterly stock holdings in the 13F database. Next, we compare the likelihood as well as the magnitude of the holdings of client and nonclient stocks. In panel A of Table 12,

Table 11. Holdings of IPO/SEO Client Stocks by Investment Bank–Affiliated Hedge Funds: Number of Investment Bank–Affiliated Hedge Fund Companies

Number	Variable
1. Number of hedge fund companies in our sample that are affiliated with investment banks that have served as book runners of IPOs or SEOs during 2001–2014	154
2. Number of hedge fund companies in item 1 that also report quarterly stock holdings in the 13F database	74

Notes. This table presents summary statistics of quarter-end stock holdings of IPO/SEO client stocks and nonclient stocks by investment bank–affiliated hedge fund companies. Hedge fund data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables and related person details are obtained from Form ADV filings with the SEC. Institutional stockholdings data are obtained from Thomson Reuters 13F. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. We also match the names from Lipper TASS and names from 13F to obtain hedge fund stock holdings. The sample period is 2001–2014. We obtain IPO and SEO data from the SDC New Issues Database. We extract the book runners' names for all IPO and SEO issues during 2000–2014 and match them with the names of the related persons from Schedule D of Form ADV filings in order to identify hedge fund companies that have affiliated book runners. We identify 154 hedge fund companies that are affiliated with book runners, and 74 of them have reported holdings data in 13F.

we find that affiliated hedge funds are twice as likely to hold client stocks as nonclient stocks (14.8% versus 7.6%). Moreover, when they hold client stocks, the average dollar holding is $26.3 million, which is significantly higher than the average dollar holding for the nonclient stocks in their portfolios ($19.3 million), as shown in panel B of Table 12. Panel C of Table 12 presents the average holding period of client and nonclient stocks by the affiliated hedge funds. On average, the holding period for client stocks is 1.76 quarters longer than that for nonclient stocks (9.16 versus 7.40 quarters). In Table 13, we examine the holdings performance. Specifically, we form a client stock portfolio (a nonclient stock portfolio) by aggregating client stock (nonclient stock) holdings across all the fund managers at each quarter end. We then hold these portfolios for one quarter and compute dollar holdings weighted returns. We show that the holdings of client stocks underperform those of nonclient stocks, although the differences are statistically insignificant. Overall, our results in Tables 11–13 are consistent with affiliated hedge funds supporting the investment banking division of the financial conglomerate by holding their investment banking clients' stocks.

3.7. Asset-Gathering Strategy
The fourth and final test builds on Fung et al. (2020), who show that hedge fund compensation models

incentivize managers to grow their assets by launching new funds. According to Fung et al. (2020), hedge funds do so to circumvent strategy-level capacity constraints and to take advantage of the nonnetting of incentive fees across funds. In particular, because incentive fees are calculated based on the performance of individual funds, a multiple-fund company derives significantly larger incentive fees than a single-fund company. More important, Fung et al. (2020) find that multiple-fund firms significantly underperform single-fund firms. That is, hedge fund families implement such asset-gathering strategies at the expense of fund performance.

We posit that hedge fund companies belonging to a financial conglomerate are more likely to pursue asset-gathering strategies than unaffiliated hedge fund companies. Financial conglomerates, by their nature, want to be a one-stop shop for all clients. They would

Table 12. Holdings of IPO/SEO Client Stocks by Investment Bank–Affiliated Hedge Funds: Probability of Holding, Average Dollar Holding, and Holding Periods

Client stocks	Nonclient stocks	Difference (*t*-statistic)
Panel A: Probability of holding, %		
14.8	7.6	7.2 (14.51)
Panel B: Average dollar holding, $		
26.3 million	19.3 million	7.0 million (5.25)
Panel C: Holding periods, quarters		
9.16	7.40	1.76 (10.07)

