Evidence on the Compensation of Portfolio Managers*

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ABSTRACT

We survey 396 portfolio managers about the structure of their compensation. Overall, compensation packages are more likely to be "subjective and discretionary" than "objective and formula-based." Firm success-factors such as firm profitability have more impact on bonuses than client success factors like investment performance. Differences in the structure of compensation across firms, clients, job-types, and manager characteristics reflect likely differences in the underlying contracting environments, especially differences in the difficulty of monitoring performance and exerting control.

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I. Introduction

In standard asset pricing theory, individuals are assumed to invest directly in financial markets. Yet Allen (2001) reports that the proportion of U.S. corporate equities held directly by individuals was less than 40% in 2000, down from 68% in 1970 and 90% in 1950. Clearly, individuals are choosing to delegate more of the responsibility for choosing their equity portfolios to institutions. As institutions become more important in financial markets, it is natural to ask what effect delegated portfolio management has on asset prices.

A satisfactory answer must acknowledge that institutions often re-delegate the portfolio management task to an investment advisory firm that hires a portfolio manager to do the actual asset selection. Characteristics of the manager, the assets he manages, the advisory firm that employs him and the clients he serves collectively define a contracting environment in which his compensation plan is negotiated. The manager acting under the contract invests directly in financial markets, but is, as Ross (1988) puts it, "impacted and constrained by regulations and agency considerations" unique to a particular contracting environment.

The subject of the present study is the compensation plans of these individuals. We survey the portfolio managers who work for SEC registered investment advisory firms[1] and ask them to describe themselves, their jobs, their employers, their clients, and most importantly, their compensation plans. The result is the first detailed examination of the incentives faced by individuals who actually do the asset selection in investment advisory firms.[2] We hope to inform future theoretical work on optimal contracting in delegated portfolio management set-

[1]SEC registered investment advisers are the primary providers of delegated portfolio management in the United States. The term refers to "any person who, for compensation, engages in the business of advising others, either directly or through publications or writings, as to the value of securities or as to the advisability of investing in, purchasing, or selling securities, or who, for compensation and as part of a regular business, issues or promulgates analyses or reports concerning securities." With only a few exceptions, all investment advisers who "make use of the mails or any means or instrumentality of interstate commerce in connection with his or its business as an investment adviser" must register with the SEC.

[2]We should point out that there are a number of compensation consulting firms that have, over time, gathered a large store of information about the structure of portfolio manager contracts. However, the consultants we contacted were less than enthusiastic about the prospect of sharing that information with academic researchers.

tings by providing evidence of the most important problems faced by portfolio managers and their employing firms in various contracting environments. We also hope that our results will inform efforts to draw-out pricing implications of delegated portfolio management by drawing attention to the features common to all contracting enviroments.

Our survey approach broadens past research into the incentives faced by individuals who manage money on behalf of someone else. For instance, Deli (2002) and Coles, Suay, and Woodbury (2000) exploit the SEC regulation that requires investment companies to disclose contracts made with investment advisory firms, resulting in a rich public dataset on adviser compensation. Many of our results confirm their findings, but we can speak also to the incentives faced by managers who invest money for other types of clients. This capability is important given that investment companies hold less than 10% of the shares held by institutions required to file their equity holdings with the SEC, according to Bennett, Sias, and Starks (2003).

Our survey helps clarify the relationship between inter-firm agency problems (between the investment advisory firm and its clients) and intra-firm agency problems (between the advisory firm and its employees doing the actual asset selection). For the most part, prior empirical research like Deli (2002) has maintained that the incentives facing the advisory firm (as revealed through disclosures to the SEC) are the same incentives facing the portfolio manager who ultimately picks the stocks. We find evidence for this view and our survey helps bring into the focus one mechanism by which this alignment is achieved: firm success-factors such as firm profitability have more impact on bonuses than client success factors like investment performance. The evidence also provides a way of understanding why more than a few portfolio managers working for mutual fund investment advisors recently permitted late-traders and market-timers to trade their funds (lowering performance in the process) in exchange for so-called “sticky assets”: new flows - one such firm success factor - effect the

bonuses of managers at scandal-tainted firms (as defined by Morningstar) more than those at scandal-free firms (p-value: 0.09).[3]

Our survey complements industry surveys like AIMR's Investment Management Compensation Survey. Every two years, the AIMR survey documents pay levels for a large number of investment management professionals (including portfolio managers) employed in the U.S., Canada, United Kingdom, Hong Kong, and Singapore. Their sample size and response rate is usually quite high. But missing from their study are detailed questions about the *determinants* of portfolio manager pay. Without such information, it is impossible to understand the incentives compensation provides and the problems these contracts attempt to solve.

One way to think about our survey is that by focusing on determinants of pay instead of pay levels, we are providing depth to complement AIMR's breadth. Practitioners and academics can use our survey to guage the relative impact of various factors that influence a portfolio manager's base salary and bonus. He or she then can consult the AIMR survey to quantify these impacts. The separation of pay determinants from pay levels also enables us to ask a more probing set of questions about compensation and career concerns without appearing "too personal."

Our survey helps contribute to the discussion regarding the utility of disclosing the structure of portfolio manager compensation to mutual fund investors. Recently, Roye (2003), in response to questions from the chairman of the House Subcommittee on Capital Markets, Insurance, and Government Sponsored Enterprises, acknowledged that such disclosure could "provide fund shareholders with information that would be helpful in assessing the incentives of the individuals who are managing the fund." But he went on to list a number of "practical issues related to requiring disclosure of the compensation structure of a portfolio manager, which could make the disclosure fairly lengthy and complex," including the fact that many funds are team managed and some managers manage multiple funds.

[3]Managers at scandal-tainted firms also were more likely to report that risk-measures like VaR and tracking error are high-impact bonus measures and that underperformance under those measures is a likely sole-cause of dismissal.

Though we do not claim to have the best solution to these practical problems, we have had to address them in order to carry out our survey. Our best efforts therefore can be a useful starting point for those interested in providing fund shareholders with information that would be helpful in assessing the incentives of the individuals who are managing their funds.

Overall, the survey results uncover important differences between inter-firm contracts (which have been studied previously) and intra-firm contracts (observed for the first time here) that call for additional theoretical explanation. For instance, while Deli (2002) finds limited usage of benchmark adjusted performance measures in the contracts of investment advisory firms (and Admati and Pfleiderer (1997) finds them non-optimal), we find that most managers' bonuses are impacted by investment performance relative to a benchmark and/or peer group. Moreover, while previous empirical and theoretical work features objective and formulaic contracts (e.g. percent of assets, excess-of-benchmark return etc.), most managers describe their contracts as "subjective and discretionary." Both results indicate important though underappreciated aspects of the typical contracting environment.

Finally, the results, when analyzed conditional on firm, job, manager, and client characteristics, reveal rich heterogeneity in contract structure consistent with the predictions of contract theory. Managers in environments where monitoring is difficult have more performance-sensitive contracts. Managers serving clients who can not easily assert control over the assets they've entrusted to the manager's firm have more performance-sensitive contracts. We don't find much evidence that managers signal higher marginal product through their choice of contract, however.

The paper is organized as follows. In the next section, we present the survey design and our sampling methodology. In the third section we describe general aspects of portfolio manager compensation contracts. In the fourth section, we analyze the contracts conditional on firm, client, job, and manager characteristics. Section V offers concluding remarks.

II. Methodology

A. Design

Our survey aims to provide a detailed examination of the compensation plans of portfolio managers. Based on conversations with investment management compensation consulting firms and industry executives and a careful review of the existing literature, we developed a draft survey that was circulated to a group of prominent academics for feedback. We incorporated their suggestions and revised the survey. We then sought the advice of marketing research experts and actual portfolio managers on the survey design and execution. We made changes to the format of the questions and overall survey design with the goal of minimizing biases induced by the questionnaire and maximizing the response rate.

All surveys suffer from the same problems. Surveys measure beliefs and not necessarily actions. Survey analysis faces the risk that the respondents are not representative of the population, or that survey questions are misunderstood. And respondents may lie.

We argue that some of these problems are less likely to influence this particular survey. First, most of our questions are objective, requiring memory rather than introspection. Second, we show in the appendix that our sample is broadly representative of the population from which it was drawn, comparable to the samples studied in past AIMR surveys, and not adversely affected by non-response bias.

Third, assisting us in the survey project was Southeastern Institute of Research, Inc. (SIR), a full-service marketing research firm owned and operated by researchers. Since 1964, SIR has completed more than 10,000 studies for a variety of clients, including educational institutions at all levels private and public, as well as many colleges and universities. SIR assisted us in every phase of the project from survey design to delivery and processing.

