Hedge Fund Boards

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At the end of 2012, three-quarters of hedge fund assets were legally affiliated with an offshore domicile that required the fund to be governed by a board of directors. In this paper we use a comprehensive dataset of SEC filings to provide the first, large-scale examination of the governance role of hedge fund boards. We find that funds where managers have greater scope for conflicts of interest are more likely to have majority outside boards indicating that board may serve as a partial solution to agency concerns between managers and investors. We find evidence that outside board members serve as a certification mechanism that affects the capital allocation choice for investors. Despite their limited ability to replace a "bad" manager, directors use the threat of exit to align incentives ex ante. Upon the departure of an outside director, funds lose a significant fraction of their assets and increase the subsequent probability of failure. We conclude that despite claims in the media that hedge fund boards are perfunctory, funds and investors appear to consider the structure of hedge fund boards.

Hedge funds are opaque, often complex, and lightly regulated. These characteristics increase monitoring costs and provide fertile ground for agency conflicts to emerge between hedge fund managers and investors. The symptoms of these conflicts have become evident following several recent studies documenting hedge fund misbehavior.[1] These studies highlight the importance of understanding the governance mechanisms that hedge funds and their investors use to mitigate agency problems. In this paper, we examine the role that boards of directors play in the governance of hedge funds.

Legally, the hedge fund directors have a responsibility to monitor managers and serve as an advocate for hedge fund investors. Hedge fund directors have explicit fiduciary duties to oversee matters where the interests of the manager and its investors differ. Directors monitor the manager's risk management system and review the fund's valuation practices, ensuring that NAVs are properly calculated. Further, they should review and approve investment advisors' contracts and fees, side letter arrangements, discretionary liquidity restrictions, as well the selection of auditors, custodians, and other third party administrators.

In practice, however, these tasks are complicated by several institutional features unique to hedge fund boards. Hedge fund directors are typically appointed by fund management and are not voted on by fund investors. These directors may be employees of the fund advisor or affiliated service providers. For those directors that are independent, many hail from large, professional service firms that specialize in providing hedge fund directorships. These 'professional directors' frequently serve on numerous boards at the same time, thereby calling into question both their impartiality and their ability to devote appropriate diligence for a given fund. Unlike corporate boards that may use the threat of firing the manager as a mechanism to

[1] See for example, Agarwal, Daniel and Naik, 2011; Bollen and Pool, 2009 and 2012; Dimmock and Gerken 2012 and 2013; Aiken, Clifford, and Ellis, 2013

align the incentives of mangers and shareholders, hedge fund boards typically lack the ability to fire the hedge fund manager. Motivated by the gap between the scope of the board's responsibility and its perceived level of effectiveness, this paper empirically examines the structure of hedge fund boards and assesses the role (if any) that boards serve in shaping the contracting environment between investors and managers.

The role of hedge fund boards has come under increased scrutiny following the wave of scandals and fund failures that emerged in the recent financial crisis. In particular, in 2011 the Grand Court of the Cayman Islands ruled that the directors of the defunct Weavering Macro Fixed Income Fund were to be held personally liable for $111 million in damages for failing to exercise independent judgment and appropriate due diligence in monitoring the actions of the fund. Following this case, several media outlets have published reports questioning the independence and monitoring capacity of hedge fund boards.[2]

Despite this increased attention, an empirical study of hedge fund boards is notably absent from the literature. The reason for this absence is likely two-fold. First, a common misconception is that all hedge funds are organized as limited partnerships (rather than corporations) and as such do not have boards. In fact, most hedge funds, even those organized domestically as LPs, create offshore corporate entities that give certain investors favorable tax treatment. The laws of offshore domiciles, such as the Cayman Islands, require the fund to establish a board of directors. The second reason, as is typical with hedge fund studies, is lack of data. Historically, hedge funds have faced limited disclosure requirements from the SEC. However, starting in 2009, the SEC mandated that hedge funds submit Form D filings electronically in a structured data

[2] http://nymag.com/daily/intelligencer/2012/07/hedge-funds-are-not-like-banks.html
http://dealbook.nytimes.com/2012/07/01/in-caymans-its-simple-to-fill-a-hedge-fund-board/?_r=0
http://www.ft.com/cms/s/0/a6164788-111b-11e1-ad22-00144feabdc0.html#axzz2g6l6A0mf

format.[3] For hedge funds seeking to raise capital from U.S.-based investors, these filings provide the names and addresses of the directors of hedge fund boards. We utilize these filings to create a comprehensive panel database of hedge fund boards from 2009 to 2012.

We begin by documenting several stylized facts about hedge fund boards. Perhaps most interestingly, we find considerable cross sectional variation in the size and structure of hedge fund boards. Unlike for U.S. public corporations and mutual funds, few regulations govern the structure of offshore hedge fund boards. If boards were designed simply to meet the local regulatory minimum, then we would expect to see limited variation in board structure and significant clustering around regulatory minima. However, few boards meet only these minima (*e.g.* only 8.4% of Cayman Island boards meet only the regulatory minimum). Further, 79.1% of boards in our sample employ at least one director from outside the firm, while over half of boards consist of a majority of outside directors.

Next, we examine how board structure varies with the contracting environment of the fund. We follow the vast literature on corporate and mutual fund board efficacy and focus on the role of board independence (a majority of the fund's directors come from outside the hedge fund advisory firm). Outside directors should be less likely to be co-opted by the hedge fund manager, and thus more likely to act in accordance to their fiduciary duties, which is to protect investor interests from managerial misconduct. If boards are perfunctory then we should not expect to see any relation between outside boards and fund characteristics. To the contrary, we find that structure of hedge fund boards is broadly consistent with a characterization of boards as a partial solution to the agency problems that limit a fund's ability to attract outside capital. Most notably, we find that outside boards are more common among larger hedge funds suggesting these outside

[3] http://www.sec.gov/info/smallbus/acsec/acsec103111_analysis-reg-d-offering.pdf

boards could serve as a certification mechanism that funds use to signal their quality to outside investors. We also find that funds with outside boards have larger initial offerings, and funds that add outside directors receive large subsequent investments from a broader investor base.

We also find that outside boards are more common in funds whose contracts allow greater scope for conflicts of interest between managers and investors. Classical agency theory would predict that fund managers with more discretion would require stronger monitoring mechanisms in order to attract outside capital. We find that funds are more likely to have outside boards when they value their assets internally, have less co-investment from the manager, and have longer withdrawal frequencies. Though these practices may be value increasing in some cases, they also afford the manager greater discretion or incentive to take advantage of investors. Further, when withdrawal frequencies are longer, investors are less able to "vote with their feet" (Fama and Jensen, 1983). Thus, these lock-ups impair the disciplinary role of investor flows, making alternative governance mechanisms (such as an outside board) more valuable. Taken together, our evidence is consistent with outside boards serving as a credible monitoring mechanism, helping to limit the potential opportunism associated with managerial discretion.

Next, we then search for a mechanism outside directors can use to influence managers. An important distinction between hedge fund boards and the boards of U.S. public corporations is that hedge fund boards are (in most cases) completely appointed by the manager. As such, not only is the director's independence from the manager in question, but they lack the authority to terminate the manager if he would misbehave. This arrangement raises the question, "what is the 'stick' directors can use to wield any monitoring authority?"

We posit that a primary source of director authority comes from their ability to exit the board. Outside directors care about their own reputations, as many are professional directors that

obtain their primary income from serving on multiple hedge fund boards. Thus, if a fund would fail under a director's watch, the director's reputation could suffer, affecting his ability to retain or seek new directorships from other funds. Similar to the finding in Brown, Goetzmann, and Park (2001) that fund failure greatly reduces future job prospects for fund managers, anecdotal evidence from press announcements of hedge fund board additions suggest a similar reputation effect for directors.[4] We document that directors do face severe career consequences for being associated with failing funds. Directors associated with failure are nearly four times *less* likely to join a board after a fund failure, all else equal. As such, if a director observes that a fund manager is misbehaving or otherwise headed toward failure, the director has an incentive to exit the board and avoid having his reputation tarnished by being associated with a failed fund.

Given these incentives, investors could infer bad news from director departures and react by withdrawing their capital. This incentive effect has been documented for outside directors of public corporations by Fahlenbrach, Low, and Stulz (2013), who show that outside directors tend to leave before poor company performance and investors react negatively to this news. In this manner, a director could derive *de facto* authority by serving as a certification mechanism. *Ex ante*, the threat of exit could serve as a governance mechanism, restraining managers who are wary of losing the director's certification (similar to the role of blockholders in Edmans, 2009).

[4] In a press announcement announcing the addition of the one of our sample directors, Greg Bennett, to the Oceanic Hedge Fund board explicitly cited his clean track-record both in terms of regulatory violations and fund failures: "[Mr. Bennett never has] had any public criticism by statutory or regulatory authorities (including recognised professional bodies)" and " [Mr. Bennett never has] been a director of any company which, while he was a director with an executive function or within 12 months after he ceased to be a director with an executive function, had a receiver appointed or went into compulsory liquidation, creditors voluntary liquidation, administration or company voluntary arrangements, or made any composition or arrangements with its creditors generally or with any class of its creditors"

Consistent with a disciplinary role of director departures, we find that funds suffer large outflows when outside directors leave the board, especially if the departing director is not replaced by another outside director. These results suggest that investors view director exits as a negative signal about the future prospect of the fund. We then test whether investors are correct in perceiving negative information from an exit by examining whether the probability of fund failure is higher following director exits. We find that the loss of an outside director increases the likelihood of failure from two to nine times depending on whether the fund replaces the director. Although the evidence is circumstantial, our results are consistent with the idea that the director's option to exit the board may be the 'stick' of hedge fund board governance.