Notes. This table presents summary statistics of quarter-end stock holdings of IPO/SEO client stocks and nonclient stocks by investment bank-affiliated hedge fund companies. Hedge fund data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables and related person details are obtained from Form ADV filings with the SEC. Institutional stockholdings data are obtained from Thomson Reuters 13F. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. We also match the names from Lipper TASS and names from 13F to obtain hedge fund stock holdings. The sample period is 2001–2014. We obtain IPO and SEO data from the SDC New Issues Database. We extract the book runners' names for all IPO and SEO issues during 2000–2014 and match them with the names of the related persons from Schedule D of Form ADV filings in order to identify hedge fund companies that have affiliated book runners. We identify 154 hedge fund companies that are affiliated with book runners, and 74 of them have reported holdings data in 13F. Through the book runner–IPO/SEO stock pairs, we identify client stocks for each hedge fund company. We first compare the probability of holding client stocks with the probability of holding nonclient stocks for all manager-quarter observations. Results are reported in panel A. We then compute the average dollar holding of client stocks and the average dollar holding of nonclient stocks across all fund manager-quarters. Results are reported in panel B. In panel C, we compute the average holding period for client stocks and nonclient stocks across all the managers. The average number of stocks in the client stock portfolio is 585, and the number of stocks in the nonclient stock portfolio is 4,173.

Table 13. Holdings of IPO/SEO Client Stocks by Investment Bank–Affiliated Hedge Funds: Holdings Performance

Performance measure	Client stocks	Nonclient stocks	Difference (*t*-statistic)
One-factor alpha	−0.098	0.029	−0.127 (−0.98)
Three-factor alpha	−0.154	0.002	−0.156 (−1.22)
Four-factor alpha	−0.104	0.011	−0.115 (−0.93)

Notes. This table presents summary statistics of quarter-end stock holdings of IPO/SEO client stocks and nonclient stocks by investment bank-affiliated hedge fund companies. Hedge fund data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables and related person details are obtained from Form ADV filings with the SEC. Institutional stockholdings data are obtained from Thomson Reuters 13F. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. We also match the names from Lipper TASS and names from 13F to obtain hedge fund stock holdings. The sample period is 2001–2014. We obtain IPO and SEO data from the SDC New Issues Database. We extract the book runners' names for all IPO and SEO issues during 2000–2014 and match them with the names of the related persons from Schedule D of Form ADV filings in order to identify hedge fund companies that have affiliated book runners. We identify 154 hedge fund companies that are affiliated with book runners, and 74 of them have reported holdings data in 13F. Through the book runner–IPO/SEO stock pairs, we identify client stocks for each hedge fund company. We form client stock portfolio (nonclient stock portfolio) by aggregating client stock (nonclient stock) holdings across all the fund managers at each quarter end and then hold the portfolio for three months. We compute the dollar-weighted returns for the portfolios and regress the portfolio returns on Fama–French three factors and the momentum factor to obtain one-factor alpha, three-factor alpha, and four-factor alphas. There are a total of 168 months of returns. The average number of stocks in the client stock portfolio is 585, and the number of stocks in the nonclient stock portfolio is 4,173.

like to appeal to the widest range of investor objectives by creating a large number of funds spanning multiple investment categories even if they do not have expertise in all of them. In the meantime, financial conglomerates, because of their brand name and existing client base, are more capable of implementing such a strategy than independent hedge fund companies.[16] For example, Lu et al. (2020) show that affiliated hedge funds often take advantage of the advertising by their parent institutions to attract fund flows.

To provide evidence on the asset-gathering strategy, we examine the relation between financial industry affiliation, the number of funds, and the number of fund categories in a fund family. Tables 14 and 15 report the results of this analysis. Table 14 indicates that affiliated hedge fund companies manage more funds in more investment categories than unaffiliated fund companies. For example, bank-affiliated hedge fund companies have, on average, 5.67 funds, whereas unaffiliated fund companies have 2.84 funds. The difference of 2.83 funds is economically and statistically significant. The number of fund categories of bank-affiliated hedge fund companies is 1.73, compared with 1.27 for unaffiliated hedge fund companies.[17] The difference in the number of funds (and fund categories) between affiliated and unaffiliated fund companies is positive across all eight financial industry affiliation variables and statistically significant in all of them. Table 15 shows that fund companies with a large number of financial industry affiliations have significantly more funds and product categories than unaffiliated fund companies.

Overall, the results in Tables 14 and 15 are consistent with affiliated hedge fund companies engaging in asset-gathering strategies.