Using the golden version of the survey, we conducted beta tests at a number of regional banks, brokerage firms, and investment advisory firms. This involved having willing portfolio

managers at each site fill out the survey, note the required time, and provide feedback. Our 11 beta testers took, on average, 12 minutes to complete the survey. Based on this and other feedback, we made final changes to the wording on some questions. The final version of the survey contained 34 questions - most with subparts - and was four pages long. One section collected demographic information about the portfolio managers.

The survey instrument appears on the internet at the address http://www.olin.wustl.edu/cres/. Nearly every respondent answered every question.

B. Delivery and Response

We used two mechanisms to deliver the survey. On April 23, 2003, SIR mailed an alert letter from its offices in Richmond, Virginia notifying each portfolio manager listed in S&P's *2002 Directory of Registered Investment Advisers* of the survey. Those without a known email address (5397 portfolio managers) were also sent a direct response questionnaire and given the option of responding to the survey via either business reply mail or website. On April 28, 2003, managers with known e-mail addresses (1974 portfolio managers) were invited to participate by website only. SIR collected the data from the web survey using its own proprietary internet survey software. By using this software, each respondent received an identical script as well as skip patterns.[4]

To encourage the managers to respond, we offered an advanced copy of the results to interested parties. The managers returned their completed surveys to SIR. Using a third party to collect the surveys ensures that the survey responses are anonymous. We feel that anonymity is important due to the sensitive (and proprietary) nature of information about compensation. Although we do not know the identity of the survey respondents, we do know a number of characteristics of their employing firms.

[4]Respondents to the web version of the survey are identical to the mail-in respondents in their responses and in their characteristics (except for age and gender). Table 1 shows that web respondents are younger, less tenured, and male.

Approximately a week later, a reminder email was sent to those who had not yet responded, and to those who had started, but not yet completed the survey. Direct mail reminders were also sent to those who had not yet responded approximately two weeks after the initial mailing of direct response questionnaires. Subsequent follow-up telephone calls to those who had not yet responded (via either mechanism) by May 30, 2003 were placed by the Olin School of Business with the assistance of a local telemarketing firm.

Three hundred ninety-six completed surveys were returned, for a response rate - excluding "wrong" numbers and those letters and emails returned as "undeliverable" - of 6.3%. The number of responses is comparable to other recent academic surveys. For example, Graham and Harvey (2001) survey 392 CFOs in their comprehensive study of the current practice of corporate finance.

C. Summary Statistics and Data Issues

Figure 1 presents summary information about the investment advisory firms that employ the portfolio managers in our sample. The firm size distribution is highly skewed. The median firm has $2.8 billion in assets under management, but the average firm manages more than 10 times that amount. The median number of portfolios managed at the firms is 150. This distribution also is highly skewed, with the average number of portfolios managed around 685.

Note that a single client may hire a firm to manage more than one of his portfolios, providing a different set of objectives and policies for each. This is the case with, say, a mutual fund family that hires an investment advisory firm to manage the funds it offers. Thus, the number of portfolios managed is very likely an upper bound on the number of clients served by the manager's firm. An SEC filing (Form ADV) for a firm in our sample illustrates this: one of its managers reports that the firm manages 150 portfolios, yet the firm's contemporaneous SEC filing reveals that it serves only 11-25 clients.

Figure 1 also shows that the primary business of the vast majority (78%) of the firms in our sample is "investment advisor," though there is a significant percentage (16%) of investment companies (e.g. mutual funds, closed end funds, unit investment trusts) as well. In subsequent analysis, we refer to the firms whose primary business is something other than investment advisor as subsidiaries. This classification is useful as investment and insurance companies often use internal or closely-related investment advisors (though these advisors still must register with the SEC), suggesting possible differences in control environments. Not suprisingly, the vast majority (93%) of the firms in our sample are headquartered in the United States.

Figure 2 presents summary information on the personal characteristics of the portfolio managers in our sample. They are highly educated, with over 70% in possession of some form of graduate degree. Moreover, they perceive value in professional designations, with over 68% in possession of at least one designation like the CFA, CPA, or CFP. In subsequent analysis, we distinguish between managers with and without MBAs. We also distinguish between managers with and without CFAs.

The typical portfolio manager in our sample is a middle aged man. 90% of the respondents are men, and the largest single age grouping of respondents is 40-49. The managers in our sample are experienced, with the largest single grouping having made a career as a portfolio manager for greater than 20 years. However, their tenure with their current firm is much shorter, the largest single grouping having been a portfolio manager at their current firm for 6-10 years.

Figure 3 presents summary information on the job responsibilities of the managers in our sample. The median manager manages $435 million and the median number of portfolios managed is 20. This last figure is quite interesting because the prototypical manager in the literature is the sole manager of a single portfolio. In fact, 21% of the managers in our sample are part of an investment team and only 5% manage a single portfolio.

However, our managers' reported number of portfolios managed may be misleading. Note that a single portfolio, e.g. a mutual fund, may be held jointly by many clients. We *hope* that

the manager of such a portfolio reports managing one portfolio, but he may report instead the number of clients with shares in that portfolio (on the theory that he is managing each of their "portfolios"). Thus, it is quite possible that "number of portfolios managed" is biased-upwards by managers who use the words *portfolio* and *client* interchangeably.

In subsequent analysis, we divide the reported number of portfolios managed by the manager by the reported number of portfolios managed at the firm to provide a measure of the job responsibilities of the manager. We feel that this measure is less susceptible to bias as long as the manager interprets both questions similarly.

The average portfolio is roughly a 60-40 blend of predominantly U.S. equity and fixed income securities. The average one-year total return on assets under management as of December 31, 2002 is -4.59% (N=330), which compares favorably with the -5.79% return on a hypothetical matching benchmark consisting of the CRSP value-weighted index and the 10-year U.S. Treasury bond return. In subsequent analysis where more precise risk correction is warranted, we use each manager's reported asset allocation (% domestic equities, % international equities, % domestic fixed income, % international fixed income) and the realized returns on industry-standard benchmarks (S&P 500, MSCI EAFE, Lehman Brothers Aggregate Bond, JP Morgan Non-U.S. Global Bond). About 25% (N=393) report writing or investing in options, futures, or other derivative securities in the last year.

Figure 4 presents summary information on the clients of the managers in our sample as of the survey date. The assets are split more or less equally among institutional investors, individual investors, and pooled investment vehicles e.g. investment companies, hedge funds, and pension funds. On average, our managers' clients have been with the firm for 8 years.

Table 1 presents correlations for the control variables. Young managers in our sample are more likey to have a CFA and to manage a smaller share of their firm's assets (and a smaller amount of assets in absolute terms). They are more likely to manage portfolios as part of a team and they spend less time with clients than their older counterparts. The same story emerges for managers new to a career in portfolio management. In addition to the above,

managers new to a career in portfolio management tend not to manage international securities. Managers new to a particular firm (but not necessarily new to life or their careers) manage a smaller share of their firm's assets, but show no other meaningful differences. The firms employing young managers are larger (by assets) and more likely to be a subsidiary.

Firms employing managers with an MBA or CFA aren't meaningfully different, except that firms employing managers with a CFA are less likely to be headquartered outside of the U.S. Managers with an MBA or CFA hold fewer international securities and derivatives. Managers with an MBA also hold fewer equities. These findings are puzzling if these types of education/certification are a sign of increased managerial marginal product. They are less puzzling if MBA/CFA holders perform no better than their un-credentialled counterparts.

Female managers hold fewer derivatives and manage a smaller share of their firm's assets. Firms employing female managers aren't meaningfully different. AIMR (2003) documents a gender gap in the compensation of investment professionals (including but not limited to portfolio managers) which they attribute, in part, to differences in CFA ownership (a higher proportion of men hold a CFA in their sample). Table 1 shows no significant gender difference in CFA ownership. However, in a subsequent section, we discuss interesting gender differences in reported performance and in the compensation contracts themselves, which contribute to an explanation of the gender gap.

III. General Aspects of Portfolio Manager Contracts

This section studies general aspects of portfolio manager compensation contracts, including bonus, base salary, and other features.

A. Bonuses

Respondents were asked for the percentage of their compensation that is bonus in a typical year. In addition, they were asked to rate a series of factors that might impact that bonus on a scale of 1 to 4 (1 meaning "a lot of impact," 4 meaning "no impact at all").

Table 5 shows that on average, a little over 45% of a manager's compensation is due to the bonus. This compares favorably with the 20-30% bonus paid to portfolio managers in AIMR (2003) during the recent down market. About 5% of a manager's compensation is due to non-cash items like options, stock, or deferred compensation.