To the best of our knowledge this paper is the first to examine hedge fund boards. However, our results are related to the larger literature on the governance structure of mutual funds.[5] For instance, Chen, Goldstein, and Jiang (2008) measure mutual fund board monitoring quality using director ownership and find ownership patterns are consistent with tradeoffs reflecting optimal contracting. In particular, they find that funds have greater director ownership when managers have more discretion over investment policy. Similarly, we find that hedge fund characteristics are related to board independence in a pattern consistent an optimal contracting story; yet, we are careful not to interpret these tradeoffs as evidence that hedge boards are structured optimally.

We acknowledge that board structure is an endogenous choice of the hedge fund manager. Because we lack any exogenous variation in board structure, the correlations between board quality and fund characteristics we report cannot be interpreted as casual. Rather, our results

[5] See, for example, Tufano and Sevick, 1997; Del Guercio, Dann, and Partch, 2003; Khorana, Tufano, and Wedge, 2007; and Ding and Wermers, 2012.

suggest a role of hedge fund boards as a potential governance mechanism. The associations we document are not consistent with the board being a vestige of regulatory window-dressing.

1. Background

1.1 Offshore jurisdictions and boards of directors

Hedge funds routinely create offshore vehicles for privacy and tax purposes.[6] Managers looking to attract U.S.-based investors will often choose to use a master/feeder structure. A typical structure will consist of three entities: an onshore feeder fund through which U.S. taxable investors can enter the fund; an offshore feeder fund, typically set up as an exempted corporation, through which non-U.S. and U.S. tax-exempt investors can enter the fund; and an offshore master fund through which all trading activity is carried out.

For U.S. tax-exempt investors, the advantage of this approach is avoidance of Unrelated Business Taxable Income (UBTI). Under U.S. tax law, a tax-exempt organization (such as an ERISA-type retirement plan or endowment) that adopts an investment strategy where leverage is used is liable for UBTI. In offshore locales, however, the fund is set up as an exempted corporation rather than pass-through entity, such as a limited partnership. As such, the tax does not pass through to the investor, thus removing the burden on U.S. tax-exempt investors. For non-U.S. based investors, benefits include both possible tax-advantages from the home country, as well as privacy from disclosure laws in the U.S.[7]

[6] Aragon, Liang, and Park (2014) study the differences in regulatory environment and investor clienteles between onshore and offshore funds.

[7]For example, if offshore investors make any investments in U.S. securities, then U.S. withholding tax rules will apply and U.S. paperwork will have to be filled out to claim exemption from U.S. withholding taxes. The investors will have to submit this form, which declares their participation, to U.S. tax authorities. However, if the offshore

Among the hedge funds in our sample, the most common domicile for offshore hedge funds is the Cayman Islands. From Figure 1, we see that of the offshore locales in our sample, the Cayman Islands accounts for 77%. The next two largest domiciles are the British Virgin Islands and Bermuda, respectively. Collectively, these three locales account for 89% of the offshore funds in our sample.

In the Cayman Islands, a fund typically creates a registered mutual fund and is subject to the requirements of the Cayman Islands Mutual Fund Law.[8] These requirements include that the fund appoint at least two directors (in the Cayman Islands the two directors must be natural persons i.e. not a corporate entity) that the Cayman Islands Monetary Authority (CIMA) deems are fit and proper to be directors. Managers or officers of the fund are not precluded from serving as a director. Upon review of CIMA, any director not believed capable of fulfilling her duties may be forced to be replaced or the fund's registration with CIMA may be canceled. Non-CIMA registered funds in the Cayman Islands require only a single director.

Other jurisdictions have similar but not identical regulations regarding directors. In the British Virgin Islands, funds are only required to have one director, and the director does not have to be a natural person. In Bermuda, one director must be a resident of Bermuda.

In Figure 2, we document the size of offshore boards by domicile. Focusing on the Cayman Islands, the average fund has 2.9 board members. Of these, on average 1.3 members are deemed to be insiders, while the remaining 1.6 members are deemed to be outsiders. Turning to

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fund is structured as a corporation, then only the corporate entity will have to submit the paperwork, thus allowing its individual non-U.S. investors to remain anonymous to U.S. tax authorities.

[8] Note that the term mutual fund is generic and is distinct from the typical U.S.-based interpretation of a mutual fund. Further, while funds can avoid registration with CIMA by maintaining 15 or fewer accounts, the majority of whom are capable of appointing or removing the fund's operator, most funds fail to meet this requirement and choose to register. See the 2012 Mutual Fund Law:

[8] http://www.cimoney.com.ky/WorkArea/DownloadAsset.aspx?id=2147483702)

the less frequently used domiciles, we find that boards in the British Virgin Islands and Bermuda are slightly larger and are moderately more inclined to have insider directors than outsider directors. In Figure 3, we document for each domicile whether the average fund has any outside director and whether the majority of the directors are deemed to be outsiders. In the Cayman Islands, 75% of the funds have at least one outsider director, while 58% of the funds choose to have a majority of outside directors. The averages for other domiciles are comparable except that Bermuda funds are more likely to have at least one outside director (due in part to the residency requirement).

1.2 Hedge fund directors

The role of the director in the typical hedge fund differs in some important aspects from the role of a director in a U.S. public company. One significant difference is that the investment manager (or an affiliate) typically holds "management shares" of the fund. These "management shares" generally hold the power to appoint directors.

The board typically delegates much of the daily responsibilities to third-party service providers such as the investment manager, administrator and auditor. Directors do not directly manage the business or make investment decisions as these actions are delegated to the investment manager. Though not explicitly prohibited, directors typically do not seek to replace the investment manager. However, even if they delegate their responsibilities, directors are personally liable for a breach of certain fiduciary duties and must act in what they consider to be the fund's best interest. As the case of *Weavering Macro Fixed Income Fund Limited (In Liquidation) vs. Stefan Peterson and Hans Ekstrom* highlighted, directors can face severe penalties for neglect of their duties (in this case, US$ 111MM).

The directors have a fiduciary duty to oversee matters where the interests of the manager and its shareholders differ, to review and approve investment advisors' contracts and fees, selection of auditors and attorneys, to appoint the transfer agent, custodian, and other third party administrators, and to review the manager's risk management system. Directors must also approve of certain actions taken by the fund: selection of the valuation process, certification of the accuracy of fund information, granting of side letters for preferential treatment of certain investors, and approval of discretionary powers, such as discretional liquidity restrictions.

Outside directors (and sometimes inside directors) are typically paid a fixed salary i.e. the compensation is not related to the fund's investment performance. This compensation is typically paid out of the assets of the fund itself. Currently, the offshore jurisdictions in our sample place no restrictions on the number of boards that a director can serve on concurrently. Directors are also not obligated to report the number of boards on which they serve.

1.3 Regulation D of the Securities Act of 1933

The Securities Act of 1933 ('33 Act) requires any offer to sell securities to U.S. investors be registered with the SEC. Regulation D of the '33 Act contains exemptions from the registration requirements, allowing companies to offer and sell their securities without having to register with the SEC. Of these exemptions, hedge funds typically rely on Rule 506, which prohibits solicitation or advertising of the securities and requires the securities be offered to accredited investors.[9] In doing so, funds are able to offer an unlimited amount of securities to investors by filing a Form D indicating the sale. In filing the Form D, funds must disclose their

[9] The recently passed 2012 Jobs Act is likely to reduce the limits on advertising and solicitation, although final rules have not been approved by the SEC. For a more complete description of Rule 506, see: http://www.sec.gov/answers/rule506.htm.

exemptions that enable them to avoid being defined as an "investment company" under the Investment Company Act of 1940 ('40 Act). Hedge funds primarily rely on two exemptions: Section 3(c)(1) and Section 3(c)(7). Under Section 3(c)(1), the issuer must not have more than 100 investors and must only sell securities to accredited investors.[10] Funds with more than 100 investors must rely on the Section 3(c)(7) exemption which limits the fund to no more than 500 investors and requires the more rigorous qualified purchaser standard.

In March of 2009, the SEC implemented amendments to Reg D, requiring an electronic filing of the form.[11] The fund is required to file the notice within 15 days after the first sale of securities, is required to amend the filing when a material change has occurred, and annually thereafter.

2. Data

The board data in this paper are hand collected from SEC Form D filings from EDGAR. Thus, we define the beginning of our sample as 2009 and collect over the period of 2009 to 2012. From each Form D and Form D/A (Form D amended) filed we collect the name of the fund, domicile, number of investors in the fund, exemption type, names and addresses of board members, and board independence. The filing universe contains all hedge funds that seek to raise capital from U.S. based investors via Regulation D. As our focus is on hedge fund boards, we restrict the analysis to offshore funds, which have boards of directors (a limited, but growing,

[10] The accredited investor standard requires natural persons to have a liquid net worth of more than $1 million or income of $200,000 or more in each of the two most recent years or joint income with a spouse of $300,000 over each of the previous two years. The qualified purchaser standard requires a natural person to have more than $5 million in investments or an investment manager to have more than $25 million in assets under management.

[11] More complete analysis of the amended Reg D filing can be found at: http://www.sec.gov/rules/final/2008/33-8891fr.pdf).

number of onshore-only funds have advisory boards, which we do not consider). If the hedge fund is structured in a master-feeder structure, we limit our analysis to the offshore components. For many analyses, we match the Form D filings to the union of Investment Adviser Registration Depository (IARD) Form ADV Schedule D filings and five widely used commercial databases.[12]

We define a director as being an insider if the director also lists himself as an executive of the fund, the director discloses a relationship with the fund e.g., (employed by the advisor), or the director's address matches to other regulatory filings for the fund (e.g. Form ADV). Otherwise, we classify the director as an outsider. In the majority of cases, we can match the outside director's address to one of the many firms that provide professional directors. We define the board as an "outside board" if the majority of directors are outsiders (if there are an equal number of insiders and outsiders we do not classify the board as an "outside board").