One might wonder why affiliated hedge funds would pursue a strategy that generates lower returns. After all, bad performance leads to lower incentive fees, lower fund flows, lower assets, and thus lower management fees. Fung et al. (2020) show that multiple-fund firms, despite their lower performance, are able to generate significantly greater total fee income than their single-fund counterparts. To be sure, affiliated hedge fund companies also want to maximize fund performance. However, performance maximization is not their only goal. Affiliated fund companies also have an interest in building a large amount of fund assets by creating a large number of funds and appealing to many investor objectives and market trends. It is in these goals where the interests of fund companies and fund investors diverge.

3.8. Additional Analyses
This section presents a number of additional analyses. To conserve space, we report the detailed results of these analyses in the online appendix.

3.8.1. Performance Changes Around Affiliation Changes. If financial conglomerates tend to acquire stand-alone hedge funds with superior past performance, then reversion to the mean would lead to a performance decline after funds become affiliated with financial conglomerates, thereby explaining the performance

Table 14. Financial Industry Affiliation, Number of Funds, and Number of Fund Categories: By *FIN*

	Number of funds			Number of categories		
Affiliation	FIN = 1	FIN = 0	Difference	FIN = 1	FIN = 0	Difference
Bank	5.67	2.84	2.83 (3.59)	1.73	1.27	0.46 (4.36)
BrokerDealer	4.73	2.84	1.89 (4.04)	1.62	1.27	0.35 (4.89)
FuturesCTA	5.10	2.84	2.26 (4.74)	1.64	1.27	0.37 (5.23)
Insurance	4.62	2.84	1.78 (3.45)	1.62	1.27	0.35 (3.53)
InvestAdv	4.65	2.84	1.81 (4.72)	1.55	1.27	0.28 (5.04)
InvestComp	5.12	2.82	2.30 (3.07)	1.58	1.27	0.31 (3.54)
Pension	5.32	2.84	2.48 (2.65)	1.79	1.27	0.52 (3.31)
SponsorLLP	4.05	2.84	1.21 (3.38)	1.46	1.27	0.19 (3.39)

Notes. This table reports the number of funds and the number of investment style categories in affiliated and unaffiliated hedge fund companies. Hedge fund data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. The table shows the number of funds for families sorted by *FIN*. The variable *FIN* is a dummy variable of financial industry affiliation, which equals one if the hedge fund company is affiliated with a certain type of financial institution and zero if the fund does not have any financial industry affiliation. Detailed definitions of the eight categories of affiliated financial institutions are in the appendix. The first column shows the *FIN* variable of interest. For affiliated and unaffiliated fund families, we report the average number of funds and the average number of investment style categories in each company. This is a hedge fund company-level analysis. The number of hedge fund companies ranges from 47 to 589 for *FIN* = 1 and from 423 to 459 for *FIN* = 0 across eight types of affiliations. Numbers in parentheses are *t*-statistics.

difference between affiliated and unaffiliated funds. To explore this possibility, we examine fund performance both before and after affiliation changes. The results from this analysis indicate that funds slightly outperform their peers prior to being affiliated with a financial institution, whereas they significantly underperform after becoming affiliated. This finding suggests that the majority of the performance decline around affiliation changes is because of the underperformance after hedge funds become affiliated with financial conglomerates.

3.8.2. Additional Evidence on Asset-Gathering Strategy. In Tables 14 and 15, we present evidence that affiliated hedge fund families manage a larger number of funds in more investment categories. This evidence is consistent with affiliated funds engaging in the asset-gathering strategy. In the online appendix, we confirm the result of Fung et al. (2020) that fund performance is negatively related to the number of funds in a family. We expand this analysis and document a similar relation between the number of fund categories and fund performance. Overall, these results are consistent with the hypothesis that affiliated hedge funds

underperform in part because they engage in asset-gathering strategies.

3.8.3. Equity Underwriting, M&A Advising, and Brokerage Deals. We argue that affiliated funds may pursue the interests of the financial conglomerate at the expense of fund performance. To provide evidence on how financial conglomerates might benefit from having affiliated hedge funds, we examine the number and size of equity underwriting, M&A advising, and brokerage deals across financial conglomerates with and without affiliated hedge funds. We obtain the equity issuance data and M&A data from the SDC database. We compare the total number and size of these deals across two groups of financial conglomerates—those with affiliated hedge funds and those without affiliated hedge funds. We show in the online appendix that financial conglomerates with affiliated hedge funds have significantly larger presence in the underwriting and M&A business than financial conglomerates without affiliated hedge funds.