The first column of Table 2 shows the fraction of managers that viewed a particular factor as having a lot of impact on their bonus. Among the most interesting findings is that the factors related to firm success have more impact on the managers' bonus than factors related to the success of the portfolios being managed. For instance, over 44% of the managers said overall firm profits have a lot of impact on their bonus. Fewer said the same thing about any measure of investment performance.[5]

The second column of Table 2 confirms this point via mean responses. The mean rating (2.30) of performance factors (performance versus benchmark, versus peers, and in the past) is higher than the mean rating (2.05) of firm success factors (flows, new business, profits), implying that managers' bonuses are more dependent on firm success than on client success. Though unreported, just about all of the managers who filled in a bonus factor they felt did not appear on our list wrote in a firm success factor like firm revenues or firm assets under management.

One reason why delegated portfolio management might effect prices is that contracts between investment advisory firms and their clients are almost always structured on an open-end basis, making it possible for clients to liquidate their shares in response to short-term underperformance. Shleifer and Vishny (1997), Stein (2003) and Vayanos (2003) show how the

[5] AIMR (2003) finds a similar result hailing it as "another sign of the times."

threat of liquidation can constrain arbitrageurs from placing trades that look good in the long run but not the short run, resulting in prices that deviate from fundamental values. Since firm success factors are closely related to assets under management, we view the common emphasis on firm success factors in the bonus as evidence of a mechanism through which the threat of liquidation is passed from the firm to the managers it employs.

Though we find firm success factors are more important than client success factors, the most highly rated client success factors are interesting. Previous research has debated the utility of benchmark-adjusted compensation schemes with Admati and Pfleiderer (1997) finding no role for such schemes and Dybvig, Farnsworth, and Carpenter (2002) finding a central role (as long as the manager faces restrictions on portfolio choice perhaps like those documented in Almazan, Brown, Carlson, and Chapman (2002)). Consistent with Dybvig, Farnsworth, and Carpenter (2002), only 15% of the managers in our sample report that investment performance relative to a benchmark has "no impact at all" on their bonus.[6] In fact, 37% of the managers in our sample report that it has "a lot of impact" on their bonus, making it the third most important factor overall.

Brennan (1993) and Cuoco and Kaniel (2001) present models where delegated portfolio management effects prices because managers have benchmark-adjusted compensation contracts. Generally the prices of the securities in the benchmark end up over-priced and more volatile as a result. Our results suggest that benchmark-adjusted compensation provides incentives, but its effect on prices is probably more muted. First, a significant proportion of portfolio managers are not effected by benchmark-adjusted compensation schemes at all. And second, as we discuss in subsequent sections, the degree of their use is not as uniform across contracting environments as, say, firm profits.

Other client success factors like risk control measures and tax efficiency were rated low-impact, though we discuss interesting differences in these factors across firms, clients, and

[6]Unreported results indicate that these managers are most likely in "private client services," offering portfolio management tailored to the particular objectives of each retail client. They control about 4% of the assets managed by all respondents.

job-types in subsequent sections. Keeping the customers happy was rated high-impact by more managers than non-performance-related factors (cost controls, employee development, and marketing) but the mean response indicated that both factors had about the same impact on bonuses overall.

B. Base Salary

Respondents were asked to rate a series of factors that might influence their base salary on a scale of 1 to 4 (1 meaning “a lot of impact,” 4 meaning “no impact at all”).

Table 3 shows that base salaries tend to reward primarily years of experience, the size of the portfolio(s) being managed, and past performance. Less important is education and the base salary of portfolio managers in the industry.

Previous research suggests that portfolio size and past performance are related factors. Chevalier and Ellison (1999) studies a group of mutual fund managers who separated from their funds. They document that fund managers who controlled fewer assets post-separation tended to have had poorer pre-separation performance. Table 3 suggests that such managers are likely to have lower base salaries.

C. Other Features

In addition to questions about the compensation contract, we also asked the managers to characterize the completeness of their contracts and the risks of dismissal.

C.1. Completeness

One of the most basic implications of contract theory is that the contract should be understood and agreed to by both contracting parties and that it should be based on measures of perfor-

mance that are observable by both parties. Yet, there are situations when such a complete contract is not optimal.

If the manager is part of a management team, then incentive schemes based on team performance will suffer from a free-rider problem and the firm might attempt to improve incentives by making pay depend on its subjective judgment of the manager's contribution to the group's performance. If the manager is easily monitored, the firm may find it optimal to recalibrate incentives by supplementing objective measures of performance with relevant first-hand information that arises during the measurement period. If a manager's job duties include things which are inherently difficult to measure (like attention to clients) it may not be optimal to base compensation entirely on objective performance measures. Finally, Gibbs, Merchant, der Stede, and Vargus (2004) provide evidence that if performance measures are easily manipulated, excessively noisy or difficult to achieve, subjectivity can sharpen incentives and provide employees insurance against downside risk in their pay.[7]

Table 5 suggests that many of these issues do arise in the typical contracting environment. Respondents were asked to describe their compensation package as (1) objective/formula-based or (2) subjective/discretionary. The mean response was 1.54, with over half of the managers (54%) considering their package subjective/discretionary. This contrasts with existing models of optimal contracting in delegated portfolio management settings like Bhattacharya and Pfleiderer (1985), Stoughton (1993), and Dybvig, Farnsworth, and Carpenter (2002) which exclusively feature objective/formulaic contracts.

One industry executive described subjective contracts like this:

> [The performance of the portfolio] creates a pool of dollars from which individual awards are made to equity analysts and porfolio managers. This is where a bottoms-up assessment is made of each analyst's performance and the degree to which he or she has effected the overall performance that resulted in the [bonus

[7] Roy and Serfes (2002) give other benefits of an incomplete contract: ambiguity about the terms of the contract induces agents to work harder for fear of falling below an unspecified threshold. Bernheim and Whinston (1998) shows how leaving verifiable actions unspecified in the contract creates opportunities for agents to influence (by working harder) the beliefs of the principal about the unverifiable actions they also must take.

pool]. The pool is then allocated to the analysts generally in proportion to their contribution.

Though Table 5 shows broad use of subjective contracts like these by all types of managers in our sample, Table 5c hints at the features of contracting environments where subjective contracts are paticularly appealing. Subjective contracts are more likely to show up in environments where the manager spends much of his time dealing with clients or where he (or his firm) serves many clients. They also are very likely to show up when the manager manages international securities, which presumably are so complex as to defy objective performance measures.[8]

C.2. Risks of Dismissal

Though external to the compensation contract, termination (or the fear of termination) can also provide incentives. Chevalier and Ellison (1999) documents that career concerns generate incentives that effect the risk-taking behavior of young mutual fund managers. Given a list of the same factors that might impact bonuses, respondents were asked to rate the likelihood that a given factor would be the sole cause of their dismissal on a scale of 1 to 4 (1 meaning "very likely," 4 meaning "not at all likely").

Table 4 shows that none of these factors are very likely to be the sole cause for dismissal. The factor rated the highest (below-average investment performance relative to the benchmark) was considered very likely to be the sole cause for dismissal by only 13% of the managers. This is probably because the causes for dismissal we asked the manager to consider don't have anything to do with ethics. As one manager put it: "... one of the main reasons why you get fired from a financial firm has to do with violations of their code of practice or the Standards of Professional Conduct that AIMR sets out." In fact, the first AIMR Standard is

[8]Managers with objective contracts perform no better than managers with discretionary contracts (t-stat: -0.60).

that “members shall maintain knowledge of and comply with all applicable laws ...” Clearly, a full-blown study of dismissal would need to include this highly-likely cause.

However, we ask the questions we do about risks of dismissal because we are interested in incentives not ethics. So we find it interesting that client success factors (investment performance relative to benchmark or peer group) were rated higher than firm success factors (flows and new business) as likely sole-causes of dismissal, on average. Moreover, below-average customer satisfaction was more likely a deal-breaker than below-average non-performance-related factors, though bad performance on these factors was more detrimental to continued employment than bad risk control or tax inefficiency. One way to summarize these results (and the results on bonuses), is that managers get rewarded when they help the firm and fired when they hurt the client.

The results on tax efficiency merit additional comment. Bergstresser and Poterba (2002) finds that mutual fund flows are sensitive to after-tax returns, suggesting that individual investors consider the tax efficiency of the investment advisors their funds hire. Though below-average tax efficiency is unlikely to be a sole cause for dismissal for managers in general, we do find that managers serving individual clients rate it as such more often.