For example, the initial Form D filing for Longacre Credit Event Offshore Fund (Longacre) was filed January 8, 2010. From Section 3 of the filing, we identify the three directors of the company David Bree, Ronan Guilfoyle, and Steven Weissman. Bree and Guilfoyle are both employed by DMS Management Ltd, a large, professional services firm located in the Cayman Islands. Given that these two directors are employed by an independent third party, we classify them as outside directors. The third director of the fund is Steven Weissman, the co-founder of Longacre, and thus classified as an inside director. We classify Longacre as having an outside board as the majority of board members are deemed to be unrelated to the fund or its advisor.

In Table 1, we present summary statistics for board structures and individual directorships in our sample. In Panels A and B, we report the distributions of board structures. In

[12] The commercial data used in this paper comes from the union of Lipper TASS, HFR, BarclayHedge, Morningstar, and EurekaHedge.

Panel A, we report that 62% of boards have a majority of board members that are independent of the fund or the advisor, while 79% of the boards have at least one independent director of the board. The median board in our sample has three directors, of which two are independent and one is an insider. In Panel B, we report that the two outside, one inside board is the most common structure accounting for nearly a quarter of all boards in our sample. We also show that 31% of boards consist entirely of outside board members.

In Panels C and D, we focus on the individual directors in our sample. In Panel C, we report the number of unique directors. There are 2,080 individuals that are classified as outside board members, and 3,380 that are classified as inside board members due to their association with the fund or investment manager. A small, but important fraction of individuals hold many board seats concurrently: 93 directors serve on funds from at least ten different advisors, while 117 directors serve on twenty or more boards. In Panel D, we present director-level averages of the number of boards that individuals serve on tabulated by outside/inside status. Inside directors tend to serve on a limited number of funds (median = 2) within a single advisor. Outside directors serve on considerably more funds (mean = 14.8; median = 7) across many advisors (mean = 8.5; median = 3). As mentioned in Panel C, the directors that serve on many boards concurrently skew these distributions.

In addition to the Form, we use two other datasets: a dataset derived from Form ADV filings and a merged hedge fund database consisting of the five most widely used hedge fund databases: TASS, HFR, Morningstar, Barclay, and Eureka. Under the Investment Advisors Act of 1940, an investment advisor with a certain level of assets under management is required to

register with the SEC unless it qualifies for an exemption.[13] Historically, many hedge fund managers relied on an exemption from registration under Section 203(b)(3) of the Advisors Act available to those advisors with fewer than 15 clients who do not hold themselves out to the public as investment advisors and who do not act as advisors to registered investment companies. The Dodd-Frank Act eliminated the private advisor exemption that many hedge fund managers relied on to avoid registering with the SEC. Advisors had to file a Form ADV with the SEC by March 30, 2012.

In select analyses, we augment our dataset with private fund data collected from Schedule D and information on the usage of side letters agreements from the Form ADV Part II Brochures. As data is not available prior to the deadline, we backfill the fund characteristics obtained from Form ADV to the earlier period. We merge Form D and Form ADV using the Form D file number for the private fund. We hand match any remaining unmatched funds using data available in both datasets: name, address, phone, and AUM.

We merge Form D to the commercial datasets using a name-based approach. We process the fund names in each dataset by standardizing text about legal structure, currency, share class, leverage, and domicile. We then merge using the standardized names. We merge share classes across commercial databases following the algorithm of Joenvaara, Kosowski, and Tolonen (2012). We verify our matches by using data available in both datasets such as AUM and jurisdiction.

Hedge fund boards are only required by certain legal forms that tend to more popular offshore. To mitigate concerns of selection bias for funds that choose to register the fund offshore, we focus our analysis only on the sample of offshore hedge funds with boards. That is,

[13] Advisors managing over $100MM in regulatory assets or failing to meet the requirements of state registration are required to register.

all of our analysis centers on the cross-sectional and time-series changes of funds with boards. In Table 2, we present fund characteristics of the offshore funds in our sample.

The average offshore fund in our sample manages $380MM in assets, is 7.7 years old, has 41.7 investors, and has an annual return of 7.96%. Offshore funds have an average management (incentive) fee of 1.50% (16.74%), have an average lockup of just over 180 days, and average withdrawal frequencies of just over one quarter. In the average offshore fund, the advisor owns 12.72% of the fund and the average fund values 17.17% of their securities internally. We note however, that these averages are skewed by a few funds with extremely high ownership and valuation practices. The median fund's advisor owns 2% of the fund and uses an external third-party to value its 100% securities. Finally, 77.84% of the funds in our sample rely on the Section 3(c)(7) exemption to be excluded from the Investment Company Act; because this exemption relies upon the more stringent, qualified investor standard, of $5MM in investments for an individual or $25MM in investments for institutions, we use this distinction as a proxy for the fund's intention to market to an institutional clientele. Finally, 27% of the funds in our sample have entered into side letter agreements. Side letters are agreements that hedge fund advisors enter into with certain investors that give those investors more favorable rights and privileges than other investors receive. According to a 2006 AIMA survey, the most common use of a side letter is to grant fee concessions (53%), while preferential access to information (44%) and relaxation of liquidity constraints (35%) are the next two most common. These agreements must be approved by the board.

3. Fund Characteristics and Outside Boards

3.1 Hypothesis Development

In this section, we examine fund and advisor level characteristics that are associated with the funds' propensity to adopt a majority outside board structure. Unlike boards of U.S. corporations which are voted on by shareholders, the hedge fund manager typically chooses the structure of the board. If adoption of the outside board can mitigate investor concerns about certain fund characteristics, then the adoption of such a board will create a benefit for the manager by attracting investor capital. Investors may fear that an unsupervised manager could fail to act in the investors' best interest and demand the fund establish governance mechanisms that restrain the manager's behavior before they would invest in the fund. Thus, a fund manager may be willing to give up some autonomy and submit to be governed by a board of outsiders in order to attract outside capital. In addition to the loss of autonomy, the direct cost of compensating outside directors is modest (but not negligible, especially for the smaller funds in our sample). In equilibrium, we expect outside boards to be used where the benefits exceed the cost to the manager.

Specifically, we expect outside boards to be more common among funds that have attracted more outside capital, such as larger funds and among funds targeting institutional money. Institutional investors, such as fund of funds, may exhibit a stronger preference for investing in funds with outside boards. Institutional investors are accountable to their own clients and are concerned about their own reputations. As such, they may insist that a higher degree of external monitoring be in place before making a large hedge fund allocation. The deep pockets of these investors could give them more bargaining power to demand that funds submit to greater levels of external monitoring. To measure their role, we employ two measures of institutional

investing. The first is the use of the qualified investor Section 3(c)(7) exclusion to the Investment Company Act of 1940 from the Form D filing. The second is the fraction of fund of funds investors reported on the fund's Form ADV Schedule D filing.

The value of outside monitoring should be higher in cases where the manager has greater discretion. Fund managers have greater managerial discretion when they value their assets internally, have longer withdrawal frequencies, or give certain investors preferential treatment through the use of side letters. Many hedge funds invest in illiquid assets, and accordingly rely on valuation models, rather than market prices to value their portfolio. Discretion is not inherently nefarious, but it affords the manager greater opportunity to inflate or manage their stated performance.

Funds with longer withdrawal frequencies are also more likely to invest in illiquid assets that may have greater scope for manipulation. Moreover, infrequent withdrawals increase managerial discretion by limiting their investors ability to "vote with their feet" (Agarwal, Daniel and Naik, 2009). Though incentive fees could align managerial incentives with investor interests and thus reduce the need for external monitoring, prior literature suggests the non-linear structure of hedge fund incentive fees could induce managers to manipulate performance disclosures or take excessive risk (Agarwal, Daniel and Naik, 2011).

Side letters are contractual agreements that give certain investors differential pricing or redemption terms. The use of these agreements could lead to conflicts between and across investors and managers. For instance, current investors may be wary that the manager will cut fees and redemption terms to new investors in order to grow the fund. Another type of side letter may allow certain investors to exit the fund earlier during times of illiquidity, thereby leaving remaining investors holding a more illiquid portfolio of assets. Because these organizational

features increase managerial discretion, we expect that funds with these features will be more likely to have an outside board.

Offsetting these benefits of external monitoring may be other mechanisms intended to make managers work in the shareholders best interests. Managers that invest their personal capital into the fund will align their interest with the other investors in the fund. Beyond direct investments, indirect incentives can align the interests of managers and investors. If investors consider the collective reputation of all funds managed by the same advisor (as predicted by collective reputation models such as Tirole, 1996), then older, more established advisors will have more reputational capital at stake.

3.2 Results

In Table 3, we estimate a predictive model of board structure using logit regression. The model is as follows:

$$Outside\ Board_{i,t} = \alpha + \beta X_{i,t-1} + Domicile_{i,t} * Time_t + \epsilon_{i,t} \quad (1)$$

where *Outside Board*$_{i,t}$ equals one if hedge fund$_i$ had a majority of outside board members in quarter$_t$, and zero otherwise. $X_{i,t}$ is a vector of hedge fund characteristics, and $\varepsilon_{i,t}$ is the error term. We include jurisdiction-quarter fixed effects to control for unobservable heterogeneity due to jurisdiction specific characteristics including time-varying ones, such as changes in regulatory policy. We cluster the standard errors at the fund level. Finally, each of the continuous, independent variable are standardized to zero mean and unit variance. In Table 3, we report odds ratios instead of estimated coefficients.

In Model 1 of Table 3, we estimate the model using the data available in the Reg D filings using all funds that file Form D. We control for the number of fund directors (*# Directors*) and the age of the fund (*Log Age*) to control for any relation of board age and structure. The economically small and statistically insignificant coefficient on *Report to Commercial Database* suggests that the decision to list in a commercial database is unrelated to the structure of the board. Consistent with a tradeoff between board monitoring and alternative governance, we find that funds with younger, less established advisors are more likely to have an outside board.

Fund size and institutional clientele are positively related to the likelihood of an outside board suggesting that managers may be willing to give up some autonomy and submit to be governed by a board of outsiders in order to attract investors. (While the design of our model is predictive in nature, fund size is relatively sticky over our sample period. Thus, a causal relation should not be inferred. In subsequent sections, we further examine the dynamics between fund size and board structure.)

