

Portfolio Manager Compensation in the U.S. Mutual Fund Industry*

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Abstract

This paper empirically studies portfolio manager compensation structures in the U.S. mutual fund industry. Using a unique hand-collected dataset on over 4,000 mutual funds, we find that about three-quarters of portfolio managers receive explicit performance-based incentives from the investment advisors. Our cross-sectional investigation suggests that portfolio manager compensation structures are broadly consistent with an optimal contracting equilibrium. In particular, explicit performance-based incentives are more prevalent in scenarios where this incentive mechanism is more valuable or alternative incentive mechanisms, such as labor market discipline, are less effective. Specifically, our results show that explicit performance-based incentives are more common when (i) the investment advisors are larger or have more complex business models, (ii) the fund returns are less volatile, (iii) the portfolio managers are not the stakeholders of the advisors, (iv) the funds are managed by a team rather than an individual, and (v) the funds are not outsourced to an external sub-advisory firm. Overall, our study provides novel empirical evidence on optimal contracting in the delegated asset management industry.

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Mutual funds are important investment vehicles that pool money from many investors for the purpose of investing in securities such as stocks, bonds, and money market instruments. As of 2010, about half of the U.S. households invest in mutual funds. When purchasing shares in a mutual fund, investors delegate the management of their investment to the investment advisor through advisory contracts. The investment advisor, in turn, hires portfolio managers to make the ultimate investment decisions for the fund. Although the advisory contracts between investors and investment advisors have received much attention in the literature¹, not much is known about the compensation contracts between the investment advisors and the portfolio managers. To fill this gap, we empirically study portfolio manager compensation structures in the U.S. mutual fund industry.

Beginning in March 2005, mutual funds are required by the Securities and Exchange Commission (SEC) to disclose the structure of the compensation of the portfolio managers in the Statement of Additional Information (SAI). For instance, mutual funds need to disclose whether portfolio manager compensation is fixed (or, variable) and whether (and, if so, how) the compensation is based on fund performance.² We hand-collect the information on portfolio manager compensation structures for a sample of 4,138 U.S. open-end mutual funds, which covers 4,010 unique portfolio managers working for 669 investment advisors.

Using this unique dataset, we carry out two main sets of analyses. First, we offer a comprehensive description and document the stylized patterns of portfolio manager compensation contracts in the U.S. mutual fund industry. Second, we examine the cross-sectional determinants of the contract features to test several implications of contract theory in the context of portfolio delegation. Our results show systematic patterns that are broadly consistent with the theory predictions.

¹ See, for example, Coles, Suay, and Woodbury (2000), Deli (2002), Elton, Gruber, and Blake (2003), Golec and Starks (2004), Massa and Patgiri (2009), Warner and Wu (2011).

² See Section I “Institutional Background” for a more detailed explanation.

On the descriptive level, we find the following stylized facts. First, ninety-eight percent of portfolio managers receive variable (salary-plus-bonus) compensation as opposed to fixed salaries. Second, about three-quarters of portfolio managers receive bonus based on the fund performance (referred to as explicit performance-based incentives) from the investment advisors.³ This percentage is much higher than the one observed in the advisory contract between fund investors and the investment advisors.⁴ Third, for portfolio managers with performance-based incentives, the average performance evaluation period is about three years. Lastly, about thirty percent of portfolio managers have deferred compensation.

Having documented the patterns of portfolio manager compensation structures, we next examine the cross-sectional determinants of the use of explicit performance-based incentives. We develop our hypotheses in the framework of optimal contracting theory. First, we consider the use of explicit performance-based incentives in inducing managerial effort. As in all principal-agent settings, moral hazard problem may emerge when it is too costly for the principal (investment advisors) to fully monitor the unobservable actions of the agent (portfolio managers).⁵ One way to alleviate this problem is to link pay to performance (e.g., Harris and Raviv (1979), Holmstrom (1979), Grossman and Hart (1983)). However, pay-for-performance is a costly mechanism as it distorts the risk sharing efficiency between the principal and the agent. Theory, thus, predicts that the probability of observing performance-based incentives should increase with the direct monitoring costs of the investment advisors (e.g., Garen (1985), Holmstrom (1989)) and decrease with the volatility of the fund performance (e.g., Holmstrom (1979), Garen (1994)). Second, we consider the effects of alternative

³ Note that we cannot rule out the possibility that for the one-quarter of funds without explicit performance-based incentives, there might be implicit performance incentives. For example, portfolio manager compensation may depend on the profits of the investment advisor, which can be viewed as implicit performance-based incentives given the positive flow-performance relationship (e.g., Sirri and Tufano (1998)).

⁴ According to Golec (1992), Deli (2002), and Elton, Gruber, and Blake (2003), the percentage of performance-based advisory contracts ranges from 2% to 6% in their sample funds.

⁵ We acknowledge that fund shareholders are the ultimate principal who delegates the portfolio management decisions. In this study, we take the stand that fund investors and investment advisors have the same objective.

effort-inducing mechanisms, such as managerial ownership (e.g., Jensen and Meckling (1976)) and labor market discipline (e.g., Fama (1980), Holmstrom (1999)). We expect that when these alternative mechanisms are in place, the need for explicit performance-based incentives falls.

To test the above predictions, we relate portfolio manager compensation structures to the characteristics of investment advisors, funds, and portfolio managers. Our results show systematic patterns that are broadly consistent with our hypotheses regarding an optimal contracting equilibrium. We discuss our main findings as follows.

First, we find that larger and more complex investment advisors tend to use more explicit performance-based incentives. We use assets under management and number of advisory employees to measure advisor size. To proxy for advisor complexity, we use clientele heterogeneity and number of financial industry affiliations. The effects are economically large. For instance, a one-standard deviation increase in the advisor assets under management is associated with an 11.2 percentage point increase in the probability of explicit performance-based incentives. These results are consistent with the prediction that larger and more complex advisors face higher direct monitoring costs and therefore use explicit performance-based incentives more often.

Second, we find that the fund's past volatility is negatively related to the use of performance-based incentives. This risk and incentive trade-off is economically significant. A one-standard deviation increase in fund return volatility is associated with decreases in the probability of performance-based incentives by 4.1 percentage points. This finding is consistent with the theoretical prediction of a negative relation between risk and incentives.

Third, portfolio managers who are the stakeholders (e.g., control owners) of the advisors receive fewer performance-based incentives. This evidence is consistent with the idea that ownership alleviates agency conflicts and hence reduces the need for explicit performance-based incentives. Moreover, the status of being a stakeholder has large economic effects. For instance, a change from

non-stakeholder to stakeholder reduces the probability of performance-based incentives by 28.1 percentage points.

Fourth, explicit performance-based incentives are more prevalent among portfolio management teams. In terms of economic significance, a switch from a single-manager to a portfolio management team is associated with a 6.0 percentage point increase in the probability of using performance-based incentives. These findings are consistent with the idea that weaker career concerns or the free-riding problem in teams distort managerial incentive for providing effort and hence requiring more explicit performance-based incentives.

Lastly, we find that portfolio managers of outsourced funds are less likely to receive explicit performance-based incentives compared to in-house managed funds. In terms of economic effects, portfolio managers of outsourced funds are 16.3 percentage points more likely to receive performance-based incentives than in-house managed funds. Our finding is consistent with the idea that portfolio managers of outsourced funds are subject to higher threat of dismissal for poor performance (Chen, Hong, and Kubik (2012) and Kostovetsky and Warner (2012)), which reduces the need for the explicit performance-based incentives.

We further examine the cross-sectional variation of performance evaluation period, conditional on the use of the explicit performance-based incentives. We find that performance evaluation periods are longer when (i) investment advisors are larger, (ii) portfolio managers are not the stakeholders of the advisors, and (iii) the funds are managed by a team rather than an individual.

Taken together, our evidence shows that portfolio manager compensation structures are broadly consistent with an optimal contracting equilibrium. In particular, explicit performance-based incentives are more prevalent in scenarios where theory predicts they are more efficient and where alternative mechanism, such as managerial ownership and labor market discipline, are less effective. Moreover, we find that investment advisors employ optimal performance evaluation periods when

designing compensation contracts.

Our paper contributes to the large literature on portfolio delegation in the mutual fund industry in several dimensions. First, while many studies focus on the advisory contracts between fund shareholders and investment advisors (e.g., Coles, Suay, and Woodbury (2000), Deli (2002), Elton, Gruber, and Blake (2003), Golec and Starks (2004), Massa and Patgiri (2009), Warner and Wu (2011)), our paper investigates the compensation contract between the investment advisors and the portfolio managers, which has been rarely studied in the literature. To the best of our knowledge, this study is the first to systematically analyze the portfolio manager compensation in the mutual fund industry.⁶ Our attempt is critical to the understanding of the important role of portfolio managers in asset management industry.

Second, our dataset includes characteristics of investment advisors, portfolio managers, and mutual funds, which have rarely been jointly studied in the previous literature. This unique dataset allows us to test theories on management compensation in the context of portfolio delegation. In particular, the low frequency of performance-based fees in the advisory contract between fund investors and the investment advisor is somewhat puzzling.⁷ One explanation is based on regulatory constraints about the symmetric shape of these contracts (e.g., Das and Sundaram (2002), Golec and Starks (2004)), Cuoco and Kaniel (2011)).⁸ An alternative explanation is based on the substitution effect between explicit contract incentives and implicit flow-performance incentives (e.g., Sirri and Tufano (1998), Basak, Pavlova and Shapiro (2008), Basak and Pavlova (2012)). We contribute to

⁶ Farnsworth and Taylor (2006) use a survey data and study the factors that affect the portfolio manager compensation of only about 400 portfolio managers. We are the first to study portfolio manager compensation using the audited information from the Statement of Additional Information (SAI) of over 4,000 funds, free of self-reporting and sample selection problems.