Finally, Table 4b shows that young managers rate peer group underperformance higher as a likely sole cause for dismissal, confirming Chevalier and Ellison (1999). However, *l*ong-tenured managers report that they are more likely to be dismissed for benchmark underperformance. Perhaps this is evidence that terminations serve a dual role as in Kwon (2003): sorting and incentive. Young managers are fired when it is discovered that they are not well suited for their job. More experienced managers that have shown themselves well-suited for their jobs still face a termination probability in order to keep them working hard.

IV. Effects of Firm, Client, Job and Manager Characteristics

This section analyzes the survey responses to the various compensation questions conditional on the control variables in Table 1. Instead of describing the responses variable by variable, we perform an analysis similar to Deli (2002). The results suggest that differences in the structure of compensation across firms, clients, job-types, and manager characteristics reflect likely differences in the underlying contracting environments, especially differences in the difficulty of monitoring performance and exerting control.

A. Monitoring

We expect that the form of the manager's contract is related to the difficulty of monitoring his actions. Linking manager payoffs to manager actions resolves the agency conflict between the firm and the manager when the manager's actions can be observed. When managerial actions are only observable with some degree of noise, however, linking manager payoffs to manager actions is less efficient. The existing literature suggests that when monitoring manager actions is difficult, tying manager payoffs to performance (as a summary statistic for manager actions) becomes optimal. The results conditional on firm and job characteristics support this hypothesis.

There are more managers to monitor in larger firms, so we would expect to see more performance-sensitive contracts and more attempts to control risk contractually in these settings. Indeed Table 2a shows managers in large firms (by assets under management) report a significantly higher impact of current investment performance (relative to benchmark and peer group) and previous investment performance (however measured) than their small-firm counterparts. They also report a significanlty higher impact of risk control measures such as tracking error or VaR on their bonuses.

Equities, international securities, and derivatives tend to be volatile. Khorana (1996) and Deli (2002) suggest that this volatility makes it harder to separate performance from luck and hence, we would expect to see contracts providing more incentives in these contracting environments. Table 2c doesn't show much difference in performance-impact in the contracts of managers of these securities, but it does show that managers of international securities and derivatives report a significantly higher impact of risk control measures on their bonuses, with managers of international securities also reporting a significantly higher likelihood of termination for below-average risk control in Table 4c. The evidence on equity managers is mixed: equity managers report less impact of risk control measures on their bonus but report a higher likelihood of termination for below-average risk control. A closer look at Table 1 reveals, however, that high-equity managers in our sample are from small firms (and thus more easily monitored).

Managers who manage a large proportion of the firm's assets or portfolios are likely more visible in the firm and easier to monitor, but the actions of a single member of a team that manages a portfolio are probably harder to monitor. Supporting this intuition, Table 2c shows that investment performance has a significantly lower impact on the bonuses of managers of the first type. And managers who do most of their managing as part of a team report that risk control measures have a higher impact on their bonuses.

B. Control environment

Some have argued that open-end mutual funds offer "a special form of diffuse control" because fund investors, by redeeming their shares, may affect what amounts to a partial takeover or liquidation of the fund. The constant threat of withdrawl of fund assets serves as a disciplining mechanism for open-end fund managers that is not present for closed-end fund managers. The absence of that disciplining force may result in the use of contractural alternatives to better align advisor and manager interests.

Since we are studying employees, the control environment is quite firm: the firm always can remove assets from a manager by firing him. However, we argue that a manager's control environment also includes the ability of the client to remove assets from his *firm*. So, under this line of reasoning, a manager who serves a client that can easily remove assets from the firm is in a firmer control environment than a manager who serves a client that can not easily remove assets from the firm - even though both managers are employees and can always be fired.

Therefore, a manager serving individual clients works in the firmest control environment. After all, an individual can decide to withdraw his funds from the firm without consulting anyone else. Not so for institutions which typically make this type of decision in committee. The process of removing assets from the advisory firm is even more difficult for a pooled-investment vehicle, which would need the approval of its board of directors and, quite possibly, the pool shareholders. For a parent company to remove assets from one of its subsidiaries would be perhaps the most disruptive event of all. Thus, we wouldn't be surprised to see, along this continuum, manager contracts becoming progressively more performance-sensitive.

Consistent with this line of reasoning, Table 2d shows that managers serving individual clients report less impact of current investment performance (relative to benchmark and peer group) and previous investment performance (however measured) than their counterparts. And Tables 2a, 4a and 5a show that managers in subsidiaries report more impact of investment performance on bonus and dismissal probability and a higher proportion of bonus compensation than their counterparts working for other types of firms.

C. Signaling

Payoff sensitivities may serve as a mechanism for differentiating among potential managers. Some have argued that firms may use the sensitivity between managerial payoffs and firm profits to induce self-selection among managers with high marginal product managers preferring

contracts with greater performance-sensitivity and low marginal product managers preferring less performance-sensitivity. Or even if firms don't use marginal compensation to sort among potential managers, managers might seek it in order to signal greater marginal product. We explore this signalling hypothesis using the survey results from female managers and managers with CFA/MBAs.

If they have a higher marginal product than their uncredentialled counterparts, CFA/MBA holders may find a performance-sensitive contract more valuable than a non-holder would. Table 2b shows, however, that there is no relationship between possession of a CFA/MBA and performance-sensitivity of the contract. In fact, there are almost no aspects of the bonus that are different for CFA/MBA holders and Table 5b shows no significant differences in bonuses as a percentage of total pay.[9] We conclude that managers with CFA/MBAs - if they do in fact have a higher marginal product - do not signal it through their choice of contract.

However, CFAs do report that their base salary is more highly impacted by the base salary of other managers in the industry, so it would be incorrect to say that the possession of CFA doesn't matter. In fact, AIMR (2003) documents a CFA wage premium. If the bonuses of CFA holders are determined similarly to non-CFA holders, our results suggest that such a premium must come from the differences in base salary or through superior performance under the same bonus plan. Using each managers' reported asset allocation and 1-year performance, we calculate a standardized measure of performance by subtracting the 1-year return of an allocation-matching benchmark and dividing by the historical 1-year standard deviation of that benchmark's historical returns (using 10 years of past returns). Surprisingly, managers with a CFA report lower standardized returns than their non-CFA counterparts (t-stat: -2.7), suggesting that the CFA wage premium probably results from differences in base salaries. Perhaps CFA holders command higher base salaries because their certification gives them more career opportunities outside of portfolio management.[10]

[9]Customer satisfaction has less impact on the bonus of CFA holders, but Table 1 shows that CFA holders are younger and tend to have less customer contact.

[10]There is no significant difference in the standardized returns of managers with an MBA (t-stat:-1.35).

While the bonuses of CFA/MBA holders do not differ from their uncredentialled counterparts, female managers report that investment performance has a higher impact on their bonus than male managers and they report that bonuses account for a higher percentage of their total compensation. Table 1 reveals no differences between males and females in terms of education/certification, so perhaps the females in our sample are signalling greater marginal product through their choice of contract. One sign of greater marginal product is performance. So, we calculate a standardized measure of performance for male and female managers. What we find is shocking. Our measure of performance based on standardized returns indicates that the males significantly outperform the females (t-stat: 2.2), reducing the likelihood of a signalling explanation and suggesting instead a performance-based explanation of the gender gap.

However, a model consistent with a gender gap, homogenous ability, and higher performance-sensitivity for female managers is found in Goldin (1985). The result obtains because of gender differences in turnover: female managers stay in the job for a shorter period of time and so forms of deferred payment like promotions, deferred compensation, and firm equity are less powerful incentives for females while piece-rate payment like performance-sensitive schemes are more powerful. The gender gap arises because males face a rising wage schedule even though there are no gender differences in ability, owing to the benefits to firms of providing incentives through deferred payment schemes.

The survey does not enable us to test this explanation, but our results suggest potential benefits to asking questions about job turnover on future AIMR surveys. As for the signalling hypothesis and gender, we conclude that female managers do not signal higher marginal product through their choice of contract.

V. Conclusion

This paper provides the first detailed examination of contracts between investment advisory firms and the portfolio managers they employ. The contracts differ from previously-studied

contracts between investment advisory firms and investment company clients in two respects: (1) most managers' bonuses are impacted by investment performance relative to a benchmark and/or peer group, and (2) the typical manager's compensation package is more likely to be subjective/discretionary than objective/formula-based. We interpret our results as underscoring the importance of investment restrictions and the difficulty of measuring performance in typical contracting environments. We observe that these two apparently common aspects of delegated portfolio management have been little-studied in the literature.