In Model 2 of Table 3, we merge the Form D sample with the fund's Form ADV data. This merged dataset offers a richer set of variables for a more limited set of funds. Consistent with increased benefit of an outside board structure in the presence of managerial discretion, we find that funds that enter into side letters and value more of their securities internally are more likely to have outside boards. We find that *Advisor Ownership* is negatively related to outside boards, consistent with lower marginal benefit of external monitoring when the manager's incentives are more closely aligned with investors.

Finally, in Model 3 of Table 3, the sample covers the union of Reg D, Form ADV, and the commercial hedge fund databases. In doing so, we are able to observe the relation of the fund's share liquidity. We find that funds with more infrequent withdrawal periods are more

likely to have an outside board. In these funds with restricted withdrawal, the ability of the investor to govern the fund by removing capital is hindered, thus creating more need for the board as a fiduciary.

4. Outside Boards and Capital Allocation to Funds

If funds optimally choose board structure to maximize the value of the fund, we should not observe a relation between board structure and investor's allocation of capital. Additionally, many in the media argue that hedge fund boards are merely perfunctory. In this case, we expect investors to fully discount the role of outside board members and thus would find no relation between capital and board structure. Alternatively, however, it could be the case that frictions such as agency costs between the manager and investors, lead to a cross-sectional relationship between observed board structure and capital raising; an issue we study in the following section.

4.1 De Novo Funds

While the strong cross-sectional correlation between fund size and outside board structure is consistent with directors providing a certification of a fund's quality, in this section, we provide more direct evidence by examining fund starts. As investors have limited information about the quality of new funds (e.g. new funds have no historical return records), a certification effect of outsider directors would suggest that funds with outside directors should be able to raise more capital. The certification effect of outside directors should also be stronger for those funds with relatively less reputation, such as those started by brand new managers. Theoretical models of collective reputation, such as those by Tirole (1996) and Cai and Obara (2009), suggest that

investors will base their forecast of an individual fund's quality (at least in part) on the average quality of the funds with which the individual fund is identified.

In Table 4, we model the initial size of the 974 funds that start during our sample period. The dependent variable is the log ($ of initial offering sold). Our primary variable of interest is *Outside Board*, which equals one if the board has a majority of outsiders, and zero otherwise. In the first column of Table 4, we include only *Outside Board.* In the second column, we include *Outside Board* along with advisor age, number of directors, reports to commercial database, institutional clientele and jurisdiction-quarter fixed effects. The coefficient estimates of *Outside Board* in these specifications are quite similar. The estimate of 0.2078 in column two can be interpreted as newly created funds with an outside board are approximately 30% (i.e. *exp*(0.2082)-1) larger than similar funds with inside boards.

We find no evidence of differences in initial fund size between those funds that report to the commercial databases and those that do not. However, we find that *Advisor Age* has a significant relationship to initial fund size. Compared to a brand new advisor, the fund of an advisor with median age of 6 is approximately 15% larger. New funds by established advisors may share the reputation of older funds from the same advisor much like the reputational spillover effects observed in mutual fund families (Gerken, Starks, and Yates, 2013). In the third column, we allow for the possibility that the reputation of outside directors and the reputation of advisors may be supplements by including an interaction term. We find a negative interaction term (though not significant at conventional levels) suggesting the possibility of the supplementary nature of external reputation by outside director and internal reputation through the fund's advisor. Overall, we find that new funds with outside boards tend to be larger consistent with investors favoring this board structure.

4.2 Changes to board structure

Given our finding that investors initially allocate more capital to funds with outside boards, one concern is that an omitted factor of fund quality may jointly determine both outside directors and investor capital. Absent an exogenous source of variation in board structure such as regulatory changes (Duchin, Matsusaka, and Ozbas, 2010) or sudden director departures (Nguyen and Nielsen, 2010), identifying causal effects of board structure is difficult. To partially offset these concerns, in the following section our goal is to understand how investors change their allocations of capital at time *t+1* based on changes in observed board structure at *t*. We focus specifically the change to a board made up with a majority of outsiders. In the empirical tests that follow, we use two proxies for investor capital: changes to the number of investors in the fund and implied net flows of capital.

4.2.1 Number of investors

Using Form D, we identify the number of investors that the hedge fund has each period and define the change in the number of investors as the difference in investors from time *t+1* to *t-1*. We winsorize this measure at the 1% and 99% level to reduce the impact of reporting errors. As number of investors is available from Form D, any fund that sought to raise capital from U.S. based investors would be present in our sample. Our results are presented in Table 5.

We define our primary variable of interest, *Add Outside Board*, as an indicator variable equal to one in the period the fund changed to a board comprised with a majority of outside directors, and zero otherwise. Additionally, we use data available in the Form D filing to control for the level of board structure, the # of directors in the fund, whether the fund chooses to market

to institutions, the age of the fund, and the amount of capital raised by the fund. To control for unobservable heterogeneity, we include a fixed effect for each jurisdiction-year in our sample. Our standard errors are clustered at the fund level.

In Model 1, we see that fund's with outside boards are related to a small (0.62 new investors), but statistically significant increase in the number of investors each period. Economically, however, the more meaningful change in investors occurs in the quarter following the fund's decision to change to a majority of outside board members. Following the change, the fund adds 10.71 new investors. The average fund in our sample has approximately 40 investors, indicating that the decision to *Add Outside Board* is associated with a 25% increase in the fund's investor base. Our results are similar in Model 2 when we control for the amount of capital raised by the fund.

One concern that remains present is that a shock in an omitted factor that causes the fund to change its board is also related to the increase in new investors. If adding and removing hedge fund capital was frictionless, we would expect that investors would react immediately to this shock, such that our lead/lag structure in the dependent variable and board measures should mitigate these concerns. In an effort to address this point, in Models 3 and 4 we include *Young Advisor*, a dummy variable for funds with younger advisors (advisor age below median), and interact this measure with *Add Outside Board.* If the decision by the fund to change its board was related to a shock in an omitted factor, we would expect this to affect all funds equally. If however, investors are responding to a change in board structure rather than an omitted shock, we would expect that in funds where the benefit of monitoring is high, investors will react more strongly than in funds where the benefit of external monitoring is lower.

In Model 3, we again find that *Outside Board* is associated with a small, but statistically significant increase in the number of investors. Interestingly, however, we find no evidence that older advisors see a statistically significant increase in the number of investors; the main effect on *Add Outside Board* is only an increase of 3.84 investors (*t*-stat = 0.79). For younger advisors, however, we see a meaningful increase in the number of new investors, as the total effect of a young advisor adding an outside board is 16.50 new investors (*t*-stat = 2.13). This cross-sectional variation in investors' reactions to the decision to alter the board suggests that the changes we observe in the fund's investor are the result of the changes to the board.

4.2.2 Flows

In Table 6, we use implied net flows as a more direct measure of how investors react to the change in board structure. We use the following formula to estimate new flows:

$$Flow_{i,t} = \frac{AUM_{i,t} - (AUM_{i,t-1} * (1 + Return_{i,t}))}{AUM_{t,t-1}} \qquad (2)$$

The estimation of flows necessitates that we merge the sample of Form D funds to the sample of commercial database funds. While this greatly reduces our number of observations, the richer data allows us to control for more observable factors that are likely to affect investors' allocation of capital. These data also afford us the opportunity to examine the cross-sectional variation in the reaction to changes in board structure. As discussed in the prior section, the benefit of outside boards may be higher for funds with certain characteristics. We examine the variation along three dimensions: age of the advisor, size of the fund, and illiquidity of the fund shares. We define *Young Advisor* equal to one if the fund advisor's tenure in our sample is below the median, and zero otherwise. We define *Small Fund* equal to one if the fund's size is below the median,

and zero otherwise. We define *Illiquid Fund* equal to one if the first principal component of the fund's lockup, withdrawal frequency, and notice period are above the median, and zero otherwise. To allow for non-linearity in the fund's flow-performance relation, we estimate the model using a piece-wise linear specification similar to Sirri and Tufano (1998) and Ben-David, Franzoni, and Moussawi (2011). We also control for lagged values of the # of directors, log AUM, log age, management fee, incentive fee, log lock-up, and log withdrawal frequency. The estimates for the controls are omitted for brevity. To control for unobservable heterogeneity, we include a fixed effect for each jurisdiction-year and style-year in our sample. Our standard errors are clustered at the fund level.

From Model 1 in Table 6, we find that funds with outside boards receive flows which are both economically and statistically similar to funds that do not have outside boards. In the quarter following a change to an outside board, however, we find that these funds receive a 12.25% net inflow of capital (*t*-stat=2.05), similar to our findings in Table 5. However, this effect varies considerably in the cross-section of funds. We find that the effects are economically much larger in funds where we would expect the value of external monitoring to be higher. For example, when funds with an experienced advisor add an outside board, they receive a 4.81% net inflow of capital. However, when funds with an inexperienced advisor add an outside board, they receive a 16.85% net inflow of capital. A similar pattern is found for fund size and illiquidity (though the difference in illiquidity is not significant at conventional levels). These results suggest that outside directors are strongly related to not only an increase in the breadth of the investor base, but a higher level of capital accumulation.

4. Director Exits

4.1 Hypothesis Development

The results in the previous sections are consistent with funds selecting outside directors to aid their ability to raise capital and mitigate agency problems between the manager and investors. A critical assumption of this story is that directors actually monitor managers and have some mechanism to influence managerial behavior. Given that directors are hired by the manager and do not fire the manager that hired them, what power do hedge fund boards actually have?