We perform a similar analysis for brokerage deals. For each financial conglomerate, we count the number of hedge funds that use it as a prime broker based on

Table 15. Financial Industry Affiliation, Number of Funds, and Number of Fund Categories: By *FIN_Index*

	Number of funds			Number of categories		
Variable	High	Low	Difference	High	Low	Difference
FIN_index	5.49	2.84	2.65 (3.65)	1.60	1.27	0.33 (3.82)

Notes. This table reports the number of funds and the number of investment style categories in affiliated and unaffiliated hedge fund companies. Hedge fund data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. The table shows the summary statistics for fund families sorted by *FIN_Index*. We construct the *FIN_Index* by summing the eight financial industry affiliation dummy variables. The *FIN_Index* ranges from zero to eight. We split the sample fund families into two groups: high *FIN_Index* (*FIN_Index* > 3) and low *FIN_Index* (*FIN_Index* = 0). We then report the average number of funds and the average number of investment style categories within each group. The number of hedge fund companies is 187 for high *FIN_Index* and 459 for low *FIN_Index*. Numbers in parentheses are *t*-statistics.

the Lipper TASS data. We then compare the number of prime brokerage deals across financial conglomerates with and without affiliated hedge funds. We find that financial conglomerates with affiliated hedge funds tend to serve as prime brokers for a greater number of hedge funds than those without affiliated hedge funds. Overall, our exploratory analysis indicates that financial conglomerates with affiliated hedge funds exhibit larger market shares in equity underwriting, M&A advising, and brokerage business than comparable conglomerates without affiliated hedge funds.

3.8.4. Divisional-Level Profitability. The argument that affiliated funds may pursue the interests of the financial conglomerate at the expense of fund performance implies that (1) affiliated funds underperform and that (2) the other divisions of the financial conglomerate outperform. Much of this paper focuses on (1) and provides strong evidence supporting this prediction. To provide evidence on (2), we examine division-level profitability by using data from the Compustat Segment Database. We group all segments within financial conglomerates (with the first digit of Standard Industrial Classification code of six) into four categories—"asset management," "brokerage," "banking," and "insurance." We calculate two profitability measures (i.e., operating profit margin and pretax profit margin) at the segment level. We then compare the profitability measures of each of these segments between financial conglomerates with affiliated hedge funds and those without affiliated hedge funds. Our results indicate that financial conglomerates with affiliated hedge funds tend to have higher

profitability ratios in the "brokerage" and "banking" segments than financial conglomerates without affiliated hedge funds and similar profitability ratios in the other segments. These results provide support for the argument that financial conglomerates benefit from having affiliated hedge funds.

3.8.5. Composition of Employees. To further demonstrate that affiliated hedge fund companies are more motivated by fee maximization rather than performance maximization, we compare the personnel composition between affiliated hedge fund companies and unaffiliated hedge fund companies. Item 5 of Form ADV discloses the total number of employees of an investment adviser and the number of employees who perform investment advisory functions such as portfolio management and research. The results contained in the online appendix indicate that the percentage of research-related employees is significantly lower in affiliated hedge fund companies than in unaffiliated hedge fund companies. For example, 53% of employees of bank-affiliated hedge fund companies perform investment-related functions, whereas the corresponding percentage for unaffiliated hedge fund companies is 70%. This evidence suggests that affiliated fund companies are more focused on growing their assets and marketing their products than maximizing returns.

3.8.6. Fund Flows. Hedge funds mainly elicit money from institutions and wealthy individuals. These investors are generally considered "sophisticated." If financial industry affiliation undermines hedge fund performance, a natural question to ask is whether hedge fund investors are aware of the potential conflicts of interest faced by affiliated hedge funds. If they are, all else being equal, hedge fund investors should invest less in affiliated funds. We estimate the relation between fund flows and *FIN* by using a Fama–MacBeth regression approach. Overall, we find evidence that affiliated funds experience lower fund flows than their unaffiliated counterparts, suggesting that investors have some knowledge about the agency cost associated with financial industry affiliations.