We find evidence that intra-firm contracts align managerial incentives more with the firm than with the client. Firm success factors such as firm profitability, flows and new business, have much more impact on bonuses than client success factors like investment performance, tax efficiency, and risk control. Yet, we also find evidence that managerial career concerns are exploited by firms to align managerial incentives with the client. Failure to perform along the dimensions of interest to clients is more likely to be a sole cause for dismissal (though managers are more likely to be fired for ethics violations than for any of the performance-related reasons we study). We interpret our results as support for equilibrium models of delegated portfolio management that feature limits of arbitrage; these models emphasize the effects of firm success/failure on managers.

Finally, we find that differences in the structure of compensation across firms, clients, job-types, and manager characteristics reflect likely differences in the underlying contracting environments. Environments in which it is difficult to monitor managers (large firms, volatile assets under management) and environments with clients who can less easily exercise control (parent companies and pooled investment vehicles versus institutions and individuals) produce more performance-sensitive contracts. We find no evidence that managers attempt to signal increased marginal product by accepting more performance-sensitive contracts.

All in all, the intra-firm contracts we study are broadly consistent with optimal contracting theory. Thus, our results suggest that SEC-mandated disclosure of the structure of mutual fund manager compensation will reveal that competitive forces drive systematic cross-

sectional variation in contract form. Yet such disclosure may still be quite valuable, especially because of our finding that the typical manager's bonus is more sensitive to firm success than client success. Though the managers in our sample who reported that firm success factors impacted their bonus more than client-success factors performed no different than their peers (t-stat: 0.25), people probably will be interested in knowing whether this result holds true in the mutual fund industry more generally and whether there indeed are increased chances for "mischief" when firm success factors are "too important" to the manager.

Figure 1. Sample characteristics of the SEC-registered investment advisory firms in our sample based on the survey responses of 396 portfolio managers to the questions below.

A. What is the total dollar amount of assets under management at your firm?

B. What is the total number of portfolios managed by your firm?

	N	Min	25%-ile	Median	Mean	75%-ile	Max
Assets ($M)	396	9.0	518.8	2800.0	28894.4	21000.0	800000.0
Portfolios	388	1	50	150	684.8	500	10000

C. Which *one* of the following choices best describes the primary business of your employer?

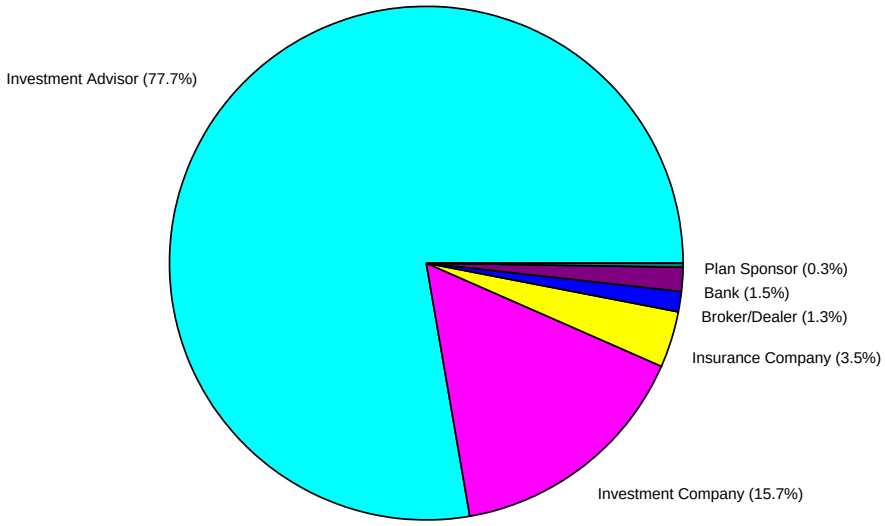
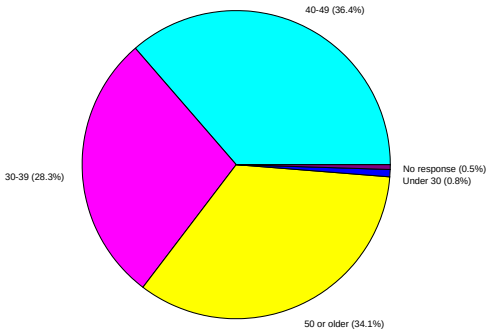
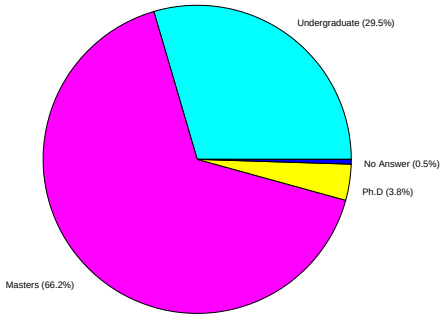


Figure 2. Sample characteristics of the portfolio managers in our sample based on the survey responses of 396 portfolio managers to the questions below.

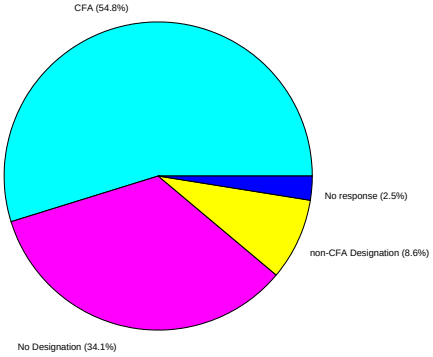
A. Is your age: Under 30, 30-39, 40-49, 50 or older?



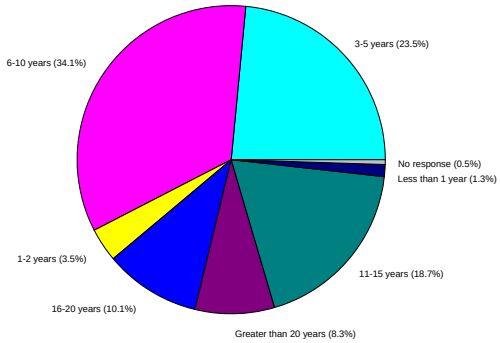
B. Which of the following categories best describes your educational background?



C. Which of the following professional designations have you achieved?



D. How long have you been a portfolio manager with your current firm?



E. How long have you made a career as a portfolio manager?

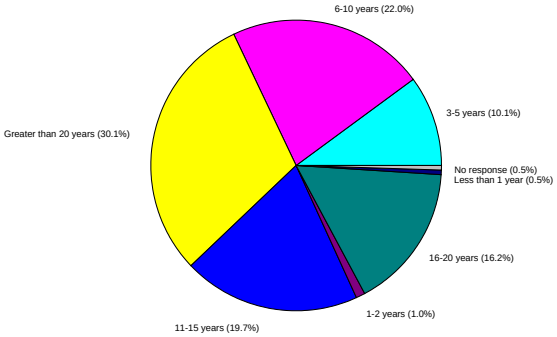


Figure 3. Sample characteristics of the job responsibilities of the portfolio managers in our sample based on the survey responses of 396 portfolio managers to the questions below.

A. What is the total dollar amount of assets under your management?

B. How many portfolios do you personally manage?

	N	Min	25%-ile	Median	Mean	75%-ile	Max
Assets ($M)	391	1.1	150.0	435.0	2785.7	2000.0	140000.0
Portfolios	395	0	5.5	20	103.5	60	6000

C. Please classify the assets under your management by filling in the percentage of assets in each asset class.

	N	U.S. Equity	Int'l Equity	U.S. Fixed	Int'l Fixed
Average Portfolio Weight (%)	393	49.93	7.47	39.05	3.55

Figure 4. Sample characteristics of the clients of the portfolio managers in our sample based on the survey responses of 396 portfolio managers to the questions below.

A. Please classify the clients who own the assets under your management by filling in the percentage of assets owned by each client type

		Institutions			Individuals		Pooled Investment Vehicles				
	N	Taxable Inst.	Tax Exempt Inst.	Gov't Agency	Ind. (non-HNW)	Ind. (HNW)	Mutual Fund	Closed-End Fund	Hedge Fund	ERISA Fund	Pension Fund
Average Client Weight (%)	389	11.05	23.70	0.23	6.20	22.68	12.54	0.76	2.03	12.37	8.44

B. On average, how long have your client's accounts been managed by your firm?

	N	Min	25%-ile	Median	Mean	75%-ile	Max
Length (years)	390	1.0	5.0	7.0	8.2	10.0	50.0

Table 1. Correlations of control variables from the survey.