We posit that directors can force the manager to act appropriately by threatening to leave the board if they detect managerial misconduct or other behavior detrimental to investors (and thus the reputation of the director). High quality directors that care about protecting their reputation will only join and remain on the board of funds whose actions will not adversely affect their reputational capital. Thus, installing a board of outside directors could serve as a signaling device to investors that the fund's operations are of 'good-type', such that the fund can be trusted not to expropriate from or defraud investors. Moreover, this mechanism could prevent 'bad-type' funds from mimicking 'good-type' funds by hiring outside directors, as director exit would reveal their type to investors. In this sense, the role of the board could be similar to that of an auditor. Auditors certify the validity of financial statements, and can credibly commit to only certify truthful statements due to their potential reputational loss for certifying false disclosure. However, distinct from the role of an auditor, the board's role is to certify the validity of the operational controls and procedures governing portfolio risk and the potential for conflicts of interest with investors.

Ex ante, the director's threat of exit could serve to restrain managers who are wary of losing the director's certification. This governance mechanism is analogous to the theory of

'governance through exit' in the corporate blockholder literature (Admati and Pfleiderer 2009, Edmans 2009, Edmans and Manso 2011). This theory states that a blockholder can influence managerial actions by threatening to sell the stock and thus providing downward pressure on the firm's share price. This threat of exit acts as an ex ante incentive for managers to increase firm value in order to dissuade the blockholder from selling his shares. In our context, a hedge fund director may have similar de facto authority simply through acting as a certification mechanism.

In what follows, we test whether outside directors exiting the board serves as a signal to investors of problems at the fund by examining the change in flows following a director turnover. Because funds must disclose material changes to the board in their Form D filings, we are able to identify the dates that directors step down from their position. Though we do not know the reason for the turnover, we can identify whether the director was concurrently replaced by another independent director. We conjecture that though all turnovers of outside directors should be signals to the market, director exits without a subsequent replacement of an outsider director should serve as a stronger signal that the fund could be facing problems in the future.

4.2 Evidence from Flows

During our sample period, 22% of funds experience a change among their outside board members. Just over half of the changes involve cases where the size of the board remains the same, but the identity of the board members changes. In a quarter of these cases, the change in board membership alters whether the board is majority independent.

To examine the effect of board changes on flow, we identify several categories of changes. *Outside Director Turnover* is an indicator variable equal to one if there was any change in the outside board membership in the last quarter, and zero otherwise. *Lose Outside Director* is

an indicator variable equal to one if one or more outside directors leave the board and are not replaced by an alternative outside board member, and zero otherwise. *Replace Outside Director* is an indicator variable equal to one if one or more outside directors leave the board, but are replaced by an alternative outside board member, and zero otherwise. *Lose All Outside Director* is an indicator variable equal to one if all outside directors leave the board and are not replaced, and zero otherwise.

We model the relationship between changes in board structure and fund flows for offshore hedge funds. The unit of observation is a hedge fund - quarter. The dependent variable is the fund's quarterly, implied net flow. While we lack clear instruments or an exogenous change in regulatory policy, we attempt to identify the effect of board changes on flows by careful timing of our tests and controlling for the most obvious potential confounding factor: performance. As the existing structure of the board may make changes more likely (i.e. a board with no outside directors cannot lose an independent director), we control for the prior board structure. Likewise, we control for other factors that we previously documented are correlated with independence: fund size, age, management fee, incentive fee, lockup, and withdrawal period. We also include jurisdiction-quarter and style-quarter fixed effects to control for time-varying style influences on investor flows. We cluster standard errors at the fund level.

In Table 7, we report the results of our estimations. In the first specification we consider the effect of any change in the outside board on fund flows. We find that *Outside Director Turnover* has a negative and significant coefficient of -3.7%. This result can be interpreted as a 3.7% outflow when there is any change in outside board membership, all else equal. In the second specification, we separate the change variables into *Lose Outside Director* and *Replace Outside Director* variable. We find that investors respond much stronger to the loss of an outside

director that is not replaced (-8.18%) compared to the loss of an outside director that is replaced with another outside director (-0.53%). This divergence is consistent with conjecture that the loss of an outside director is a stronger negative signal if the fund does not (or cannot) replace the director. In the third specification, we consider the case where the board loses all outside directors. Not surprising, the effect is even more severe. The coefficient on *Lose All Outside Director* implies a flow of -27.11%.

By the construction of the lagged turnover, the timing suggests that the director exit precedes the fund flow. As flows are measured over the duration of a quarter and share restrictions may prohibit investors from immediately acting on information, the direction of influence is difficult to determine. To address this issue, we re-estimate our model with additional lags of director turnover. Our results are qualitatively similar across approaches.

As we control for recent performance in our specifications, the results are consistent with investors reacting to the departure of an independent director by withdrawing assets from the manager. Thus, our results suggest that investors view director exits as a negative signal about the future prospect of the fund. Are they right? To see if investors correctly perceive the content of the exit signal, we next examine whether the probability of fund failure is higher following director exits.

4.3 Evidence from Fund Failure

4.3.1 Fund-level evidence

In this section, we study whether investors correctly perceive the content of the exit signal by examining the relation of director changes and fund failure. If director exits are informative, we expect to see worse outcomes for funds following these events, such as fund

failures. Brown, Goetzmann, and Park (2001) show that fund failure greatly reduces future job prospects for fund managers. If fund failure provides a similar tarnish on prospects for directors, directors have strong incentives to avoid being associated with failed funds. Therefore, we expect to find that fund failures are more likely to occur following the exit of an independent director.

To examine the relation between director departures and fund failure, we employ Cox proportional hazards model of failure propensity. The baseline hazard rates are estimated non-parametrically. Failure is defined using the fund's voluntarily stated reason for delisting from a database. If we instead define failure as the exit from the merged commercial hedge fund database, we find similar results. Funds may of course exit a commercial database out of strength if they have grown the size of the fund to the point where they no longer need to attract outside capital. However, Agarwal, Fos, and Jiang (2013) and Aiken, Clifford, and Ellis (2013) find that funds that delist from a commercial database perform substantially worse in the post-delisting period. Following the approach in the prior section, we identify funds that have changes in board structure and allow these changes to that shift the baseline hazard rate. As before, we control for other factors that we previously documented to be correlated with independence. In addition, we also include the net flows experienced by the fund. As we show in the prior section, director departures and flows are correlated. By including flows in the specification, we can determine whether any impact of departures on failure rates is related to the departure itself rather than due to higher outflows. Standard errors are clustered at the fund level.

Table 8 reports odds ratios of fund failure. The baseline failure rate is 2% per quarter. In the first specification, the odds ratio on *Outside Director Turnover* is 2.612. Thus, a fund that has experienced any turnover in its outside directors has approximately more than twice as likely to

fail. When we separate turnover into *Lose Outside Director* and *Replace Outside Director*, we find that the funds that lost outside directors are over nine times more likely to fail. In the third column, we find a positive and significant effect on *Lose All Outside Director*. Overall, we find that the exit of independent directors is associated with a significant increase in the likelihood of fund failure. Given that we control for fund flows and recent performance, this suggests that the exit of director is informative about future condition of the fund.

4.3.2 Director-level evidence

In the prior section, we assumed that directors had incentives to avoid fund failures. In this section, we provide more direct test of this assumption. We examine how association with a fund failure alters the likelihood of directors joining additional boards. We also examine whether the association with failure on one fund is associated with a higher departure rate on other concurrently held boards. While the negative effect of failure has been established for fund managers (see Brown, Goetzmann, and Park (2001)), we provide the first evidence of career effects for fund directors.

In Table 9, we estimate logistic models of directorship additions and departures. The unit of observation is the directorship-quarter. In the first three columns, the dependent variable is whether the director joins a board in the quarter. Standard errors are clustered by the individual and quarter. In column one, the independent variable is a dummy that equals one if the director sat on a board of a fund that failed in the prior quarter. In column two, the independent variable is a dummy that equals one if the director sat on a board (of a fund managed by a different advisor) of a fund that failed in the prior quarter. In column three, the independent variable is a dummy that equals one if the director sat on a board of a fund that failed in the prior year. In all

three specifications, a fund failure is related to a dramatic decrease in the likelihood of joining another board. All specifications control for the current number of boards on which the director serves, which is positively related to the likelihood of joining another board.

In columns four through six, we consider the change in likelihood of exiting a board that the director already serves and the previously defined fund failure variables. While we find a positive relation (odds ratio greater than one), none of the effects are statistically significant at conventional levels. Overall, we find strong evidence that being associated with a fund failure greatly reduces the prospects for joining future boards, but limited evidence that it causes directors to lose the board seats that they already have.

5. Conclusion

Following the recent wave of scandals and failures in the hedge fund industry, considerable debate emerged to whether hedge funds employ suitable governance practices to protect investors. One aspect of hedge fund governance that has come under increasing scrutiny is the board of directors. Hedge fund directors have fiduciary duties to protect investor interests by monitoring the operational practices of hedge fund managers. However, the directors are selected by fund managers and have significantly less explicit authority than the directors of traditional corporations. As such, a common conception is that hedge fund boards are irrelevant rubber-stamps that serve little purpose other than to superficially satisfy offshore regulations. In this paper, we examine the structure of hedge fund boards and their relation to fund characteristics and investment using a newly created dataset of fund available from 2009 to 2012.

We find that, though some funds install a board comprised only of insiders, over three quarters of funds have at least one outside director, and over half of funds have a board with a majority of outside directors. The variation in board structure is in part explained by fund characteristics that are consistent with boards serving as a partial solution to agency problems. Given their limited ability to remove the manager, we search for a channel by which directors can influence managerial behavior. Given the severe career consequences for a director being associated with failing funds, our evidence suggests that directors may derive implicit authority from their ability to exit the board.

Board structure is ultimately choice of the fund manager; as such, we are cautious to present causal interpretation regarding board monitoring. That said, at a minimum, our findings contradict the notion that hedge fund boards are irrelevant. We believe this paper provides a first step towards better understanding the role of boards of directors in the governance of hedge funds.

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Figure 1
Offshore Domiciles

We present the percentage of offshore funds by domicile. We determine domicile from each fund's Notice of Exempt Offering of Securities. Our sample covers 2009-2012.