⁷ An important debate in this literature is whether (relative) performance-based contract provides managers with the right incentives for effort expenditure (e.g., Battacharya and Pfleiderer (1985), Starks (1987), Stoughton (1993), Admati and Pfleiderer (1997), Gómez and Sharma (2006), Dybvig, Farnsworth, and Carpenter (2010), Agarwal, Gómez, and Priestley (2012)) and whether they are useful devices to screen out more skilled managers (e.g., Heinkel and Stoughton (1994))

⁸ According to section 205 (a) (1) of the Investment Advisers Act of 1940, the incentive fees received by the investment advisor must be symmetric relative to the benchmark, with any increase in fees for above-benchmark performance matched by a symmetric decrease in fees for below-benchmark performance.

this literature by showing that in an unregulated environment, performance-based incentives are the dominant form of compensation contract between the investment advisor and the portfolio manager. Therefore, our empirical evidence supports the idea that the regulation constraint in place is related to the low frequency of performance-based advisory contracts.⁹

The remainder of the paper is organized as follows. Section I discusses the institutional background. Section II develops the hypotheses. Section III presents the data, variable construction, and sample description. Section IV discusses the empirical methodology and analyzes the cross-sectional determinants of portfolio manager compensation structures. Section V concludes the paper.

I. Institutional Background

Mutual funds are investment vehicles that pool money from many investors and invest it in a diversified portfolio of assets such as stocks, bonds and money market instruments. According to the Investment Company Institute 2011 Fact Book, U.S. mutual funds manage \$11.8 trillion total net assets by year-end 2010. In 2010, 44% of U.S. households own mutual funds and 23% of the households' financial assets are invested in the mutual funds.

Mandated by the Investment Company Act of 1940, mutual funds have a distinctive organization structure. A typical mutual fund consists of shareholders and board of directors. Shareholders, who are the owners of the funds, have specific voting rights to elect a board of directors who represent their interests. The board of directors is legally empowered to govern the fund, and their primary responsibility is to review and approve the advisory contract with an investment advisor who handles the day-to-day management of the fund. The portfolio manager is the employee of the investment advisor, and their selection, compensation and removal is at the

⁹ We cannot rule out that the observed differences in contracts between the first and second layers in the mutual fund industry are jointly optimal in a full equilibrium model. See Gervais, Lynch, and Musto (2005) for a model of the multi-layer principal-agent structure in the mutual fund industry.

advisor's discretion.¹⁰

Mutual fund shareholders do not contract directly with those who make the investment decisions, i.e. the portfolio managers. Instead, they contract with an investment advisor, which employs portfolio managers to make the investment activities for the fund. Investment advisors receive compensation through advisory fees for providing portfolio management services to fund shareholders. In the majority cases, the advisory fee is specified as a percentage of the fund's total net assets (e.g., Deli (2002)). Only a small portion of mutual funds compensate their investment advisors using incentive fees that are based on fund investment performance relative to some pre-specified benchmark. The advisory contract between fund shareholders and the investment advisor is constrained by regulation that prohibits asymmetric incentive fees. According to section 205 (a) (1) of the Investment Advisers Act of 1940, the incentive fees received by an investment advisor must be symmetric relative to the benchmark, with any increase in fees for above-benchmark performance matched by a symmetric decrease in fees for below-benchmark performance. On the other side, the contract between the investment advisor and the portfolio managers is not subject to these restrictions.¹¹

While the advisory contract between fund shareholders and the investment advisor has been studied in the literature, not much is known about the compensation contract between the investment advisor and the portfolio manager. Starting in March 2005, mutual funds are required by Securities and Exchange Commission (SEC) to disclose the structure of, and the method used to determine the compensation of the portfolio manager in its Statement of Additional Information (SAI).¹² This new

¹⁰ Although the SEC encourages the boards of directors and trustees to supervise the compensation of portfolio managers, conversations with industry professionals reveal that the effective monitoring is very limited.

¹¹ In a memorandum by SEC enclosed with Congressional Correspondence on Mutual Funds and Derivative Instruments dated September 26, 1994, footnote 35 states that "the Investment Advisers of 1940 prohibits most types of performance fees for registered investment advisers, but this prohibition does not apply to the compensation arrangements that investment advisers have with their employees, including mutual fund portfolio managers." At the same time, however, "fund managers and boards of directors or trustees should review portfolio manager compensation arrangements to insure that they are designed with sufficient controls and other oversight mechanisms to protect the interests of fund shareholders."

¹² See SEC Rule S7-12-04, Disclosure Regarding Portfolio Managers of Registered Management Investment Companies,

disclosure requirement is part of a series of regulations introduced by the SEC in 2004 to improve the transparency of the mutual fund industry and “help investors to better understand a portfolio manager’s incentives in managing a fund”.

Regarding the disclosure requirement, portfolio manager “Compensation” includes, without limitation, salary, bonus, deferred compensation, retirement plans and whether the compensation is cash or non-cash. For each type of compensation, a fund is required to describe with specificity the criteria on which that type of compensation is based. For example, whether the compensation is fixed, whether (and, if so, how) the compensation is based on the fund’s pre- or after-tax performance over a certain period, and whether (and, if so, how) the compensation is based on the value of assets held in the fund’s portfolio. In the case of performance-based bonus, a fund is required to identify any benchmark used to measure performance and state the length of the period over which performance is measured.

It is important to note that mutual funds are required to disclose only the criteria upon which the compensation is based on, not the dollar value of compensation received by the portfolio managers. We illustrate the description of portfolio manager compensation using the following example taken from the SAI of Vanguard Managed Payout Funds:

“As of December 31, 2009, a portfolio manager’s compensation generally consists of base salary, bonus, and payments under Vanguard’s long-term incentive compensation program..... A portfolio manager’s base salary is generally a fixed amount that may change as a result of an annual review, upon assumption of new duties, or when a market adjustment of the position occurs. A portfolio manager’s bonus is determined by a number of factors. One factor is gross, pre-tax performance of the fund relative to expectations for how the fund should have performed, given the fund’s investment objective, policies, strategies, and limitations, and the market environment during the measurement period. This performance factor is not based on the value of assets held in the fund’s portfolio. For the Managed Payout Funds, the performance factor depends on how closely the portfolio manager outperforms these expectations and maintains the risk parameters of the fund over

a three-year period. Under the long-term incentive compensation program, all full-time employees receive a payment from Vanguard's long-term incentive compensation plan based on their years of service, job level and, if applicable, management responsibilities.”

The Appendix illustrates more details about the compensation of portfolio managers and how we construct our variables based on the information of SAI for our sample funds.

II. Hypotheses Development

The use of explicit performance-based incentives in the compensation contracts may be determined by various factors. We broadly classify them into two categories. First, we consider the use of explicit performance-based incentives in inducing efficient managerial behavior. Second, we explore the possibility that implicit incentives such as career concerns serve as alternative effort inducing mechanisms and therefore reduce the need for explicit performance-based incentives. Arguably, the use of explicit performance-based incentives should be concentrated in those funds where the provision of managerial incentives is particularly important and be less prevalent in scenarios where an effective implicit incentive mechanism is in place. We now discuss these factors in more detail.

A. Provision of managerial incentives

Delegated portfolio management relationship falls naturally into the principal-agent paradigm. Under such paradigm, it has long been recognized that moral hazard problem may arise when the principal (investment advisor) does not perfectly observe the actions of the agent (portfolio managers). A natural remedy to this problem is complete monitoring. However, full observation of actions is generally too costly if not impossible. In such situations, theory suggests that it may be optimal for firm to reward their employees through explicit contracts that relate pay to observed measures of performance, namely explicit performance-based incentives (e.g., Harris and Raviv

(1979), Holmstrom (1979), Grossman and Hart (1983)). Arguably, investment advisors that are larger and have more complex business models are unable to monitor managerial actions as effectively as those that are smaller and have less complex business models.¹³ Thus, we expect the monitoring cost increases with the size and the complexity of the advisor. This forms the basis of our first hypothesis:

***Hypothesis H1:** Investment advisors that are larger and have more complex business models are more likely to use explicit performance-based incentives than their counterparts.*

Performance-based incentive, however, comes at a cost as it can distort the efficiency of the risk sharing between the principal and the agent and imposes risk on the agent. Theory predicts a negative relation between risk and incentives (e.g., Holmstrom (1979), Garen (1994)). Given the trade-off between risk and incentives, we should observe less performance-based incentives in the compensation contract when the fund returns are more volatile. We formalize our second hypothesis as follows:

***Hypothesis H2:** The probability of observing performance-based incentive contracts decreases with the volatility of the fund performance.*

B. Interactions with alternative mechanisms

Several alternative mechanisms, though implicit, can serve well to mitigate the moral hazard problem. When an effective implicit incentive is in place, the need for explicit performance-based incentives falls. One important and well-studied mechanism that alleviates agency problems is managerial ownership. In their seminal paper, Jensen and Meckling (1976) argue that “as the manager’s ownership claim falls, his incentive to devote significant effort to creative activities such as searching out new profitable ventures falls.” If a portfolio manager is the stakeholder (e.g., a control owner) of the investment advisor, agency conflicts due to the separation of ownership and

¹³ Garen (1985), Bishop (1987), Holmstrom (1989), Brown and Medoff (1989), Rasmusen and Zenger (1990), and Schmidt and Zimmermann (1991) argue that there is the positive relation between monitoring costs and firm size.

control is largely reduced. Thus, we expect that the status of a portfolio manager being a stakeholder leads to a lower incidence of performance-based incentives in their compensation contracts. More formally, our third hypothesis is as follows:

***Hypothesis H3:** For portfolio managers who are the stakeholders (e.g., control owners) of the investment advisors, we expect a lower incidence of performance-based incentives in their compensation contract.*

Another implicit incentive that has been shown to effectively induce managerial efforts is the discipline from the labor market, including career concerns (Fama (1980), Gibbons and Murphy (1992), Holmstrom (1999), Prendergast (1999)). Rather than one-time relationship, portfolio managers remain with their employers, the investment advisor, for a long period of time. Given the dynamic feature of the labor contracts, portfolio managers can exert effort even without an explicit pay-for-performance contract in place because good performance may improve future contracts. Thus, we expect that portfolio manager, who are more disciplined by labor market, receive less explicit performance-based incentives in their compensation contracts. This argument serves as the rationale for the following hypotheses.