	Firm Controls				Manager Controls						Job Controls								
	Assets (small to large)	Portfolios (few to many)	Type (advisor to subsidiary)	Location (U.S. to int'l)	Age (young to old)	Education (other to MBA)	Certification (other to CFA)	Job Tenure (short to long)	Career Tenure (short to long)	Gender (male to female)	Assets (small to large)	Portfolios (few to many)	Equity % (small to large)	Derivatives (no to yes)	Asset Share (small to large)	Portfolio Share (small to large)	Int'l % (small to large)	Team % (small to large)	Client (low to high)
Firm Portfolios	0.15**																		
Type	0.35***	-0.13***																	
Location	0.12**	0.01	0.14***																
Age	-0.18***	0.02	-0.14***	-0.00															
Education	0.06	0.08	0.02	-0.07	0.02														
Certification	0.01	-0.03	0.02	-0.09*	-0.10*	0.11**													
Job Tenure	-0.09*	0.04	-0.10*	0.02	0.45***	-0.03	-0.03												
Career Tenure	-0.15***	0.12**	-0.20***	0.02	0.60***	0.02	0.04	0.61***											
Gender	0.07	-0.01	0.04	0.05	-0.04	-0.04	0.08	-0.07	-0.02										
Mgr. Assets	0.63***	-0.03	0.24***	0.10*	-0.13***	-0.03	0.00	0.06	0.01	-0.04									
Mgr. Portfolios	-0.32***	0.49***	-0.33***	-0.10**	0.09*	-0.01	-0.00	0.11**	0.17***	-0.09*	-0.24***								
Equity %	-0.32***	-0.04	-0.14***	0.05	0.029	-0.12**	0.01	0.02	-0.03	0.03	-0.35***	0.08							
Derivatives	0.09*	0.04	0.11**	-0.03	0.00	-0.09*	-0.09*	0.07	0.04	-0.08*	0.13***	-0.06	-0.07						
Asset Share	-0.55***	-0.25***	-0.20***	-0.06	0.12**	-0.06	-0.02	0.13**	0.13***	-0.11**	0.01	0.19***	0.09*	-0.02					
Portfolio Share	-0.53***	-0.32***	-0.21***	-0.15***	-0.02	-0.03	0.07	0.04	0.02	-0.02	-0.29***	0.39***	0.12**	-0.15***	0.46***				
Int'l %	0.07	0.01	0.05	0.23***	-0.06	-0.09*	-0.10*	-0.01	-0.10**	0.02	0.03	-0.06	0.09*	0.23***	-0.01	-0.06			
Team %	0.08	-0.02	0.07	0.00	-0.16***	0.03	0.03	-0.07	-0.10*	-0.04	0.13**	0.07	-0.08	0.09*	0.03	0.10**	0.05		
Client Time	-0.09*	0.21***	0.19***	-0.13***	0.11**	0.02	-0.04	0.06	0.14***	0.02	-0.02	0.29***	0.00	-0.05	0.11**	0.08	-0.00	-0.01	
Paper Survey	0.06	0.03	0.06	0.06	0.22***	-0.04	0.06	0.03	0.14***	0.09*	-0.05	-0.01	-0.05	-0.04	-0.10**	-0.02	0.05	-0.08	0.01

Cross tabulations are conducted by firm assets (large = above the median), portfolios managed by the firm (many = above the median), firm type (investment advisor or other), firm headquarters location (U.S. or other), manager age (old = 50 or older), manager education (other or MBA), manager certificatio or CFA), job tenure (long = more than 10 years), career tenure (long = more than 10 years), gender (male or female), manager assets (large = above the median), portfolios managed by the manager (many = above the median), equity % (large = above the median), derivatives usage (no or yes), manager's s assets managed by the firm (large = above the median), manager's share of portfolios managed by the firm (large = above the median), international % (large = above the median), fraction of assets managed as part of a team (team %: large = above the median), amount of time spent with clients (high = "s "a lot" of time) and whether the survey was completed on paper or through the web (yes = paper). ***, **, * denotes a correlation coefficient that is significantly different from zero at the 1%, 5%, and 10% level, respectively.

Table 2a. Survey responses (by firm controls) to the question: Thinking about your bonus, how much impact does each of the following factors have on your bonus only?

Factor			Assets		Portfolios		Primary Business		Location	
	% A lot of impact	Mean	Small	Large	Few	Many	Investment Advisor	Subsidiary	U.S.	Int'l
Current investment performance relative to your benchmark, e.g. S&P 500	37.08	2.09	2.35	1.84***	2.06	2.15	2.17	1.84**	2.11	1.86
Current investment performance relative to your peer group, e.g. all growth funds	25.72	2.31	2.67	1.95***	2.32	2.31	2.41	1.96***	2.32	2.05
Investment performance in previous years (however measured)	13.32	2.49	2.70	2.28***	2.51	2.49	2.55	2.30**	2.49	2.50
Flows of new money into existing portfolios you manage	30.29	2.16	2.12	2.21	2.32	2.00***	2.09	2.41**	2.16	2.23
New business	37.27	2.02	1.90	2.14**	2.20	1.83***	1.93	2.35***	2.01	2.23
Profitability or stock-price performance of your firm overall	44.65	1.96	1.81	2.11***	2.13	1.79***	1.94	2.05	1.97	1.91
Customer-service rating (however measured)	7.59	2.81	2.77	2.85	2.88	2.72*	2.74	3.05***	2.80	2.91
Non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.92	2.78	2.81	2.75	2.87	2.69**	2.78	2.79	2.79	2.64
Risk control measure such as tracking error or VaR	1.84	3.28	3.37	3.20**	3.25	3.32	3.28	3.29	3.30	3.09
Tax efficiency/minimization	0.79	3.48	3.41	3.55**	3.49	3.46	3.46	3.53	3.48	3.36

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 2b. Survey responses (by manager controls) to the question: Thinking about your bonus, how much impact does each of the following factors have on your bonus only?

Factor			Age		Education		Certification		Job Tenure		Career Tenure		Gender	
	% A lot of impact	Mean	Young	Old	Other	MBA	Other	CFA	Short	Long	Short	Long	Male	Femal
Current investment performance relative to your benchmark, e.g. S&P 500	37.08	2.09	2.12	2.04	2.19	2.03	2.17	2.02	2.11	2.06	2.22	2.03	2.14	1.70**
Current investment performance relative to your peer group, e.g. all growth funds	25.72	2.31	2.26	2.40	2.36	2.27	2.28	2.33	2.33	2.27	2.34	2.29	2.34	2.05*
Investment performance in previous years (however measured)	13.32	2.49	2.48	2.51	2.51	2.48	2.50	2.48	2.53	2.42	2.58	2.45	2.51	2.30
Flows of new money into existing portfolios you manage	30.29	2.16	2.17	2.15	2.19	2.14	2.17	2.17	2.17	2.15	2.21	2.14	2.16	2.23
New business	37.27	2.02	2.02	2.03	2.06	2.00	2.03	2.02	1.97	2.11	2.02	2.02	2.01	2.13
Profitability or stock-price performance of your firm overall	44.65	1.96	1.94	2.01	1.96	1.97	1.96	1.97	1.93	2.03	1.93	1.98	1.96	1.98
Customer-service rating (however measured)	7.59	2.81	2.87	2.70*	2.80	2.82	2.71	2.92**	2.82	2.79	2.84	2.79	2.80	2.92
Non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.92	2.78	2.76	2.83	2.77	2.79	2.73	2.83	2.78	2.79	2.77	2.79	2.80	2.68
Risk control measure such as tracking error or VaR	1.84	3.28	3.30	3.24	3.29	3.28	3.19	3.38	3.31	3.24	3.25	3.30	3.29	3.25
Tax efficiency/minimization	0.79	3.48	3.52	3.39*	3.45	3.50	3.44	3.52	3.51	3.42	3.45	3.49	3.49	3.40

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 2c. Survey responses (by job controls) to the question: Thinking about your bonus, how much impact does each of the following factors have on your bonus only?