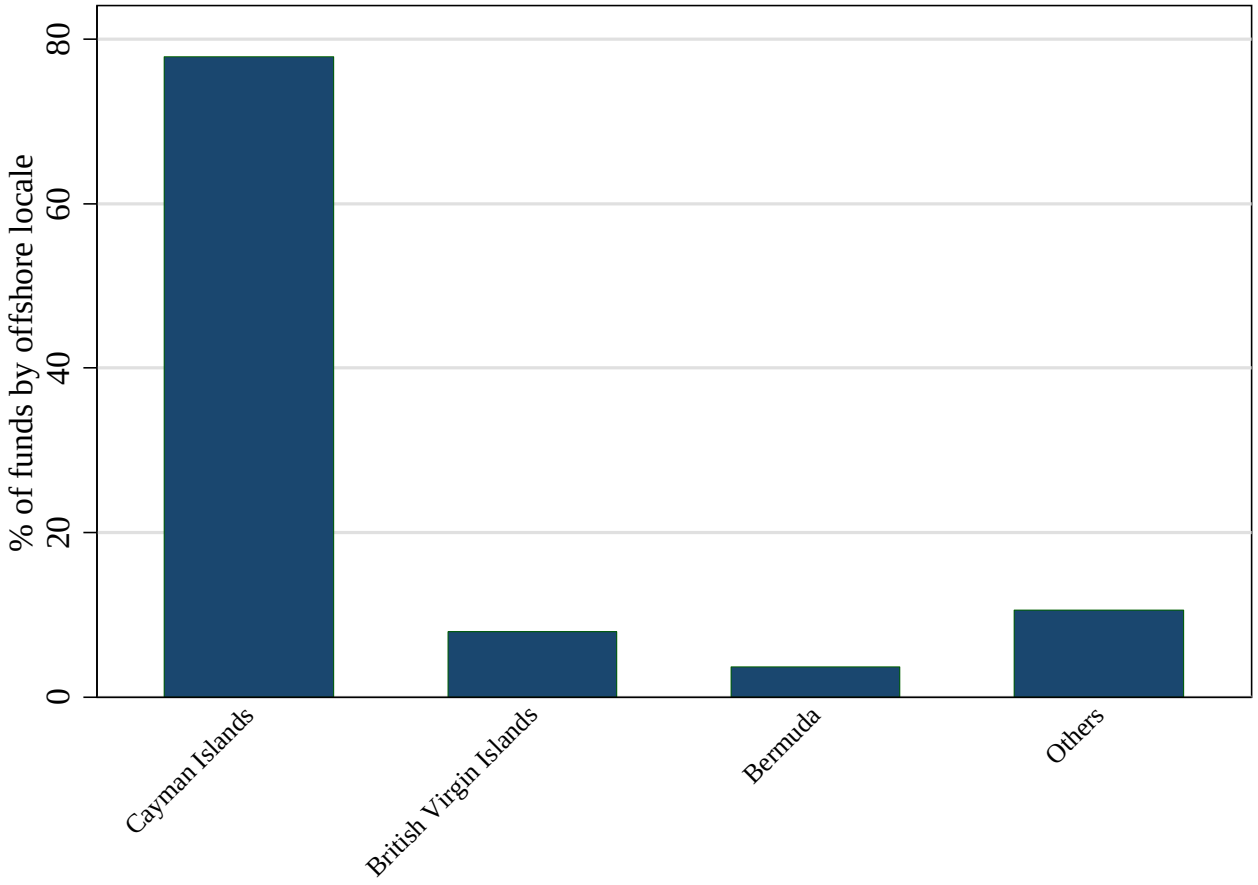

Figure 2
Number of Board Members by Domicile

We present the average board structure by domicile over our sample period of 2009-2012. All Directors are a count of the total number of directors on the board. Insiders are a count of directors that are either directly employed by the fund or can be linked to the fund through other funds of the advisor. Outsiders are a count of directors that we are unable to identify any relation to the fund or advisor.

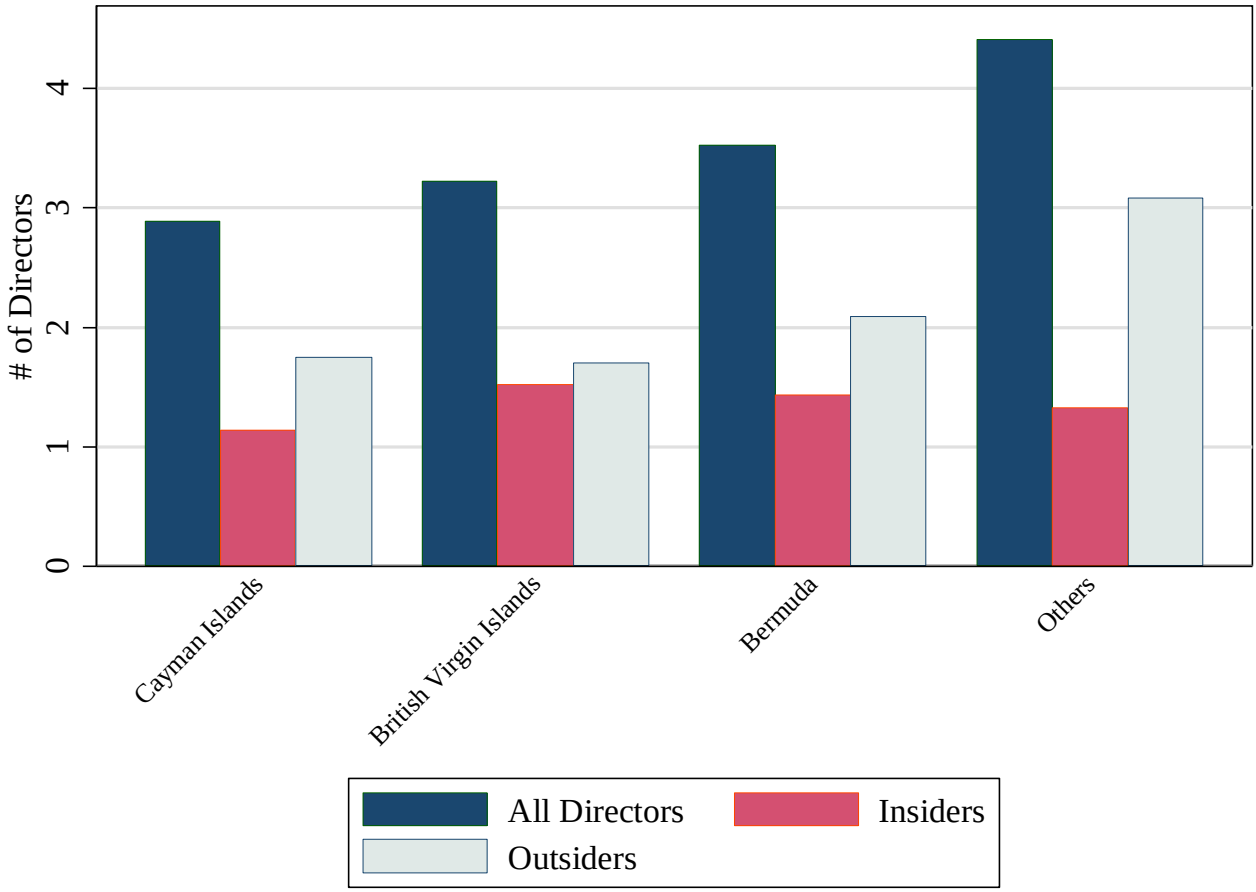

Figure 3
Board Structure by Domiciles

We present the average board structure by domicile over our sample period of 2009-2012. Any Outsider equals one if at least one board member is deemed to be unrelated to the fund or its advisor, and zero otherwise. Majority Outsider equals one if the majority of the fund's board members are deemed to be unrelated to the fund or its advisor, and zero otherwise.