First, Gibbons and Murphy (1992) claim that the use of performance-based incentives increases as managers accumulate tenure. Moreover, Chevalier and Ellison (1999) find that termination is more performance-sensitive for younger managers. We hypothesize that portfolio managers who have less industry experience face greater career concerns, and thus are less likely to receive performance-based incentives.

Second, career concerns, arguably, are more compelling in the case of solo-managed funds compared to team-managed funds since team members have less of their reputation at stake than would a single-manager (Almazan et al (2004)). Moreover, free-rider problem may emerge among portfolio management teams, which distorts the provision of effort. Holmstrom (1982) claims that

performance-based contract may restore efficiency in the managers' effort decision. Thus, we posit that investment advisors are more likely to provide performance-based contracts to portfolio management teams, relative to single-managers.

Lastly, we consider how the threat of manager turnover affects the compensation contract design. Recent evidence by Chen, Hong and Kubik (2012) and Kostovetsky and Warner (2011) suggest that portfolio managers of outsourced funds are subject to higher threat of dismissal for poor performance than the ones of in-house managed funds. This threat of dismissal can, arguably, serve as an alternative incentive mechanism, which makes performance-based contracts less effective for outsourced funds. We summarize the above arguments as follows:

***Hypothesis H4:** Performance-based incentives are more prevalent present when (i) portfolio managers have more industry experience, (ii) the funds are managed by a team of managers, and (iii) the funds are not outsourced to an external sub-advisory firm.*

III. Data, Variable Description, and Sample Overview

A. Data

We construct our sample from several data sources. Our first data source is the Morningstar Direct Mutual Fund database. This database covers the U.S. open-end mutual funds. It covers information about fund names, manager names, manager industry experience, assets under management, inception dates, expense ratios, turnover ratios, investment objectives, fund tickers, and other fund characteristics. For the purpose of our study, we include all the U.S. open-end mutual funds as of the year-end of 2009.¹⁴ In the Morningstar Direct Mutual Fund database, multiple share classes are listed as separately. To avoid multiple counting, we aggregate the share-class level to fund level data. Specifically, we calculate total assets under management as the sum of assets across

¹⁴ Closed-end funds and money market funds are not included in our initial sample for which we hand-collect the portfolio manager compensation data.

all share classes. Our initial sample consists of 5,688 unique funds managed by 794 investment advisors.

Information about compensation structures of portfolio manager is hand-collected from mutual funds' Statement of Additional Information (SAI) in the SEC Edgar Database. For each fund in our initial sample, we collect its SAI for 2009 whenever available. Then we retrieve the information on the structure of, and the method used to determine the compensation of the portfolio managers of the fund. Among the initial sample of 5,688 funds, we are able to obtain information on portfolio manager compensation for 5,579 funds.

We obtain the investment advisor characteristics from Form ADV in the SEC IAPD Database. Form ADV is the uniform form used by investment advisors to register with SEC. Advisors have to file Form ADV: (i) if assets under management are above \$25million, and (ii) if they advise registered companies under the Investment Company Act of 1940 (even if the total assets they manage are under \$25 million). This form specifies its business practices, assets under management, clientele, number of employees, financial industry affiliations, and other advisor-level characteristics. To match the investment advisors of mutual funds in our initial sample to the sample of advisors filed Form ADV in 2009, we use fund ticker to obtain the SEC File Number, a unique identifier SEC assigned to each investment advisor in the Form ADV.¹⁵ Our final sample consists of 4,138 open-end mutual funds. It covers 4,010 unique portfolio managers working for 669 investment advisors.

B. Variable Constructions

B.1. Compensation Structures

As discussed earlier, mutual funds are not required to disclose the actual amount of compensation received by the portfolio managers. Instead, they need to disclose the structure of, and

¹⁵ In rare cases, a fund is managed by several managers from different advisors or subadvisors. Generally, it is not possible to distinguish the proportion of assets under management for each (sub) advisor. We do not include these funds in our sample.

the method used to determine the compensation of the portfolio manager. To capture different aspects of compensation structure of portfolio managers, we construct the following measures.¹⁶

Fixed Salary: Portfolio manager compensation can be a fixed salary or a fixed salary plus a variable component, commonly referred to as bonus. To differentiate those two types of compensation structure, we use an indicator variable *Fixed Salary* that equals to one if the portfolio manager's compensation is fixed and zero if the compensation has both fixed and variable components.

Performance Incentive: For those portfolio managers that have both a fixed salary and a variable bonus, the SEC requires the fund to disclose whether the bonus is based on the fund's pre- or after-tax performance over a certain period. We use the indicator variable *Performance Incentive* to identify whether portfolio managers' compensation is explicitly tied to the investment performance of the fund. The variable *Performance Incentive* equals to one if the bonus is explicitly based on the fund performance and zero otherwise.

Evaluation Period: In the case of performance-based bonus, a fund is required to state the length of the period over which performance is measured. In many cases, the funds report multiple evaluation windows. For example, for Vanguard Dividend Growth Fund, the portfolio manager's investment performance is evaluated "over one- and three-year periods, with an emphasis on three-year results." We construct four variables related to the evaluation periods: *Evaluation Period Mean* which takes the simple average of all the evaluation windows; *Evaluation Period Most* which only takes the evaluation window whose importance has been emphasized in the compensation description; *Evaluation Period Min* which takes the shortest evaluation window and *Evaluation Period Max* which takes the longest evaluation window. Regarding the example of Vanguard Dividend Growth Fund, *Evaluation Period Mean* is two-year; *Evaluation Period Most* is three-year; *Evaluation Period*

¹⁶ Except for *Fixed Salary*, the variables describing the manager compensation structure are not mutually exclusive. This means that performance-based and AUM based incentives may coexist for the same manager.

Min is one-year; *Evaluation Period Max* is three-year.

AUM Incentive and Advisor Profit Incentive: For those portfolio managers that have both a fixed salary and a variable bonus, the SEC also requires them to disclose whether the bonus is based on the value of assets held in the fund's portfolio (AUM) and/or the advisor's profits. We construct indicator variables *AUM Incentive* (*Advisor Profit Incentive*) that equals to one if managerial compensation is explicitly tied to the portfolio's assets (adviser profits) and zero otherwise.

Deferred Compensation: For the purpose of retention and tax benefits, investment advisors can impose some vesting period before a bonus is actually paid to the portfolio managers. Sometimes, investment advisors add a hurdle condition that must be met in the future before the payment becomes effective. A dummy variable, *Deferred Compensation*, is set to one if we observe the existence of a deferred compensation plan in the compensation description and zero otherwise.

B.2. Advisor Characteristics

Advisor Size: To proxy for the advisor size, we use two variables obtained from Form ADV. The first variable *Advisor Size* measures the total assets under management of the investment advisor.¹⁷ The second variable *#Employees* is the total number of employees that perform investment advisory function in the investment advisor firm.

Clientele Heterogeneity: While some investment advisors may specialize in serving one single type of clients, mutual funds, for instance; others may have a diversified clientele with different types of clients. In the Form ADV, the investment advisors need to specify their clientele types into following ten categories: (i) individuals, (ii) high net worth individuals, (iii) banks, (iv) investment companies (including mutual funds), (v) pension plans, (vi) other pooled investment

¹⁷ The SEC states that the assets under management comprise those securities portfolios for which the advisory firm provides "continuous and regular supervisory or management services." If the advisory firm manages a portion of the client's assets, only the proportion effectively managed by the advisory should be included. An account is a securities portfolio if at least 50% of the total value of the account consists of securities.

vehicles (like hedge funds), (vii) charitable organizations, (viii) corporations, (ix) government entities, and (x) others (including, for example, family officers, private foundations, universities and labor unions). To capture the heterogeneity in the advisor's clientele composition, we construct a Herfindahl-Hirschman Index (HHI) type of variable *Clientele Heterogeneity*. It is defined as the sum of squares of the percentage of clients the advisor has in each particular type based on the number clients.¹⁸ *Clientele Heterogeneity* is equal to one when there is only a single clientele type and it is bounded below by zero. The variable decreases as the number of client types increases and the proportion are more evenly distributed across types.

#Affiliations: The SEC requires the investment advisors, in the Form ADV, to disclose the number of affiliations or activities in the financial industry in which any person, an individual or a company, "under common control" with the advisor may be involved.¹⁹ There are eleven affiliations enumerated in Form ADV: (i) broker-dealer or dealer for municipal or government securities, (ii) investment company (including mutual funds), (iii) other investment advisor, (iv) futures or commodities trader, (v) banking or thrift institution, (vi) accountant or accounting firm, (vii) lawyer or law firm, (viii) insurance company, (ix) pension consultant, (x) real estate broker or dealer, and (xi) sponsor or syndicator of limited partnerships. *#Affiliations* is the total number of financial affiliations of the advisor.