Factor		Assets			Portfolios		Equity %		Derivatives		Asset Share		Portfolio Share		Int'l %		Team %		Client Time	
	% A lot of impact	Mean	Small	Large	Few	Many	Small	Large	No	Yes	Small	Large	Small	Large	Small	Large	Small	Large	Low	High
Current investment performance relative to your benchmark, e.g. S&P 500	37.08	2.09	2.30	1.90***	1.85	2.35***	2.04	2.15	2.08	2.14	1.94	2.26***	1.93	2.28***	2.05	2.18	2.08	2.14	1.97	2.15
Current investment performance relative to your peer group, e.g. all growth funds	25.72	2.31	2.61	2.03***	2.08	2.54***	2.28	2.34	2.28	2.40	2.11	2.52***	2.12	2.52***	2.26	2.42	2.30	2.28	2.15	2.38**
Investment performance in previous years (however measured)	13.32	2.49	2.70	2.29***	2.31	2.68***	2.52	2.46	2.51	2.44	2.35	2.64***	2.36	2.65***	2.43	2.60*	2.51	2.35	2.39	2.54
Flows of new money into existing portfolios you manage	30.29	2.16	2.18	2.16	2.27	2.06*	2.14	2.19	2.15	2.19	2.25	2.08	2.17	2.16	2.20	2.11	2.15	2.16	2.45	2.04***
New business	37.27	2.02	2.01	2.03	2.19	1.85***	1.97	2.06	2.01	2.03	2.14	1.89**	2.05	2.01	2.05	1.96	1.98	2.04	2.35	1.87***
Profitability or stock-price performance of your firm overall	44.65	1.96	1.91	2.01	2.10	1.81***	1.98	1.95	2.04	1.77**	1.97	1.95	1.88	2.04	2.03	1.84*	2.01	1.71**	1.92	1.98
Customer-service rating (however measured)	7.59	2.81	2.85	2.77	2.90	2.71**	2.74	2.88	2.81	2.80	2.88	2.74	2.83	2.79	2.90	2.65**	2.80	2.85	3.06	2.70***
Non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.92	2.78	2.91	2.66***	2.81	2.75	2.73	2.84	2.78	2.80	2.80	2.76	2.723	2.83	2.83	2.71	2.82	2.66	3.00	2.69***
Risk control measure such as tracking error or VaR	1.84	3.28	3.39	3.18**	3.15	3.42***	3.22	3.36*	3.36	3.07***	3.27	3.30	3.23	3.34	3.35	3.17**	3.34	3.10**	3.36	3.25
Tax efficiency/minimization	0.79	3.48	3.45	3.51	3.52	3.43	3.49	3.47	3.48	3.47	3.58	3.38***	3.53	3.42	3.50	3.45	3.49	3.45	3.55	3.44

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 2d. Survey responses (by client controls) to the question: Thinking about your bonus, how much impact does each of the following factors have on your bonus only?

Factor	% A lot			(relative to Blend)			Client Age	
	impact	Mean	Blend	Institution	Individual	Pooled Investment Vehicle	Young	Old
Current investment performance relative to your benchmark, e.g. S&P 500	37.08	2.10	1.96	-0.15	0.61***	0.16	2.13	2.04
Current investment performance relative to your peer group, e.g. all growth funds	25.72	2.31	2.18	-.08	0.75***	-0.10	2.37	2.24
Investment performance in previous years (however measured)	13.32	2.48	2.42	0.11	0.43***	-0.25	2.51	2.45
Flows of new money into existing portfolios you manage	30.29	2.16	2.01	0.25	0.06	0.34**	2.09	2.25
New business	37.27	2.01	1.93	0.13	-0.13	0.35**	1.93	2.12*
Profitability or stock-price performance of your firm overall	44.65	1.97	1.86	0.19	0.10	0.19	1.87	2.11**
Customer-service rating (however measured)	7.59	2.81	2.73	0.12	0.06	0.16	2.80	2.80
Non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.92	2.79	2.70	0.13	0.11	0.14	2.76	2.82
Risk control measure such as tracking error or VaR	1.84	3.29	3.26	-0.11	0.24*	0.00	3.27	3.29
Tax efficiency/minimization	0.79	3.48	3.46	0.09	-0.16	0.18	3.49	3.45

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). In the test of the effect of client age, ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. A manager is assigned to a client-type if over 50% of the assets under his management are owned by that client-type. Managers for whom no client-type owns over 50% of the assets are considered Blend. The mean response for client-type Blend is reported, and a regession using separate dummy variables for all other groups is performed. ***, **, * denotes coefficient estimates that are significant at the 1%, 5%, and 10% level, respectively. All table columns not defined here are defined in Table 1.

Table 3a. Survey responses (by firm controls) to the question: Thinking about your base salary, how much impact does each of the following factors have on your base salary only?

Factor			Assets		Portfolios		Primary Business		Location	
	% A lot of impact	Mean	Small	Large	Few	Many	Investment Advisor	Subsidiary	U.S.	Int'l
Base salary of portfolio managers in the industry	17.68	2.40	2.67	2.13***	2.38	2.42	2.44	2.23*	2.41	2.25
Education	9.14	2.45	2.44	2.46	2.50	2.37	2.44	2.46	2.43	2.65
Years of experience	33.61	1.95	1.98	1.91	1.96	1.92	1.93	2.00	1.94	2.15
Size of portfolio(s) you manage	25.48	2.20	2.25	2.16	2.31	2.08**	2.19	2.23	2.20	2.30
Past performance	25.07	2.26	2.34	2.18	2.26	2.26	2.29	2.16	2.24	2.60

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 3b. Survey responses (by manager controls) to the question: Thinking about your base salary, how much impact does each of the following factors have on your base salary only?

Factor		Age			Education		Certification		Job Tenure		Career Tenure		Gender	
	% A lot of impact	Mean	Young	Old	Other	MBA	Other	CFA	Short	Long	Short	Long	Male	Female
Base salary of portfolio managers in the industry	17.68	2.40	2.25	2.71***	2.43	2.38	2.52	2.26***	2.31	2.56**	2.28	2.46	2.43	2.11*
Education	9.14	2.45	2.30	2.75***	2.51	2.41	2.49	2.38	2.32	2.67***	2.28	2.53***	2.49	2.03***
Years of experience	33.61	1.95	1.83	2.18***	1.87	2.00	1.88	2.00	1.82	2.17***	1.83	2.01*	1.98	1.60**
Size of portfolio(s) you manage	25.48	2.20	2.20	2.21	2.15	2.24	2.11	2.31*	2.26	2.11	2.25	2.18	2.20	2.23
Past performance	25.07	2.26	2.21	2.37	2.21	2.30	2.21	2.31	2.28	2.24	2.32	2.24	2.30	1.94**

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 3c. Survey responses (by job controls) to the question: Thinking about your base salary, how much impact does each of the following factors have on your [base salary only]?

Factor			Assets		Portfolios		Equity %		Derivatives		Asset Share		Portfolio Share		Int'l %		Team %		Client Time	
	% A lot of impact	Mean	Small	Large	Few	Many	Small	Large	No	Yes	Small	Large	Small	Large	Small	Large	Small	Large	Low	High
Base salary of portfolio managers in the industry	17.68	2.40	2.63	2.17***	2.18	2.63***	2.36	2.45	2.41	2.37	2.21	2.59***	2.25	2.55***	2.39	2.42	2.40	2.38	2.32	2.44
Education	9.14	2.45	2.45	2.44	2.50	2.38	2.43	2.48	2.44	2.49	2.43	2.46	2.48	2.38	2.43	2.49	2.43	2.41	2.49	2.43
Years of experience	33.61	1.95	2.01	1.88	1.93	1.97	2.00	1.90	1.94	1.99	1.94	1.94	1.92	1.96	1.95	1.95	1.93	1.99	1.95	1.95
Size of portfolio(s) you manage	25.48	2.20	2.28	2.15	2.22	2.18	2.22	2.20	2.20	2.23	2.21	2.22	2.15	2.24	2.27	2.10	2.19	2.21	2.21	2.20
Past performance	25.07	2.26	2.35	2.17*	2.14	2.39**	2.27	2.26	2.28	2.22	2.22	2.31	2.22	2.29	2.28	2.23	2.20	2.35	2.17	2.31

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 3d. Survey responses (by client controls) to the question: Thinking about your base salary, how much impact does each of the following factors have on your base salary only?

Factor	% A lot impact	Mean	Blend	(relative to Blend) Institution	Individual	Pooled Investment Vehicle	Client Age Young	Old
Base salary of portfolio managers in the industry	17.68	2.40	2.27	0.05	0.56***	-0.09	2.39	2.41
Education	9.14	2.45	2.36	0.03	0.23	0.16	2.42	2.50
Years of experience	33.61	1.95	1.88	0.06	0.21	0.04	1.96	1.93
Size of portfolio(s) you manage	25.48	2.21	2.12	0.21	0.04	0.15	2.26	2.11
Past performance	25.07	2.27	2.32	-0.02	0.00	-0.24	2.34	2.15*

Respondents are asked to rate on a scale of 1 (A lot of impact) to 4 (No impact at all). We report the overall mean as well as the % of respondents that answered 1 (A lot of impact). In the test of the effect of client age, ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. A manager is assigned to a client-type if over 50% of the assets under his management are owned by that client-type. Managers for whom no client-type owns over 50% of the assets are considered Blend. The mean response for client-type Blend is reported, and a regession using separate dummy variables for all other groups is performed. ***, **, * denotes coefficient estimates that are significant at the 1%, 5%, and 10% level, respectively. All table columns not defined here are defined in Table 1.