4. Conclusions
In this paper, we study the impact of conflict of interest and superior information on hedge fund performance by examining a unique sample of hedge funds that have financial industry affiliations. Our setting is unique and economically important because of the large potential for conflict of interest and superior information among affiliated hedge funds. We find that affiliated hedge funds significantly underperform unaffiliated funds. This result holds in

univariate portfolio sorts, Fama–MacBeth regressions, and difference-in-difference analyses. Consistent with the conflict–of-interest hypothesis, we find that this underperformance is more pronounced when the number of financial industry affiliations is greater. Moreover, we uncover direct evidence that affiliated fund families deviate from investors' best interest in their investment activities. Specifically, we show that affiliated funds are more likely to commit legal and regulatory violations and tend to exhibit a greater number of internal conflicts of interest. We also find that affiliated fund families manage a larger number of funds in a greater number of investment categories, consistent with the idea that affiliated fund families are more likely to pursue asset-gathering strategies. Investment bank–affiliated hedge funds tend to overweight their IPO/SEO clients' stocks, which have poor performance in the long run. Overall, although financial industry affiliation may provide affiliated funds with superior information and better access to funding, these benefits seem to be outweighed by the cost of conflicts of interest. Our findings have important policy implications and suggest

that the Volcker rule, which prohibits banks from sponsoring hedge funds, is likely to benefit hedge fund investors. We acknowledge that although our results are consistent with conflict of interest exerting a negative impact on the performance of affiliated hedge funds, we cannot rule out the possibility that lack of skill also contributes to the underperformance of affiliated funds.

Acknowledgments

Appendix. Form ADV

This appendix describes the financial industry affiliation variables and reports the number of hedge fund companies filing Form ADV each year. Hedge fund data are obtained from the Lipper TASS Hedge Fund Database. Financial industry affiliation variables are obtained from Form ADV filings with the SEC. We match hedge fund management companies from Lipper TASS with registered investment advisers from Form ADV filings based on their names. The sample period is 2001–2014. In the latest version of Form ADV, the category "investment company" no longer exists. The sample period for this category is 2001–2012.

Table A.1. Definitions of Financial Industry Affiliation Variables

Financial industry affiliation	Definition on item 7 of Form ADV
Bank	Banking or thrift institution
BrokerDealer	Broker-dealer, municipal securities dealer, or government securities broker or dealer (registered or unregistered)
FuturesCTA	Futures commission merchant or commodity pool operator or commodity trading advisor (CTA, whether registered or exempt from registration)
Insurance	Insurance company or agency
InvestAdv	Other investment adviser (including financial planners)
InvestComp	Investment company (including mutual funds)
Pension	Pension consultant
SponsorLLP	Sponsor or syndicator of limited partnerships (or equivalent) or sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

Table A.2. Number of Hedge Fund Companies Filing Form ADV by Year

Year	Number of hedge fund companies	Number of hedge fund companies that continued to report the following year	Hedge fund companies that continued to report the following year, %
2001	246	218	88.6
2002	261	243	93.1
2003	296	272	91.9
2004	353	336	95.2
2005	659	560	85.0
2006	692	547	79.0
2007	628	557	88.7
2008	602	514	85.4
2009	559	495	88.6
2010	552	482	87.3
2011	533	473	88.7
2012	591	523	88.5
2013	560	510	91.1
2014	542	—	—

Endnotes

[1] These statistics are based on a sample of hedge funds merged between the Lipper TASS Hedge Fund Database and the SEC ADV Filings Database for the period 2001–2014.

[2] Strictly speaking, exploiting such privileged information by affiliated hedge funds also represents a form of conflict of interest because it is against the best interests of the financial conglomerate's other clients. We label it as "superior information" to differentiate from the conflict of interest that harms hedge fund investors.

[3] See, for example, Massa (2003), Nanda et al. (2004), Gaspar et al. (2006), Hao and Yan (2012), Berzins et al. (2013), Bhattacharya et al. (2013), and Sialm and Tham (2016).