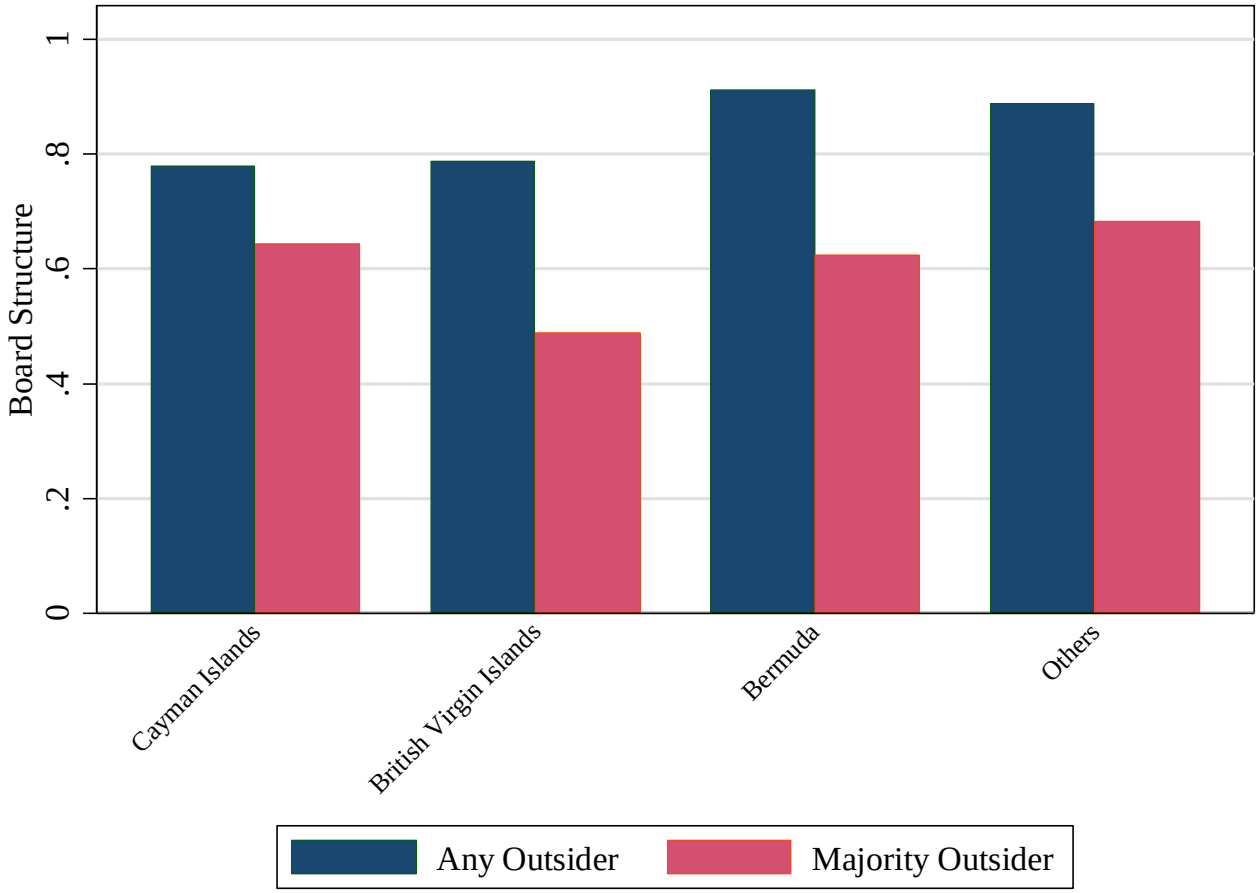

Table 1
Hedge Fund Board Structure

We present summary statistics for board structures (Panels A and B) and individual directorships (Panels C and D) over our sample period of 2009-2012. In Panel A, we report the distribution of board structures. # Directors is a count variable for the number of directors on the board. # Insider is a count variable for the number of inside directors on the board. # Outsider is a count variable for the number of outside directors on the board. Any Outsider is equal to one when the board has at least one outside board member deemed to be unrelated to the fund or its advisor, and zero otherwise. Outside Board is equal to one if a majority of the fund's board members are deemed to be unrelated to the fund or its advisor, and zero otherwise. In Panel B, we tabulate the frequency of board structures by number of inside and outside directors. In Panel C, we report the number of unique directors and a breakdown of directorships according to outsider classification and number of advisors and funds. In Panel D, the unit of observation is a fund-directorship. Directors may serve the board of multiple funds for the same advisor. As such, we present summary statistics separately at the advisor and fund level.

Panel A: Board Structure

	Mean	10th	25th	Median	75th	90th
# Directors	3.10	2.00	2.00	3.00	3.00	5.00
# Insider	1.20	0.00	0.00	1.00	2.00	3.00
# Outsider	1.90	0.00	1.00	2.00	2.00	4.00
Any Outsider	79%	0%	100%	100%	100%	100%
Outside Board	62%	0%	0%	100%	100%	100%

Panel B: Distribution of Board Structures

	Inside Directors				
Outside Directors	0	1	2	3+	
0	0.0%	5.9%	7.8%	7.5%	21.1%
1	1.2%	4.8%	3.6%	1.3%	10.9%
2	14.5%	23.5%	2.5%	2.1%	42.7%
3+	15.5%	5.4%	2.3%	2.1%	25.3%
	31.2%	39.5%	16.3%	13.0%	100.0%

Panel C: Director Summary

Type	N	Advisors	N	Funds	N
Outside Director	2,080	>=5 Firms	178	>=10 Funds	279
Inside Director	3,380	>=10 Firms	93	>=20 Funds	117
		>=15 Firms	44	>=30 Funds	38
		>=20 Firms	28	>=50 Funds	15

Panel D: Distribution of Directorships

Advisors	Mean	10th	25th	Median	75th	90th
Outside Director	8.5	1	1	3	9	24
Inside Director	2.0	1	1	1	1	2

Funds	Mean	10th	25th	Median	75th	90th
Outside Director	14.8	1	2	7	19	36
Inside Director	5.7	1	1	2	5	17

Table 2
Fund Characteristic Summary Statistics

We present summary statistics for the hedge funds in our sample. Our variables are defined as follows: Advisor Age is the advisor's age (in years) since the advisor first offered any fund. AUM is the size of the fund (in $ Millions). Fund Age is the fund's age (in years) since the fund listed in a commercial database. # Investors is the number of investors in the fund. Return is fund's annual raw return. Management Fee and Incentive Fee represent the fund's compensation structure. Lockup and Withdrawal (days) represent the fund's share illiquidity. Advisor Ownership is the fraction of the fund own by the manager or a related party. Fund of Fund Ownership is the fraction of the fund own by Fund of Funds. Internal Valuation is the fraction of the fund that is valued internally. Institution Clientele is an indicator variable equal to one if the fund used the qualified investor Section 3(c)(7) exemption to be exempted from the Investment Company Act, and zero otherwise. Side letter is an indicator variable equal to one if the fund has given different contract term (e.g. share liquidity) to certain investors, and zero otherwise.

	Mean	10th	25th	Median	75th	90th
Advisor Age	7.3	1	3	7	10	14
AUM ($MM)	380.0	14.2	45.0	135.0	387.0	1,080.0
Fund Age	7.7	2.0	3.9	6.8	10.4	14.9
# Investors	41.7	1	2	9	34	103
Return	7.96%	-10.24	-1.54	5.59	13.88	27.01
Management Fee	1.50%	1.00	1.00	1.50	2.00	2.00
Incentive Fee	16.74%	5.00	18.00	20.00	20.00	20.00
Lockup	180.9	0.0	0.0	0.0	360.0	365.0
Withdrawal	97.5	30.0	30.0	90.0	90.0	180.0
Advisor Ownership	12.72%	0.00	0.00	2.00	12.00	45.00
Fund of Fund Ownership	21.42%	0.00	0.00	5.00	35.00	73.00
Internal Valuation	17.17%	0.00	0.00	0.00	2.00	100.00
Institutional Clientele	77.84%	0.00	100.00	100.00	100.00	100.00
Side Letter	26.76%	0.00	0.00	0.00	100.00	100.00

Table 3
Outside Boards and Fund Characteristics

We model the relation of offshore hedge funds' board structures over the period 2009-2012. The unit of observation is a hedge fund - quarter. We use a logit model where the dependent variable, Outside Board, takes on a value of one if a majority of the fund's board members are deemed to be unrelated to the fund or its advisor, and zero otherwise. In Models 1 and 2, we model the decision to have an Outside Board on our full sample. In Models 3 and 4, we repeat the analysis only on the sample of funds with at least two directors. Our coefficients are presented as odds ratios and we include fixed effects for each offshore domicile-year to control for unobservable heterogeneity. Our standard errors are clustered at the fund level. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	1 Outside Board	2 Outside Board	3 Outside Board
# Directors$_{t-1}$	1.1495***	1.1371*	1.0591
	[2.874]	[1.785]	[0.577]
Reports to Commercial Database	1.0792	0.8786	
	[0.957]	[-1.121]	
Log Age$_{t-1}$	1.0995**	1.1129*	0.9678
	[2.155]	[1.649]	[-0.252]
Log Advisor Tenure$_{t-1}$	0.9100**	0.8293***	1.1747
	[-2.076]	[-2.606]	[1.169]
Institutional Clientele	1.2365**	1.0642	0.8797
	[2.506]	[0.473]	[-0.647]
Log AUM$_{t-1}$		1.3289***	1.5083***
		[4.711]	[4.305]
Side Letter		1.1895	1.0949
		[1.410]	[0.472]
Internal Valuation		1.0754	1.1982*
		[1.242]	[1.754]
Advisor Ownership		0.8462**	0.9113
		[-2.051]	[-0.691]
FoF Ownership		1.2461***	1.2189*
		[3.605]	[1.718]
Log Withdrawal			1.3515***
			[3.144]
Jurisdiction * Time FE	Yes	Yes	Yes
Observations	40,360	18,771	7,710

Table 4
De Novo Fund Size

We model the initial fund size (actual amount of offering sold) using D fillings for offshore hedge funds over the period 2009-2012. The unit of observation is a fund start. The dependent variable is the log ($ of initial offering sold). Outside Board equals one if the board has a majority of outsiders, and zero otherwise. Number of Directors is the number of board members. Reports to the Commercial Database equals one if the fund reports to a commercial database. Advisor Age is the age of the fund's advisor. Institutional Clientele equals one if the fund used the qualified investor Section 3(c)(7) exemption to be exempted from the Investment Company Act. We include Jurisdiction-time fixed effects. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	1	2	3
Outside Board	0.2082*	0.2078*	0.3170**
	[1.823]	[1.837]	[2.369]
Advisor Age		0.0242**	0.0428***
		[2.189]	[2.751]
Outside Board * Advisor Age			-0.0328
			[-1.622]
Number of Directors		0.0303	0.0276
		[0.683]	[0.616]
Reports to Commercial Database		-0.2114	-0.1929
		[-1.433]	[-1.317]
Institutional Clientele		0.3748**	0.3925***
		[2.554]	[2.687]
Jurisdiction * Time FE	No	Yes	Yes
Observations	974	974	974
R-squared	0.004	0.051	0.053