As control variables, in most of our empirical analysis, we include variables *Advisor Age* and *Organization Types*. The *Advisor Age* is calculated based on the first date that investment advisors register with the SEC, which is referred to as Effective Date in Form ADV. In form ADV, investment

¹⁸ A More accurate measure of clientele heterogeneity can be defined as the sum of squares of the percentage of assets under management in each clientele type. The SEC requires advisors to report this information in their ADV filings starting November 2011. Unfortunately, this information is not available for 2009.

¹⁹ According to the SEC, "control means the power, directly or indirectly, to direct the management or policies of a person, whether through ownership of securities, by contract, or otherwise." This includes: the advisor's officers, partners, or directors exercising executive responsibility; any person who, directly or indirectly, has the right to vote 25 percent or more of a class of the corporation's voting securities; any person who has the right to receive after dissolution of a partnership or limited liability company, or has contributed 25 percent or more of the capital; a trustee or a management agent of a trust.

advisors also report their *Organization Types* into the following categories: (i) corporation, (ii) sole proprietorship, (iii) limited liability partnership (LLP), (iv) partnership, (v) limited liability company (LLC), and (vi) others. We create dummies variables for each of the organization forms and include them in our empirical analysis to control for potential fixed effects.

B.3. Manager Characteristics

Stakeholder: This is an indicator variable that equals to one if the manager is an important stakeholder of the investment advisor and zero otherwise. We obtain this information from the manager description in SAI. We identify the manager as a *stakeholder* when she is the founder, owner, principal partner, or blockholder of the investment advisor.

Industry Experience: The information on managerial industry experience is obtained from Morningstar Direct Mutual Fund database. We consider the date that a manager first appears in the database as an estimate of the entry date of that manager in mutual fund industry. Industry experience thus measures how long (in months) has a manager appears in Morningstar Direct database. For a fund that has multiple managers, we compute the *Industry Experience* as the average of all the managers.

Team Dummy: This is an indicator variable that set to one if the fund is managed by a team of portfolio managers and zero if the fund is managed by a single manager. Results are qualitatively the same when we replace the dummy variable with the actual number of portfolio managers in the fund.

B.4. Fund Characteristics

Total Risk: We construct the fund's *Total Risk* as the total volatility of lagged fund net returns in the year of 2008. The fund net return data are obtained from Morningstar Direct Mutual Fund database.

Subadvised Dummy: Following Chen, Hong, and Kubik (2011), a fund is categorized as being externally subadvised or outsourced if the investment advisor is not affiliated with the mutual fund family.²⁰ We begin categorizing a fund as being subadvised if the family name does not match the advisor name, both obtained from Morningstar Direct Mutual Fund database. Because fund families and investment advisors with different names may still be affiliated, we further use the information on the SAI of a fund to see whether any affiliation exist between the two. Therefore, the variable *Subadvised Dummy* is set to one only if there is no affiliation between the mutual fund family and the investment advisor; otherwise we will set it to zero.

Control Variables: *Fund Size* is the sum of assets under management across all share classes of a fund. *Fund Age* is the age of the oldest share class in the fund. Following Sirri and Tufano (1998), *Net Flows* is defined as the average monthly net growth in fund assets beyond reinvested dividends. It reflects the percentage growth of a fund in excess of the growth that would have occurred had no new inflow and had all dividends been reinvested. *Expense* and *Turnover* is calculated as the average expense and turnover ratios across all the share classes of a fund. *Net Return* is calculated as the cumulative fund net returns over a calendar year. All the above control variables are lagged, that is measured as of the year of 2008.

Our results are qualitatively similar if we control for fund styles. Our sample consists of funds with six investment styles, as obtained from Morningstar Direct database: balanced (12.4% of funds), bond (25.2%), equity (38.8%), global (16.4%), and other (7%).²¹

C. Sample Overview

Our final sample consists of 4,138 unique funds with 669 unique investment advisors. It has

²⁰ The SEC defines affiliated as having either ownership of or some controlling interest in the other party.

²¹ Our sample includes 197 index funds, mostly equity funds. Our results are robust if we include a dummy for index funds in our tests.

10,057 manager-fund-adviser observations. On average, there are 2.5 portfolio managers per fund in our sample (the median is 2). 66% of our sample funds are team-managed.

The compensation structures that we observe in the data vary within an investment advisor or even within a fund. We find 77, or 11.5%, out of 669 advisors (with 975 funds) where there is at least one variation within the advisor in the compensation features that we examine. However, we do not observe many variations in the compensation structures within a team-managed fund, except for a few funds.²² That is, there are much more within-advisor variations than within-fund variations in portfolio manager compensation structure.²³ Given this data structure, in our main test specifications, our analyses are done at the fund level.²⁴

Panel A of Table I reports the summary statistics for the main variables we use to describe the compensation contract of the portfolio managers. We find that overall, the compensation structure is subjective and discretionary rather than objective and formula based. This is consistent with the survey evidence documented by Farnsworth and Taylor (2006). Fixed salary is rarely observed in our sample. Only in 1.6% of the sample funds, the investment advisors pay a fixed amount to portfolio managers. In the majority of cases, portfolio manager compensation consists of both a fixed base salary and a variable component, namely, a bonus. The weights of the base salary and the bonus in the total compensation, however, are generally not publicly available since the SEC does not require this information to be disclosed. Based on the 1,087 funds that release some information on the ratio of the bonus to the salary, we find that the bonus can be as large as three times of the base salary.

²² We find 92 team-managed funds, managed by 138 different portfolio managers, where at least one manager has a different compensation structure. In the majority cases (73 funds or about 80%), the variation corresponds to the cases where managers are founders, owners, partners or block holders of the investment advisor.

²³ Note that we cannot observe the quantitative variations across managers or across funds as this information is not reported in the fund's SAI. For instance, if there is a performance bonus, the dollar value of the bonus, as a function of performance, may vary from manager to manager.

²⁴ Our results are not sensitive to the procedure we use. We also repeat our tests at the advisor-fund-manager level and find the qualitatively similar results. Moreover, our results are robust if we exclude from our analyses the funds where there are within-fund variations.

For those portfolio managers that have both a fixed salary and a variable bonus, the SEC requires them to disclose whether the bonus is based on the fund's pre- or after-tax performance over a certain period and whether the bonus is based on the value of assets held in the fund's portfolio. We find that in about three quarters of our sample funds, portfolio manager compensation is tied to the investment performance of the fund. The high frequency of performance incentives in portfolio manager compensation contract is in sharp contrast to the low frequency of performance-based incentives in the advisory contract between fund shareholders and the investment advisor. As for the length of the period over which performance is measured, we observe that the average evaluation window is about three years (rolling window). The variation in the evaluating periods is significant, with the longest evaluation window being 10-year and the shortest being one-quarter.

Contrary to the pattern in advisory contracts, in majority cases portfolio manager compensation is not explicitly tied to the assets under management of a fund. Only in 21.3% of the funds, it is explicitly mentioned that the investment advisor considers the assets under management of the fund when deciding portfolio manager compensation. This is a surprising finding given the fact that the asset-based incentive is widely used in the advisory contract between fund shareholders and the investment advisor (e.g., Deli (2002)). Moreover, we find that in 41.9% of our sample funds, portfolio manager compensation is explicitly stated to be linked to the profitability of the investment advisor. Arguably, for those portfolio managers, their compensation is indirectly tied to the assets under management of the fund since the profitability of the advisor depends on the advisory fee rate and the assets under management.

As we mentioned earlier, performance-based, AUM based, and advisor profit based incentives are not mutually exclusive when compensating a portfolio manager. We explore the distribution of compensation structures for these three different types of bonuses: a bonus based on the investment performance, a bonus based on assets under management, and a bonus based on the

advisor's profit. One third, or 33%, of sample funds offers their managers a bonus based only based on the investment performance. Another third of the sample funds offers a bonus based on investment performance and either AUM (9%) or advisor's profit (24%). In the other 9% of the sample funds, portfolio managers receive all the three types of bonus simultaneously. These three scenarios cover all funds with portfolio managers compensated with bonuses based on the investment performance, which account for 75% of our sample. These results speak of the empirical relevance of performance-based bonuses, both in isolation and in combination with other incentives.²⁵

About one quarter of portfolio managers received deferred compensation. The vesting period can range from one-year to five-year.²⁶ In some cases, investment advisors add a hurdle condition that must be met in the future before the payment becomes effective. In the rest of cases, advisors simply defer manager's compensation to a future date. Most investment advisors believe that deferred compensation plans create incentives to retain key talent. Panel A of Table II reports the summary statistics on investment advisor, portfolio manager and fund characteristics. A typical (or median) investment advisor has \$40,618 million assets under management and 150 employees who perform investment advisory functions. The average clientele heterogeneity, a HHI style measure, is 0.33, suggesting that investment advisors typically concentrate in a single type of client, which is consistent with the evidence in Chen, Hong, and Kubik (2011). Investment advisors have, on average, 5 financial industry affiliations. The average fund is 278 months (23-year) old. The majority of our sample investment advisors are corporations (51%) and Limited Liability Companies (33%), followed by Partnerships (6%) and others.

About 15% of portfolio managers in our sample are stakeholders of the investment advisor.

²⁵ Among the funds with no performance incentive, 2% of the sample funds use a bonus based on AUM, 7% of funds include only a bonus based on the advisor's profit and 1% mention both a bonus based on AUM and a bonus based on the advisor's profit. Note that the figures on bonuses based on the advisor's profit may be underestimated because their disclosure is not required by the SEC rule.

²⁶ We do not observe the vesting period for all deferred compensation plans as the SEC does not require mutual fund to disclosure.

The average managerial industry experience is 117 months (about 10 years). About 66% of the funds in our sample are team-managed. Similar to the findings in Chen, Hong, and Kubik (2011), about 21% sample funds are managed by an unaffiliated subadvisor. A typical fund in our sample has \$673 million assets under management and is 151 months (about 13 years) old.