[4] We should note that hedge funds, including affiliated hedge funds, are also characterized by significant managerial coinvestment and high-powered incentive contracts, which should help align the interests of fund managers and fund investors. In addition, sophisticated investor flows could serve as a disciplining mechanism to hedge fund managers. Therefore, although conflicts of interest in hedge funds are exacerbated by weak governance and lack of transparency, they could also be mitigated by fund manager compensation and sophisticated investor flows.

[5] Franzoni and Giannetti (2019) also use Form ADV filings to identify financial conglomerate–affiliated hedge funds, but their definition of affiliated funds is narrower than our definition. Moreover, they argue that affiliation with a financial conglomerate benefits affiliated hedge funds because of better access to funding, especially during crisis periods. As such, they cannot explain the underperformance of affiliated hedge funds.

[6] Form ADV has 12 items and four schedules. Items 1–12 contain information on a firm' identity, operations, potential conflicts of interest, the custody of clients' assets, control persons, legal and regulatory history, and main lines of business. Schedules A–D disclose the identity of owners and the affiliated financial institutions of the firm. Form ADV can be found on the SEC's website: https://www.sec.gov/about/forms/formadv.pdf.

[7] In the latest (i.e., 2012) version of Form ADV, the category "investment company" no longer exists. Therefore, the sample period for this category is 2001–2012.

[8] In order to classify a fund as affiliated or unaffiliated, the fund must file Form ADV. Funds that do not file Form ADV are not included in our sample. We create financial industry affiliation dummy variables yearly from annual Form ADV filings. When a Form ADV filing is missing for a given year, we use information contained in the previous report, provided that the previous report was filed within the past two years.

[9] See https://faculty.fuqua.duke.edu/~dah7/HFRFData.htm.

[10] The website is http://www.adviserinfo.sec.gov/IAPD/Default.aspx.

[11] In the online appendix, we investigate whether our sample funds, which require Form ADV data, are systematically different from the Lipper TASS universe. This issue is relevant because Form ADV filing is mandatory only during 2006 and after 2012. Consistent with Brown et al. (2008), we find that our sample funds are larger, older, and belong to larger fund families. We also find that our sample funds have higher incentive fees, have higher minimum investment, and are more likely to have a lockup provision. These differences, however, should not bias our results because we focus on the relative performance of affiliated and unaffiliated funds, both of which file Form ADV.

[12] We compare fund characteristics for affiliated funds versus unaffiliated funds in the online appendix. We find that affiliated funds tend to be larger, charge lower management and incentive fees, have lower minimum investment, and are less likely to have a lockup provision, HWM, and manager coinvestment than unaffiliated funds.

[13] An alternative approach is to define unaffiliated funds as those not affiliated with a specific category of financial institutions. The results for this alternative definition (presented in the online appendix) are qualitatively similar.

[14] In the online appendix, we show that the underperformance of affiliated funds is more pronounced in gross returns than in net returns. This result is attributed to the lower percentage management fees and incentive fees charged by affiliated funds than unaffiliated funds.

[15] In Schedules A and B of Form ADV, registered investment advisers are required to disclose the direct and indirect owners of the company as well as the dates when the ownership was acquired by each of the owners. By analyzing ownership changes over time, we identify changes of affiliation status that are because of M&As. We require a hedge fund company to report detailed ownership data and details of the acquirer (a financial institution) and the acquisition date in Schedules A and B of Form ADV. To obtain a clean sample, we also require that hedge fund companies, prior to becoming affiliated or after becoming unaffiliated, are not owned by any institutions. In total, we identify 75 hedge fund companies that experienced affiliation changes because of M&As during our sample period.

[16] We note that the pursuit of this asset-gathering strategy by affiliated hedge funds does not necessarily reflect the conflict of interest among different business units of a financial conglomerate. Rather, it reflects the broader conflict of interest between hedge fund investors and hedge fund companies that is amplified in affiliated hedge funds.

[17] Lipper TASS classifies all funds into the following categories based on their investment styles: convertible arbitrage, dedicated short bias, emerging markets, equity market neutral, event driven, fixed income arbitrage, fund of funds, global macro, long/short equity, managed futures, and multistrategy.

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