Table 5
Investors and Change to an Outside Board

We model the relationship between changes in board structure and changes in the number of investors in the fund using Form D filings for offshore hedge funds over the period 2009-2012. The unit of observation is a hedge fund - quarter. The dependent variable is the change in the number of investors from t-1 to t+1. In Models 3-4, we test for differences in flows based on a proxy for fund level information asymmetry. Each quarter we rank funds based on tenure of the manger. We define Young Advisor equal to one if the fund advisor's tenure in our sample is below the median, and zero otherwise. Log Capital Raised is log of the fund's stated amount sold from the Form D filing. We include Jurisdiction-time fixed effects to control for unobserved heterogeneity. Our standard errors are clustered at the fund level. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	1	2	3	4
	Δ Investors$_{(t-1, t+1)}$	Δ Investors$_{(t-1, t+1)}$	Δ Investors$_{(t-1, t+1)}$	Δ Investors$_{(t-1, t+1)}$
Outside Board	0.6221**	0.5846*	0.6217**	0.5808*
	[2.076]	[1.954]	[2.078]	[1.945]
Add Outside Board	10.7106**	10.6367**	3.8446	3.7023
	[2.237]	[2.228]	[0.788]	[0.760]
(1) Young Advisor			0.0933	0.2195
			[0.309]	[0.728]
(2) Young Advisor * Add Outside Board			12.6544	12.7636
			[1.385]	[1.400]
Total Effect (1) + (2)			16.499**	16.4659**
			[2.133]	[2.135]
# Directors	-0.0156	-0.0336	-0.0183	-0.0356
	[-0.160]	[-0.350]	[-0.187]	[-0.369]
Institutional Clientele	0.5155*	0.2368	0.5099*	0.2317
	[1.729]	[0.813]	[1.704]	[0.794]
Log Age	-0.5053**	-1.0662***	-0.4579*	-0.9819***
	[-2.243]	[-4.984]	[-1.831]	[-4.173]
Log Capital Raised		0.3854***		0.3889***
		[6.987]		[6.972]
Jurisdiction * Time FE	Yes	Yes	Yes	Yes
Observations	33,733	33,733	33,733	33,733
R-squared	0.005	0.008	0.006	0.008

Table 6
Flows and Changing to an Outside Board

We model the relationship between changing to an outside board structure and flows for offshore hedge funds over the period 2009-2012. The unit of observation is a hedge fund - quarter. The dependent variable is the funds' quarterly, implied net flow. Outside Board is an indicator variable equal to one if the majority of the fund's directors are deemed to be unrelated to the fund or its advisor, and zero otherwise. Add Outside Board is an indicator variable equal to one if the fund makes changes to the board, such that the majority of the fund's directors are deemed to be unrelated to the fund or its advisor, and zero otherwise. In Models 2-4, we test for differences in flows based on cross-sectional proxies for fund level information asymmetry. Each quarter we rank funds based on tenure of the manger, fund size, and share illiquidity. We define Young Advisor equal to one if the fund advisor's tenure in our sample is below the median, and zero otherwise. We define Small Fund equal to one if the fund's size is below the median, and zero otherwise. We define Illiquid Fund equal to one if the first principal component of the fund's lockup, withdrawal frequency, and notice period are above the median, and zero otherwise. Our control variables (omitted for brevity) are lagged values of the # of directors, log AUM, log age, management fee, incentive fee, log lock up log withdrawal frequency, and a piece-wise linear specification of the fund's style-adjusted performance similar to Ben David, et al.(2011). We include Style-time and Jurisdiction-time fixed effects in each model to control for unobservable heterogeneity. Our standard errors are clustered at the fund level. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	All Funds	Young Advisor	Small Fund	Illiquid Fund
(1) Add Outside Board$_{t-1}$	0.1225**	0.0481*	0.0319	0.0720**
	[2.052]	[1.770]	[1.094]	[2.416]
(2) Add Outside Board$_{t-1}$ * Fund Asymmetry$_{t-1}$		0.1204	0.1487	0.1357
		[1.212]	[1.500]	[0.878]
Total Effect (1) + (2)		0.1685*	0.1806**	0.2077
		[1.764]	[1.921]	[1.371]
Outside Board$_{t-1}$	-0.0106	-0.0082	-0.0083	-0.0079
	[-1.498]	[-1.140]	[-1.147]	[-1.096]
Fund Asymmetry$_{t-1}$		0.0018	0.0003	0.0100
		[0.239]	[0.035]	[0.969]
Controls	Yes	Yes	Yes	Yes
Style*Time FE	Yes	Yes	Yes	Yes
Jurisdiction*Time FE	Yes	Yes	Yes	Yes
Observations	5,083	4,795	4,815	4,796
R-squared	0.095	0.100	0.099	0.100

Table 7
Director Exits and Fund Flows

We model the relationship between changes in board structure and fund flows for offshore hedge funds over the period 2009-2012. The unit of observation is a hedge fund - quarter. The dependent variable is the funds' quarterly, implied net flow. Outside Director Turnover is an indicator variable equal to one if there was any change in the outside board membership in the last quarter, and zero otherwise. Lose Outside Director is an indicator variable equal to one if one or more outside directors leave the board and is not replaced by an alternative outside board member, and zero otherwise. Replace Outside Director is an indicator variable equal to one if one or more outside directors leave the board, but is replaced by an alternative outside board member, and zero otherwise. Lose Lose All Outside Director is an indicator variable equal to one if all outside directors leave the board and are not replaced, and zero otherwise. We include style-quarter and jurisdiction-quarter fixed effects. Our standard errors are clustered at the fund level. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	1	2	3
Outside Director Turnover	-0.0371***		
	[-2.842]		
Lose Outside Director (No replacement)		-0.0818***	
		[-2.728]	
Replace Outside Director		-0.0053	
		[-0.283]	
Lose All Outside Directors			-0.2711***
			[-3.438]
Outside Board$_{t-1}$	-0.0097	-0.0093	-0.0098
	[-1.263]	[-1.199]	[-1.276]
Log AUM$_{t-1}$	-0.0030	-0.0031	-0.0033
	[-1.096]	[-1.122]	[-1.194]
Log Age$_{t-1}$	-0.0614***	-0.0615***	-0.0616***
	[-7.805]	[-7.826]	[-7.827]
Management Fee	0.0025	0.0027	0.0029
	[0.304]	[0.323]	[0.354]
Incentive Fee	0.0020**	0.0020**	0.0019**
	[2.177]	[2.132]	[2.026]
Log Lockup	-0.0005	-0.0004	-0.0005
	[-0.322]	[-0.308]	[-0.353]
Log Withdrawal	-0.0005	-0.0008	-0.0003
	[-0.076]	[-0.122]	[-0.053]
# Directors$_{t-1}$	-0.0038	-0.0034	-0.0039
	[-1.423]	[-1.289]	[-1.435]
Low Performance	0.3198***	0.3162***	0.3139***
	[3.810]	[3.779]	[3.764]
Mid Performance	0.0498***	0.0502***	0.0503***
	[2.795]	[2.817]	[2.824]
High Performance	-0.0187	-0.0155	-0.0211
	[-0.206]	[-0.172]	[-0.232]
Style*Time FE	Yes	Yes	Yes
Jurisdiction*Time FE	Yes	Yes	Yes
R-squared	0.131	0.131	0.133
Observations	5,219	5,219	5,219

Table 8
Directors Exits and Hedge Fund Failure

This table reports odds ratios of fund failure. The estimation employs a Cox proportional hazards model of changes in board structure on failure propensity. Failure is defined using the fund's voluntarily stated reason for delisting from a database. Outside Director Turnover is an indicator variable equal to one if there was any change in the outside board membership in the last quarter, and zero otherwise. Lose Outside Director is an indicator variable equal to one if one or more outside directors leave the board and are not replaced by an alternative outside board member, and zero otherwise. Replace Outside Director is an indicator variable equal to one if one or more outside directors leave the board, but is replaced by an alternative outside board member, and zero otherwise. Lose All Outside Director is an indicator variable equal to one if all outside directors leave the board and are not replaced, and zero otherwise. The baseline hazard rates are estimated non-parametrically and allow for separate baseline hazard rates for each fund style and jurisdiction. Standard errors are clustered at the fund level. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	1	2	3
Outside Director Turnover	2.612*		
	[1.721]		
Lose Outside Director (No replacement)		9.0043***	
		[2.997]	
Replace Outside Director		2.0226	
		[1.208]	
Lose All Outside Directors			2.3726*
			[1.807]
Outside Board	1.0663	1.0694	1.4530
	[0.191]	[0.199]	[1.010]
Flow	0.0798***	0.0837***	0.0751***
	[-2.679]	[-2.550]	[-2.595]
Log AUM	0.6794***	0.6795***	0.6813***
	[-4.403]	[-4.390]	[-4.426]
Management Fee	1.1911	1.1660	1.2440
	[0.374]	[0.323]	[0.435]
Incentive Fee	0.9583	0.9566	0.9606
	[-1.537]	[-1.522]	[-1.427]
Log Lockup	1.0457	1.0402	1.0454
	[0.789]	[0.691]	[0.790]
Log Withdrawal	1.4285	1.4095*	1.4051*
	[1.943]	[1.851]	[1.902]
# Directors	0.6902***	0.6604***	0.7445***
	[-2.852]	[-3.058]	[-2.377]
Low Performance	0.0780	0.0481	0.1195
	[-0.752]	[-0.867]	[-0.609]
Mid Performance	0.9118	0.9435	0.9016
	[-0.102]	[-0.067]	[-0.118]
High Performance	0.0008	0.0008	0.0009
	[-1.552]	[-1.583]	[-1.357]
Observations	5,715	5,715	5,715

Table 9
Fund Failure and Future Director Employment

This table reports odds ratios of future additions to and departures from hedge fund boards following fund failure. Note, by construction, the departures do not include departures for the failed fund. The unit of observation is the director-quarter. Fund Failure is defined using the fund's voluntarily stated reason for delisting from a database. Standard errors are clustered both at the individual and quarter level. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

	Join Board			Exit Board		
Fund Failure in Prior Quarter	0.2639***			1.4434		
	[-6.634]			[1.323]		
Fund Failure in Prior Quarter Outside of Advisor		0.2809***			1.5243	
		[-5.780]			[1.460]	
Fund Failure in Prior Year			0.3023***			1.2000
			[-7.334]			[0.644]
log(Director # of Funds)	1.1591***	1.1517***	1.3264***	1.0221	1.0182	1.0333
	[3.004]	[2.877]	[3.674]	[0.374]	[0.316]	[0.538]
Jurisdiction Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	178,238	178,238	178,238	178,238	178,238	178,238