IV. Cross-Sectional Determinants of Portfolio Manager Compensation

A. Empirical Methodology

In our empirical tests, we employ the logistic model to investigate the cross-sectional determinants of the compensation structure of portfolio managers. The model specification is as follows:

$$y_{i,j}^* = \beta AdvisorChar_j + \gamma MgrChar_{i,j} + \lambda FundChar_{i,j} + \alpha_{org} + \varepsilon_{i,j}$$

$$y_{i,j} = 1 [y_{i,j}^* > 0] \quad (3)$$

where i indexes mutual funds; j indexes investment advisors. $y_{i,j}$ is a dummy variable equal to one if the portfolio managers that manage fund i have certain features (i.e. performance-based incentives) in their compensation from advisor j . $AdvisorChar_j$ is a vector of advisor characteristics, including the total assets under management, the number of employees who perform investment advisory functions, the advisor age, clientele heterogeneity, and the number of affiliations in the financial industry. $MgrChar_{i,j}$ is a vector of portfolio manager characteristics at fund level, including the average manager tenure, team management, and a dummy variable for portfolio manager to be the stakeholder (owner, founder, blockholder, or partner) of the advisor. $FundChar_{i,j}$ is a vector of fund characteristics, including a dummy for funds managed by unaffiliated subadvisors, fund net return, fund risk, fund size, age, expense ratio, turnover ratio, and fund flow. α_{org} are dummy variables for the organization types of the advisors (e.g., partnership, limited liability company, corporation etc.).

Since the compensation structures of funds from the same investment advisor tend to be correlated, we adjust standard errors accounting for heteroskedasticity and clustering at the advisor level.

In addition to the above specification, we further employ the following OLS specification to examine the cross-sectional determinants of the evaluation period in compensation contracts, conditional on performance-based incentives:

$$EvPeriod_{i,j} = \beta AdvisorChar_j + \gamma MgrChar_{i,j} + \lambda FundChar_{i,j} + \alpha_{org} + \varepsilon_{i,j} \quad (4)$$

where i indexes mutual funds; j indexes investment advisors. $EvPeriod_{i,j}$ is the performance evaluation period in the compensation contract by advisor j to portfolio managers that manage fund i . We include the same set of independent variables as in Model (3) on advisor, manager, and fund characteristics. Again, we adjust standard errors accounting for heteroskedasticity and clustering at the advisor level.

B. Performance-based incentives

In this section, we examine the cross-sectional determinants of fund performance-based incentive in the portfolio manager compensation provided by the investment advisor.

We first perform a univariate comparison to examine the differences in characteristics of advisor, portfolio managers, and funds associated to performance-based contract. Panel A of Table III reports the summary statistics of the variables at fund level separately for performance-based and non performance-based contracts. The results show several patterns consistent with an optimal contracting equilibrium as we hypothesized. First, investment advisors with large assets under management and more advisory employee tend to use performance-based incentive more frequently. Second, investment advisors with more client heterogeneity and more affiliations in the financial industry are more likely to use performance-based incentive. Third, portfolio managers of funds with

lower risk tend to receive more performance-based incentives. Fourth, portfolio managers who are the stakeholder of the advisor in the fund get less performance-based incentives. Lastly, portfolio managers of externally subadvised funds are less likely to get less performance-based incentives. The differences in the two subsamples along the dimensions mentioned above are all significant at the 1% level, after accounting heteroskedasticity and clustering at the advisor level.

Next, we investigate the cross-sectional determinants of performance-based incentives by estimating Logistic Model (3). The dependent variable is a dummy variable equal to one if there is incentive based on fund performance in the compensation contract of portfolio managers. The unconditional mean of performance-based incentives in the sample funds is 75.4%. Table III reports the logistic regression estimations and the marginal effects of the independent variables (at the sample averages).²⁷ Generally, our results show that investment advisors optimally provide explicit performance-based incentives to portfolio managers in their compensation contract.

[Insert Table III here]

We next discuss the results related to each of our hypotheses as follows. First, we find that larger advisors use performance-based incentives more frequently. Our evidence is consistent with Hypothesis H1 that large advisors face higher direct monitoring costs and thus use more explicit performance-based incentives. As shown in column (3a), the coefficient on *Log(Advisor Size)* is 0.340 (t-stat.= 3.37), significant at the 1% level, and the one on *Log(#Employees)* is 0.241 (t-stat.= 1.73), significant at the 10% level. These effects are also economically meaningful. As shown in column (3b), one-standard deviation increases in *Log(Advisor Size)* and *Log(#Employees)* are associated with increases in the probability of performance-based incentives by 11.2% (=2.35*4.75%) and 4.8% (=1.43*3.37%) respectively.²⁸

²⁷ Our results are qualitatively similar if we exclude the 68 funds with fixed salary only contract for their portfolio managers.

²⁸ The economic effect of a variable of interest calculated as the std. of the variable times the corresponding marginal effect. The economic significance of other variables in the later part is calculated similarly.

Second, we find some evidence that the use of performance-based incentives increases in advisor complexity as measured by client heterogeneity (*Clientele Dispersion*) and the number of financial industry affiliations (*#Affiliations*). As shown in column (2a), the coefficient on *Clientele Dispersion* is -1.027 (t-stat.=-1.98), significant at the 5% level, and the coefficient on *#Affiliations* is 0.276 (t-stat.= 4.23), significant at the 1% level.²⁹ In terms of economic significance, based on results in column (2b), a one-standard deviation increase in *#Affiliations* is associated with an increase in probability of performance-based incentives by 10.2%, while a one-standard deviation drop in *Clientele Dispersion* is associated with an increase in the probability by 4.0%. These results provide further support to Hypothesis H1 that when the direct monitoring of portfolio managers' actions is more costly, it is more likely to observe the use of performance-based contracts.

Third, we find that the fund's lagged volatility is negatively related to the use of performance-based incentives. As shown in column (3a), the coefficient on *Total Risk* is -0.104 (t-stat.= 2.78), significant at the 1% level. This risk and incentive trade-off is also economically significant. As shown in column (3b), a one-standard deviation increase in *Total Risk* is associated with decreases in the probability of performance-based incentives by 4.1% (=2.8*-1.45%). In untabulated results, when we look at the use of performance based contracts among different fund styles, we find results that are also consistent the prediction of risk and incentive trade-off: relative to bond funds, equity and global funds use less performance-based contracts. All together, our evidence suggests that there is a negative relation between fund return volatility and the use of performance-based contracts. This is consistent the theory prediction that there is negative relation between risk and incentives postulated in Hypothesis H2.

Fourth, we find that portfolio managers who are the stakeholders of the advisors receive less performance-based incentives, which supports Hypothesis H3 that a lower level of separation

²⁹ In column (3a), the results are qualitatively similar, but weaker, when we include both the advisor size and age in the regression.

between ownership and control reduces the need for explicit performance-based incentives. The coefficient on *Stakeholder* is -1.501 (t-stat.=-3.94) in column (3a), significant at the 1% level. The economic magnitude of *Stakeholder*'s effect is also significant: the probability of performance-based incentives will decrease by 28.1% if portfolio managers change to be the stakeholder of the advisors.

Fifth, we do not find a significant effect of managerial industry experience on the use of explicit performance-based incentives. As shown in the univariate comparison in Panel A of Table III, portfolio managers with less industry experience are more likely to get performance-based incentives, but the difference is not significant at the conventional level. Moreover, the coefficients in the multivariate regressions are negative but insignificant in all the three specifications in Panel B of Table III. These results do not provide support to Hypothesis H4 on the interaction effect of career concern and performance-based incentives.³⁰

Sixth, our results show that portfolio management teams tend to receive performance-based incentives more frequently. The coefficient on *Team Dummy* is 0.414 (t-stat.=2.14), significant at the 5% level, as shown in column (3a). In terms of economic effects, the probability of performance-based incentives will increase by 6.0 percentage points for a switch from a single-manager to a portfolio management team. This result is consistent with Hypothesis H4: portfolio management teams are less disciplined by career concerns and/or more affected by free-rider problem, compared to single manager; thus they need more explicit performance-based incentives.

Lastly, we find that outsourced funds are associated with less explicit performance-based incentives. The coefficient on *Subadvised Dummy* is -0.979 (t-stat.=-3.26), significant at the 1% level, as shown in column (3a). In terms of economic significance, the probability of performance-based incentives will drop by 16.3% for a switch from an in-house managed to an out-sourced fund.

³⁰ In conversation with professional portfolio managers, it was mentioned that more senior managers, although responsible for everyday portfolio decisions, do effectively take a more organizational role in the fund. This might explain why explicit performance-based incentives are less relevant for senior managers.

Our evidence seems to be consistent with the idea that the threat of dismissal of advisor/manager for out-sourced funds can serve as an alternative incentive mechanism, which reduces the need for the explicit performance-based incentives.

To summarize, we find systematic patterns in advisor, fund, and portfolio manager characteristics associated with the use of explicit performance-based incentives that are mostly consistent with an optimal contracting equilibrium. In particular, explicit performance-based incentives are more prominent in scenarios where direct monitoring by the advisor is more difficult, where explicit performance-based incentives is less costly, and where alternative, implicit incentives are less effective. We provide new evidence in the U.S. asset management industry (i.e., mutual fund industry) consistent with optimal contracting.

C. Evaluation Period of Performance-based incentives

In this section, we further examine the cross-sectional determinants of the evaluation period in portfolio manager compensation contracts, conditional on explicit performance-based incentives. Specifically, we estimate the OLS specification as in Model (4) to investigate whether the evaluation period in the compensation contract varies cross-sectionally as theory suggests. In our sample, evaluation period with the highest weight and average evaluation period of a typical fund are both three years.

Table IV presents the regression results using evaluation period with the highest weight, *Evaluation Period Most*, as the dependent variable. Our results suggest that the evaluation period in the compensation contract tend to increase in monitoring costs. First, large advisors tend to use longer evaluation period in portfolio manager compensation contract. The coefficients on $\text{Log}(\text{Advisor Size})$ are 0.181 (t-stat.=1.99), significant at the 5% level, as shown in column (3). The effect of advisor size on evaluation period is also economically significant. Based on the results in

column (3), a one-standard deviation increase in $\text{Log}(\text{Advisor Size})$ is associated an increase in *Evaluation Period Most* by 5.1 months or 0.30 standard deviation. Results are qualitatively similar if we use average evaluation period, *Evaluation Period Mean*, as the dependent variable (untabulated).

[Insert Table IV here]

Second, we find that portfolio managers who are stakeholders of the advisors are associated with shorter evaluation period, which is consistent with Hypothesis H3 that less separation of ownership and control requires less performance-based incentives. The coefficients on *Stakeholder* are negative and significant at the 5% level in all three columns of Table IV. The effect of *Stakeholder* on evaluation period is also economically large. For instance, based result in columns (3), a change from non-stakeholders to stakeholders of the investment advisor is associated with a drop in evaluation period with the highest weight by 8.6 months or 0.58 standard deviation.

Third, we also find that portfolio management teams tend to receive longer performance evaluation period. As shown in column (3) of Table IV, the coefficient on *Team Dummy* is 0.358 (t-stat. =1.76), significant at the 10% level. In terms of economic effects, for a switch from a single-manager to a portfolio management team, the evaluation period will increase by 4.2 months or 0.29 standard deviation. This evidence provides further support to Hypothesis H4 that portfolio management teams are less disciplined by career concerns and/or more affected by free-rider problem; thus they require longer performance evaluation periods if receiving explicit performance-based incentives.

Overall, we find that large advisors, portfolio managers that are non-stakeholders of the advisors and portfolio management teams are associated with longer performance evaluation period conditional on the use of explicit performance-based incentives. These empirical patterns provide further support to our optimal contracting hypotheses in Section II, specifically H1, H3, and H4.

D. Fixed Salary Only Compensation

Out of 4,112 funds in our sample, we observe portfolio managers of 68 funds, or 1.6%, have a fixed salary compensation contract. In this section, we investigate the cross-sectional determinants of this type of compensation contract. We estimated the logistic regression Model (3) with the dummy for fixed salary compensation contract as the dependent variable.

Table V reports the estimation results. First, we find that advisors with lower number of employees performing investment advisory functions tend to use more fixed salary only compensation contracts. The coefficient on $\text{Log}(\#Employees)$ in column (3a) is -0.525 (t-stat.=-2.21), significant at the 5% level. In terms of economic magnitude, as shown in column (3b), a one-standard deviation decrease in $\text{Log}(\#Employees)$ is associated with an increase in the probability of fixed salary only contract by 0.26%, which is about one sixth of the unconditional sample mean 1.6%. This result is supportive to our optimal contracting hypothesis H1 that large advisors face higher direct monitoring costs and thus use less fixed salary only compensation contracts.

[Insert Table V here]

Second, we find some evidence that advisors with more concentrated clientele and lower number of financial industry affiliations and activities use fixed salary compensation contract more frequently. That is, the use of fix salary compensation contract decreases in client heterogeneity (*Clientele Dispersion*) and the number of financial industry affiliations ($\#Affiliations$). These results provide further support to Hypothesis H1.

V. Concluding Remarks

Mandated by the Investment Company Act of 1940, mutual funds have a distinctive organization structure. A typical mutual fund consists of shareholders and a board of directors, who delegate the portfolio management to an investment advisor through an advisory contract. Portfolio

managers, hired and compensated by the investment advisor, are the ones who actually make the investment decisions for the fund. Thus, it is of great importance to understand the compensation contract between the investment advisor and the portfolio manager, which has been rarely studied in the literature. We hand-collect the information on portfolio manager compensation structures from Statements of Additional Information of over 4,000 mutual funds in the year of 2009. Using this unique dataset, we provide new evidence on the compensation structure of portfolio managers in the U.S. mutual fund industry.

Our paper complements the extant literature on the advisory contracts between fund shareholders and the investment advisor. In particular, the contract between the investment advisor and the portfolio manager is, contrary to the fund-advisor advisory contract, largely unregulated, which makes it a better test-field for portfolio delegation theory and optimal contract theory in general. Our results uncover systematic patterns in the portfolio manager compensation structures that are broadly consistent with optimal contracting theory.

In particular, performance-based incentives are extensively used to compensate portfolio managers, much more than the frequency observed in advisory contracts between the fund shareholders and the investment advisor. Moreover, their design (including, for instance, explicit performance-based incentives and the performance evaluation period) is consistent with the theory. For instance, performance-based incentives align the interests of the principal and the agent, while bearing the cost of distorting the efficiency of the risk sharing between the two. Consistent with this cost-benefit trade-off, we find more explicit performance-based incentives in scenarios where an investment advisor' direct monitoring is more difficult, where performance-based incentives is less costly, and where alternative, implicit incentives are less effective. Our study adds to the debate of unintended consequences of regulation on contracting in the mutual fund industry aimed at protecting investors' welfare.

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Appendix: an example of portfolio management compensation

The SEC (Form NSAR) defines a Family of Investment Companies as “any two or more registered investment companies which share the same investment adviser or principal underwriter and hold themselves out to investors as related companies for purposes of investment and investor services.” Fund families will include funds managed by one or more advisors and, possibly, subadvisors. Let us choose the family of BLACKROCK FUNDS as an example.

The majority of funds in this family are advised by Blackrock Advisors LLC. In some cases, there may be, besides the advisor, one or more subadvisors working for the same fund. These subadvisors may be internal, i.e., under the same control as the advisor. This is the case of Blackrock Capital Management Inc., Blackrock Financial Management Inc., Blackrock International Limited, Blackrock Investment Management LLC, and State Street Research and Management Company. All of them, including the advisor, Blackrock Advisors LLC, are under the control of Blackrock Inc, the parent management company. In other instances, the subadvisor is external to the management company. This is the case of Franklin Advisers Inc., Marsico Capital Management LLC, Massachusetts Financial Services Company, and Van Kampen Asset Management. These are independent or unaffiliated subadvisors. The funds in the Blackrock family that are externally advised by these subadvisors will be identified by a dummy variable “Subadvised Dummy” (See Section III.B.4 for more details).

Let us use the FDP Series of funds as an example to illustrate how we construct our dataset. This series includes four funds:

- MFS Research International FDP Fund
- Marsico Growth FDP Fund
- Van Kampen Value FDP Fund
- Franklin Templeton Total Return FDP Fund

According to the 2009 prospectus for these funds, “BlackRock Advisors, LLC, each Fund’s investment adviser, manages each Fund’s investments and its business operations subject to the oversight of the Board of the Fund. While BlackRock is ultimately responsible for the management of a Fund, it is able to draw upon the trading, research and expertise of its asset management affiliates for portfolio decisions and management with respect to certain portfolio securities. BlackRock is an indirect, wholly owned subsidiary of BlackRock, Inc.” For this management functions, BlackRock receives a percentage of each fund assets under management, which is known as investment advisory fees or management fees.

BlackRock, in turn, “has entered into a sub-advisory agreement with each of the subadvisors of the Funds, under which BlackRock pays each subadvisor for services it provides a fee equal to a percentage of the management fee paid to BlackRock under the Management Agreement.” Both the management agreement and the sub-advisory agreement are subject to the approval of the Board of Directors of each fund.

In the case of the Marsico Fund, for instance, the “day to day management of the Fund’s portfolio, including setting the Fund’s overall investment strategy and overseeing the management of the Fund” falls on two portfolio managers working for Marsico Capital Management LLC, not BlackRock Advisors, LLC: Thomas F. Marsico and A. Douglas Rao.

In our study, the advisor for the Marsico Growth FDP Fund will be Marsico Capital Management LLC because the two portfolio managers who are in charge of the daily management of the fund are employees of Marsico, not Blackrock Advisors, LLC. In the description of the portfolio manager compensation, the fund’s SAI states the following:

“The compensation package for portfolio managers of Marsico is structured as a combination of base salary, and periodic cash bonuses. Bonuses are typically based on a number of factors including Marsico’s overall profitability for the period. Portfolio manager compensation takes into account, among other factors, the overall performance of all accounts for which the

portfolio manager provides investment advisory services. In receiving compensation such as bonuses, portfolio managers do not receive special consideration based on the performance of particular accounts, and do not receive compensation from accounts charging performance-based fees. Exceptional individual efforts are rewarded through salary readjustments and greater participation in the bonus pool. No other special employee incentive arrangements are currently in place or being planned. In addition to salary and bonus, portfolio managers may participate in other Marsico benefits to the same extent and on the same basis as other Marsico employees. Portfolio manager compensation comes solely from Marsico. In addition, Marsico's portfolio managers typically are offered equity interests in Marsico Management Equity, LLC, which indirectly owns Marsico, and may receive distributions on those equity interests.

As a general matter, Marsico does not tie portfolio manager compensation to specific levels of performance relative to fixed benchmarks.”

Based on this description, the compensation of Thomas F. Marsico and A. Douglas Rao working for Marsico Capital Management LLC will include a fixed salary plus bonus (Fixed Salary dummy=0). The bonus depends on the advisor's profit (Advisor Profit Incentive dummy =1); it does not depend on the fund's performance (Performance Incentive dummy=0) or the assets under management (AUM Incentive dummy =0). Since there is a team of two portfolio managers, we code Team Dummy=1.

Table I Summary Statistics of Portfolio Manager Compensation Structures

This table reports the distribution of different compensation structures (in Panel A), summary statistics of evaluation periods (in Panel B), and the correlation matrix of the main variables that we use to describe the portfolio manager compensation contract (in Panel C). Information about portfolio manager compensation structures is hand-collected from fund Statement of Additional Information (SAI) available in the SEC EDGAR database. *Fixed Salary* is an indicator variable that equals to one if the fund pays the portfolio manager only a fixed base salary and zero otherwise. *Performance Incentive* is a dummy variable that set to be one if the bonus is tied to the investment performance of the fund and zero otherwise. *Evaluation Period* is the length of the period over which investment performance is measured for performance-based incentives. When funds report multiple evaluation windows, *Evaluation Period Mean* takes the simple average of all the evaluation windows; *Evaluation Period Most* takes the evaluation window whose important has been explicitly emphasized in the compensation description; *Evaluation Period Min* takes the shortest evaluation window and *Evaluation Period Max* takes the longest evaluation window. *AUM (Assets under Management) Incentive* is an indicator variable that equals to one if portfolio manager's compensation is tied to the portfolio's assets and zero otherwise. *Advisor Profits Incentive* is a dummy variable that set to be one if the portfolio manager's compensation depends on the advisor profits and zero otherwise. *Deferred Compensation* is a dummy variable that set to be one if we observe the existence of a deferred compensation plan in the compensation description and zero otherwise. Our sample consists of 4,138 funds in year of 2009.

Panel A. Summary Statistics of Compensation Structures

	Number	% of Sample
Total	4,138	
Fixed Salary	68	1.6%
Variable Salary	4,070	98.4%
Performance Incentive	3,118	75.4%
AUM Incentive	881	21.3%
Advisor Profit Incentive	1,734	41.9%
Deferred Compensation	1,187	28.7%

Panel B. Summary Statistics of Evaluation Periods

Variables	Obs.	Mean	Median	Std. Dev.	Min	Max
Evaluation Period Mean	2,548	2.71	3.00	1.01	0.25	7.50
Evaluation Period Most	2,548	2.96	3.00	1.24	0.25	7.50
Evaluation Period Min	2,548	4.25	5.00	2.01	0.25	10.00
Evaluation Period Max	2,548	1.29	1.00	0.78	0.25	5.00

Panel C. Correlation Matrix

	Fixed Salary	Performance Incentive	AUM Incentive	Advisor Profit Incentive	Deferred Compensation
Fixed Salary	1.000				
Performance Incentive	-0.2247 (0.00)	1.000			
AUM Incentive	-0.0481 (0.00)	0.0793 (0.00)	1.000		
Advisor Profit Incentive	-0.1052 (0.00)	0.0610 (0.00)	0.0449 (0.00)	1.000	
Deferred Compensation	-0.0772 (0.00)	0.1663 (0.00)	0.1582 (0.00)	-0.0438 (0.00)	1.000

Table II Summary Statistics of Investment Advisor and Portfolio Manager Characteristics

This table reports the summary statistics (in Panel A) and the correlation matrix (in Panel B) of the advisor, portfolio manager, and fund characteristics. *Advisor Size* measures the assets under the investment advisor’s management. *#Employees* is the number of employees that perform investment services. *Clientele Heterogeneity* is defined as the sum of squares of the percentage of clients the advisor has in each particular clientele type. *#Affiliations* is the number of other business activities conducted by the investment advisor. *Advisor Age* is calculated based on the first date that investment advisors register with the SEC. *Stakeholder* is an indicator variable that equals to one if the manager is an important stakeholder of the firm and zero otherwise. *Industry Experience* is constructed as the time length, in months, since a portfolio manager first appears in Morningstar Direct database. For a fund that has multiple managers, we compute the average of all the managers. *Team Dummy* is a dummy variable that equals to one if fund is managed by multiple managers and zero otherwise. *Subadvised Dummy* is a dummy variable that equals to one if the investment advisors are not affiliated with mutual fund families and zero otherwise. *Net Return* is calculated as the cumulative fund net returns over a calendar year. *Total Risk* is the total volatility of lagged monthly net returns of a fund in the year of 2008. *Net Flows* is defined as the net growth in the fund assets beyond reinvested dividends. *Fund Size* is the sum of assets under management across all share classes of a fund. *Fund Age* is the age of the oldest share class in the fund. *Expense* and *Turnover* is calculated as the average expense and turnover ratios across all the share classes. All fund-level characteristics data are obtained from Morningstar Direct Mutual Fund database and are lagged by one year. Our sample consists of 4,138 funds in the year of 2009.

Panel A. Summary Statistics

<i>Variables</i>	<i>Obs.</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Dev.</i>	<i>1st</i>	<i>99th</i>
<u><i>Advisor Characteristics</i></u>						
Advisor Size (Millions)	4,138	122,893	40,618	190,200	18	824,537
#Employees	4,138	125.9	150.0	150.1	3.0	750.0
Clientele Dispersion	4,138	0.333	0.195	0.267	0.124	1.000
#Affiliations	4,138	5.16	5.00	2.53	0.00	10.00
Advisor Age (Months)	4,138	277.8	253.0	166.8	18.0	829.0
<u><i>Manager Characteristics</i></u>						
Stakeholder Dummy	4,138	0.15	0.00	0.36	0.00	1.00
Industry Experience (Months)	4,137	117.2	108.5	61.8	8.7	287.0
Team Dummy	4,126	0.66	1.00	0.47	0.00	1.00
<u><i>Fund Characteristics</i></u>						
Total Risk (%)	4,138	5.3	5.6	2.8	0.4	13.7
Subadvised Dummy	4,138	0.21	0.00	0.40	0.00	1.00
Fund Size (Millions)	4,136	673.4	146.4	1,622.7	0.7	10,438.8
Fund Age (Months)	4,138	151.3	134.0	124.5	3.0	709.0
Expense (%)	4,138	1.16	1.15	0.65	0.00	2.79
Turnover (%)	4,138	100.2	55.5	142.6	2.1	919.0
Net Flow (%)	4,138	1.97	0.11	8.38	-6.40	58.69
Net Return (%)	4,138	28.1	26.6	16.4	-3.7	83.9

Panel B. Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log(Advisor Size) (1)	1.000									
Log(#Employee) (2)	0.763 (0.00)	1.000								
Clientele Dispersion (3)	-0.239 (0.00)	-0.377 (0.00)	1.000							
#Affiliations (4)	0.554 (0.00)	0.498 (0.00)	-0.170 (0.00)	1.000						
Log(Advisor Age) (5)	0.391 (0.00)	0.348 (0.00)	-0.120 (0.00)	0.162 (0.00)	1.000					
Stakeholder (6)	-0.327 (0.00)	-0.276 (0.00)	-0.030 (0.00)	-0.359 (0.00)	-0.088 (0.00)	1.000				
Log(Industry Experience) (7)	0.059 (0.00)	0.026 (0.00)	0.048 (0.00)	-0.064 (0.00)	0.077 (0.00)	0.109 (0.00)	1.000			
Team Management (8)	0.012 (0.44)	0.014 (0.38)	-0.065 (0.00)	0.078 (0.00)	-0.043 (0.01)	0.021 (0.18)	-0.050 (0.00)	1.000		
Total Risk (9)	-0.179 (0.00)	-0.173 (0.00)	0.012 (0.437)	-0.123 (0.00)	-0.059 (0.00)	0.137 (0.00)	-0.052 (0.00)	0.040 (0.011)	1.000	
Subadvised Dummy (10)	-0.126 (0.00)	-0.180 (0.00)	-0.013 (0.39)	-0.104 (0.00)	-0.178 (0.00)	0.125 (0.00)	-0.019 (0.22)	0.055 (0.00)	0.081 (0.00)	1.000

Table III Fund Performance Incentives in Portfolio Manager Compensation

Panel A of this table reports the summary statistics of the sample funds with performance-based incentives in portfolio manager compensation contract and the ones without. The differences in each of the variables for the two subsamples are reported in the last two columns. The standard errors of the two sample t-tests are adjusted for clustering at the advisor level. Panel B of this table provides the results of logistic regressions modeling the likelihood of performance-based incentives in portfolio manager compensation contract. Variables are defined as in Table II. Our sample consists of 4,138 funds in year of 2009. We control for the business organization fixed effects in the logistic regressions. Both the estimated coefficients and marginal effects are reported. The standard errors are clustered at the advisor level. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

Panel A. Univariate Comparison

<i>Variables</i>	Performance Incentive=1				Performance Incentive=0				Diff. in Mean	t-stat.
	Mean	Median	Std. Dev.	Obs.	Mean	Median	Std. Dev.	Obs.		
<i>Advisor Characteristics</i>										
Advisor Size (Millions)	153,889	62,155	206,393	3,118	28,143	4,782	68,125	1,020	125,747***	(4.74)
#Employee	152.2	150.0	159.3	3,118	45.7	30.0	73.0	1,020	106.5***	(6.14)
Clientele Dispersion	0.308	0.195	0.246	3,118	0.408	0.240	0.312	1,020	-0.100***	(-2.67)
#Affiliations	5.72	6.00	2.33	3,118	3.47	3.00	2.39	1,020	2.25***	(7.89)
Advisor Age (Months)	296.2	259.0	172.2	3,118	221.6	210.0	134.0	1,020	74.55***	(3.14)
<i>Manager Characteristics</i>										
Stakeholder Dummy	0.073	0.000	0.260	3,118	0.381	0.000	0.486	1,020	-0.309***	(-6.74)
Industry Experience (Months)	115.8	108.0	59.4	3,117	121.6	114.7	68.6	1,020	-5.84	(-1.11)
Team Dummy	0.673	1.000	0.469	3,114	0.610	1.000	0.488	1,012	0.06	(1.38)
<i>Fund Characteristics</i>										
Total Risk (%)	5.07	5.47	2.79	3,118	5.86	5.97	2.95	1,020	-0.79***	(-3.69)
Subadvised Dummy	0.156	0.000	0.363	3,118	0.359	0.000	0.480	1,020	-0.203***	(-4.15)
Fund Size (Millions)	758.4	187.6	1727.4	3,117	413.6	56.8	1213.5	1,019	344.72**	(2.48)
Fund Age (Months)	157.7	140.0	127.1	3,118	131.7	114.0	113.7	1,020	26.0***	(3.27)
Expense (%)	1.107	1.124	0.510	3,118	1.267	1.262	0.585	1,020	-0.161**	(-2.37)
Turnover (%)	95.45	57.00	126.50	3,118	114.51	51.65	182.48	1,020	-19.06	(-1.02)
Fund Flow (%)	1.71	0.08	7.80	3,118	2.74	0.23	9.91	1,020	-1.03	(-1.12)
Net Return (%)	28.11	26.77	16.00	3,118	27.98	26.14	17.74	1,020	0.12	(0.12)

Panel B. Logistic Regressions

VARIABLES	<i>Performance Incentive</i>		<i>Performance Incentive</i>		<i>Performance Incentive</i>	
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
	<i>Coeff.</i>	<i>ME</i>	<i>Coeff.</i>	<i>ME</i>	<i>Coeff.</i>	<i>ME</i>
<i>Advisor Characteristics</i>						
Log(Advisor Size)	0.402*** (4.20)	5.69%			0.340*** (3.37)	4.75%
Log(#Employee)	0.275** (2.01)	3.89%			0.241* (1.73)	3.37%
Clientele Dispersion			-1.027** (-1.98)	-15.10%	-0.232 (-0.38)	-3.24%
#Affiliations			0.276*** (4.23)	4.04%	0.106 (1.55)	1.48%
Log(Advisor Age)	0.031 (0.13)	0.44%	0.421** (2.10)	6.17%	0.058 (0.24)	0.82%
<i>Manager Characteristics</i>						
Stakeholder Dummy	-1.598*** (-4.38)	-30.60%	-1.697*** (-4.67)	-33.50%	-1.501*** (-3.94)	-28.10%
Log(Industry Experience)	-0.070 (-0.55)	-1.00%	-0.021 (-0.17)	-0.30%	-0.063 (-0.51)	-0.88%
Team Dummy	0.450** (2.39)	6.67%	0.360* (1.91)	5.47%	0.414** (2.14)	6.04%
<i>Fund Characteristics</i>						
Total Risk	-0.106*** (-2.77)	-1.50%	-0.106*** (-2.80)	-1.56%	-0.104*** (-2.78)	-1.45%
Subadvised Dummy	-0.972*** (-3.36)	-16.40%	-0.924*** (-3.18)	-15.90%	-0.979*** (-3.26)	-16.30%
Log (Fund Size)	0.024 (0.45)	0.34%	0.181*** (3.60)	2.65%	0.035 (0.68)	0.49%
Log (Fund Age)	-0.033 (-0.35)	-0.47%	-0.110 (-1.26)	-1.62%	-0.031 (-0.32)	-0.43%
Expense	0.596* (1.94)	8.43%	0.175 (0.66)	2.57%	0.580* (1.92)	8.10%
Turnover	-0.001 (-0.70)	-0.01%	0.000 (0.12)	0.00%	-0.000 (-0.61)	-0.01%
Net Flow	-0.010 (-1.19)	-0.14%	-0.005 (-0.62)	-0.07%	-0.009 (-1.08)	-0.13%
Net Return	0.016*** (3.18)	0.22%	0.017*** (3.52)	0.25%	0.015*** (3.08)	0.22%
Constant	-4.468*** (-2.67)		-2.033 (-1.26)		-4.282** (-2.34)	
Organization Type Dummies	Yes		Yes		Yes	
Observations	4,116		4,121		4,116	
Pseudo R-squared	0.312		0.266		0.317	

Table IV Evaluation Periods

This table reports our OLS estimation results of the evaluation periods as a function of advisor, portfolio manager, and fund-level characteristics. Variables are defined as in Table II. Our sample consists of 2,548 funds in year of 2009. We control for the business organization fixed effects in the logistic regression. The standard errors are clustered at the advisor level. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

VARIABLES	(1)	(2)	(3)
<i><u>Advisor Characteristics</u></i>			
Log(Advisor Size)	0.175** (2.06)		0.181** (1.99)
Log(#Employee)	0.014 (0.13)		-0.011 (-0.10)
Clientele Dispersion		-0.403 (-0.72)	-0.289 (-0.44)
#Affiliations		0.032 (0.75)	-0.010 (-0.21)
Log(Advisor Age)	0.392** (2.04)	0.524*** (2.83)	0.382** (2.06)
<i><u>Manager Characteristics</u></i>			
Stakeholder	-0.672** (-2.45)	-0.727** (-2.31)	-0.721** (-2.36)
Log(Industry Experience)	0.064 (0.85)	0.063 (0.84)	0.065 (0.89)
Team Dummy	0.361* (1.79)	0.298 (1.49)	0.358* (1.76)
<i><u>Fund Characteristics</u></i>			
Total Risk	-0.048* (-1.87)	-0.046* (-1.97)	-0.047* (-1.94)
Subadvised	0.061 (0.43)	0.046 (0.30)	0.046 (0.32)
Log (Fund Size)	0.040 (0.81)	0.096* (1.81)	0.047 (1.20)
Log (Fund Age)	-0.088 (-1.52)	-0.116** (-2.00)	-0.094* (-1.76)
Expense	0.374 (1.62)	0.212 (1.00)	0.359* (1.66)
Turnover	-0.002*** (-3.53)	-0.001*** (-3.64)	-0.002*** (-3.70)
Fund Flow	0.001 (0.20)	0.002 (0.40)	0.001 (0.21)
Net Return	0.008** (2.12)	0.007* (1.88)	0.007** (2.20)
Constant	-1.222 (-1.01)	0.244 (0.20)	-0.879 (-0.65)
Organization Type Dummies	Yes	Yes	Yes
Observations	2,541	2,542	2,541
R-squared	0.24	0.21	0.24

Table V Fixed Salary Only

This table provides the results of logistic regressions modeling the likelihood of fixed-salary-only type of compensation contract of portfolio managers. Variables are defined as in Table II. Our sample consists of 4,138 funds in year of 2009. We control for the business organization fixed effects in the regression. Both the estimated coefficients and marginal effects are reported. The standard errors are clustered at the advisor level. Statistical significance of 1%, 5%, and 10% is indicated by ***, **, and * respectively.

VARIABLES	<i>Fixed Salary Only</i>		<i>Fixed Salary Only</i>		<i>Fixed Salary Only</i>	
	(1a) <i>Coeff.</i>	(1b) <i>ME</i>	(2a) <i>Coeff.</i>	(2b) <i>ME</i>	(3a) <i>Coeff.</i>	(3b) <i>ME</i>
<u><i>Advisor Characteristics</i></u>						
Log(Advisor Size)	-0.102 (-0.65)	-0.05%			0.071 (0.35)	0.03%
Log(#Employee)	-0.695*** (-3.60)	-0.34%			-0.525** (-2.21)	-0.19%
Clientele Dispersion			1.628** (2.37)	0.67%	1.200 (1.24)	0.42%
#Affiliations			-0.461*** (-3.33)	-0.19%	-0.362** (-2.10)	-0.13%
Log(Advisor Age)	-0.339 (-0.97)	-0.17%	-0.491* (-1.65)	-0.20%	-0.373 (-1.04)	-0.13%
<u><i>Manager Characteristics</i></u>						
Stakeholder Dummy	0.783 (1.08)	0.51%	0.604 (0.97)	0.31%	0.615 (0.86)	0.27%
Log(Industry Experience)	0.563 (1.48)	0.28%	0.630 (1.54)	0.26%	0.580 (1.40)	0.21%
Team Dummy	-0.122 (-0.27)	-0.06%	-0.054 (-0.12)	-0.02%	-0.019 (-0.04)	-0.01%
<u><i>Fund Characteristics</i></u>						
Total Risk	0.031 (0.40)	0.02%	0.050 (0.65)	0.02%	0.038 (0.51)	0.01%
Subadvised Dummy	-0.012 (-0.03)	-0.01%	-0.022 (-0.05)	-0.01%	-0.076 (-0.16)	-0.03%
Log (Fund Size)	0.114 (1.33)	0.06%	-0.007 (-0.08)	0.00%	0.041 (0.43)	0.01%
Log (Fund Age)	-0.084 (-0.44)	-0.04%	-0.013 (-0.07)	-0.01%	-0.075 (-0.34)	-0.03%
Expense	0.653 (1.51)	0.32%	0.693 (1.58)	0.29%	0.678 (1.62)	0.24%
Turnover	-0.000 (-0.35)	0.00%	-0.000 (-0.32)	0.00%	-0.000 (-0.22)	0.00%
Net Flow	0.003 (0.15)	0.00%	-0.008 (-0.41)	0.00%	-0.006 (-0.32)	0.00%
Net Return	-0.010 (-1.01)	0.00%	-0.010 (-1.10)	0.00%	-0.009 (-1.03)	0.00%
Constant	-2.810 (-1.30)		-4.758** (-2.19)		-3.966* (-1.65)	
Organization Type Dummies	Yes		Yes		Yes	
Observations	4,116		4,121		4,116	
Pseudo R-squared	0.224		0.240		0.255	