Table 4a. Survey responses (by firm controls) to the question: For each of the following factors, how likely is the factor be the **sole** cause for dismissal for someone at your position at your firm?

Cause			Assets		Portfolios		Primary Business		Location	
	% Very likely	Mean	Small	Large	Few	Many	Investment Advisor	Subsidiary	U.S.	Int'l
Below-average investment performance relative to your benchmark, e.g. S&P 500	12.92	2.69	2.82	2.57***	2.72	2.69	2.74	2.53*	2.71	2.38*
Below-average investment performance relative to your peer group, e.g. all growth funds	10.34	2.72	2.95	2.49***	2.75	2.70	2.80	2.41***	2.73	2.46
Below-average flow of new money into existing portfolios you manage	2.58	3.09	3.02	3.15*	3.11	3.06	3.04	3.24**	3.09	3.13
Below-average amount of new business	4.68	2.99	2.89	3.10**	3.03	2.94	2.91	3.30***	2.99	3.04
Below-average customer-service rating (however measured)	8.79	2.69	2.61	2.78*	2.73	2.64	2.62	2.93***	2.70	2.63
Below-average non-performance-related factors such as help with marketing, cost controls, employee development, etc.	0.04	2.97	2.92	3.03	2.96	2.98	2.95	3.06	2.99	2.71*
Below-average risk control measures such as tracking error or VAR	3.63	3.16	3.30	3.03***	3.17	3.15	3.18	3.13	3.18	2.92
Below-average tax efficiency/minimization	0.52	3.53	3.44	3.62***	3.50	3.55	3.53	3.52	3.54	3.33

Respondents are asked to rate on a scale of 1 (Very likely) to 4 (Not at all likely). We report the overall mean as well as the % of respondents that answered 1 (Very likey). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 4b. Survey responses (by manager controls) to the question: For each of the following factors, how likely is the factor be the **sole** cause for dismissal for someone at your position at your firm?

Reason			Age		Education		Certification		Job Tenure		Career Tenure		Gender	
	% Very likely	Mean	Young	Old	Other	MBA	Other	CFA	Short	Long	Short	Long	Male	Female
Below-average investment performance relative to your benchmark, e.g. S&P 500	12.92	2.69	2.67	2.73	2.67	2.71	2.68	2.72	2.74	2.61	2.82	2.63*	2.73	2.37**
Below-average investment performance relative to your peer group, e.g. all growth funds	10.34	2.72	2.65	2.84*	2.71	2.72	2.70	2.74	2.73	2.68	2.78	2.68	2.74	2.54
Below-average flow of new money into existing portfolios you manage	2.58	3.09	3.06	3.15	3.10	3.08	3.08	3.10	3.04	3.17*	3.05	3.11	3.07	3.27*
Below-average amount of new business	4.68	2.99	2.96	3.06	3.03	2.97	2.95	3.04	2.95	3.06	2.95	3.02	2.98	3.10
Below-average customer-service rating (however measured)	8.79	2.69	2.74	2.61	2.67	2.71	2.68	2.70	2.69	2.70	2.74	2.67	2.65	3.07***
Below-average non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.62	2.97	2.96	2.99	2.95	2.99	3.00	2.94	2.96	3.00	3.02	2.95	2.95	3.15
Below-average risk control measures such as tracking error or VAR	3.63	3.16	3.16	3.16	3.22	3.13	3.13	3.19	3.19	3.12	3.18	3.15	3.17	3.15
Below-average tax efficiency/minimization	0.52	3.53	3.52	3.53	3.53	3.52	3.51	3.55	3.54	3.51	3.56	3.51	3.54	3.44

Respondents are asked to rate on a scale of 1 (Very likely) to 4 (Not at all likely). We report the overall mean as well as the % of respondents that answered 1 (Very likey). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 4c. Survey responses (by job controls) to the question: For each of the following factors, how likely is the factor be the **sole** cause for dismissal for someone at your position at your firm?

Reason			Assets		Portfolios		Equity %		Derivatives		Asset Share		Portfolio Share		Int'l %		Team %		Client Time	
	% Very likely	Mean	Small	Large	Few	Many	Small	Large	No	Yes	Small	Large	Small	Large	Small	Large	Small	Large	Low	High
Below-average investment performance relative to your benchmark, e.g. S&P 500	12.92	2.69	2.80	2.59**	2.54	2.85***	2.69	2.68	2.71	2.63	2.67	2.72	2.66	2.75	2.66	2.74	2.71	2.61	2.56	2.75*
Below-average investment performance relative to your peer group, e.g. all growth funds	10.34	2.72	2.90	2.53***	2.55	2.89***	2.69	2.73	2.73	2.66	2.61	2.82**	2.60	2.85***	2.67	2.78	2.72	2.67	2.55	2.79**
Below-average flow of new money into existing portfolios you manage	2.58	3.09	3.07	3.11	3.14	3.04	3.09	3.09	3.07	3.14	3.14	3.03	3.17	3.01**	3.09	3.09	3.08	3.05	3.24	3.02***
Below-average amount of new business	4.68	2.99	2.95	3.04	3.10	2.88***	3.03	2.96	2.99	3.01	3.09	2.90**	3.04	2.94	3.00	2.99	2.99	2.97	3.23	2.89***
Below-average customer-service rating (however measured)	8.79	2.69	2.69	2.70	2.75	2.65	2.61	2.78*	2.69	2.70	2.83	2.55***	2.78	2.60**	2.73	2.64	2.69	2.72	3.06	2.53***
Below-average non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.62	2.97	2.98	2.96	2.99	2.95	2.98	2.97	2.99	2.92	3.08	2.86***	3.04	2.89*	3.00	2.93	3.00	2.92	3.17	2.89***
Below-average risk control measures such as tracking error or VAR	3.63	3.16	3.29	3.05***	3.08	3.24	3.12	3.21	3.24	2.95***	3.16	3.17	3.14	3.18	3.23	3.05**	3.18	3.09	3.17	3.16
Below-average tax efficiency/minimization	0.52	3.53	3.45	3.60**	3.56	3.49	3.58	3.47*	3.51	3.58	3.64	3.41***	3.63	3.41***	3.52	3.54	3.51	3.55	3.50	3.54

Respondents are asked to rate on a scale of 1 (Very likely) to 4 (Not at all likely). We report the overall mean as well as the % of respondents that answered 1 (Very likey). ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 4d. Survey responses (by client controls) to the question: For each of the following factors, how likely is the factor be the **sole** cause for dismissal for someone at your position at your firm?

Factor	% Very likely	Mean	(relative to Blend) Blend	Institution	Individual	Pooled Investment Vehicle	Client Age Young	Old
Below-average investment performance relative to your benchmark, e.g. S&P 500	12.92	2.70	2.70	-0.09	0.17	-0.06	2.73	2.64
Below-average investment performance relative to your peer group, e.g. all growth funds	10.34	2.71	2.68	-0.01	0.34**	-0.20	2.77	2.64
Below-average flow of new money into existing portfolios you manage	2.58	3.08	3.07	0.09	-0.17	0.15	3.03	3.16*
Below-average amount of new business	4.68	2.99	2.98	0.13	-0.27**	0.18	2.94	3.06
Below-average customer-service rating (however measured)	8.79	2.69	2.71	-0.06	-0.17	0.16	2.63	2.78*
Below-average non-performance-related factors such as help with marketing, cost controls, employee development, etc.	3.62	2.98	3.05	-0.14	-0.20	0.03	2.95	2.99
Below-average risk control measures such as tracking error or VAR	3.63	3.17	3.18	-0.22	0.12	0.03	3.15	3.18
Below-average tax efficiency/minimization	0.52	3.52	3.55	0.01	-0.21**	0.09	3.53	3.51

Respondents are asked to rate on a scale of 1 (Very likely) to 4 (Not at all likely). We report the overall mean as well as the % of respondents that answered 1 (Very likely). In the test of the effect of client age, ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. A manager is assigned to a client-type if over 50% of the assets under his management are owned by that client-type. Managers for whom no client-type owns over 50% of the assets are considered Blend. The mean response for client-type Blend is reported, and a regession using separate dummy variables for all other groups is performed. ***, **, * denotes coefficient estimates that are significant at the 1%, 5%, and 10% level, respectively. All table columns not defined here are defined in Table 1.

Table 5a. Survey responses (by firm controls) to the other compensation questions including:

- How would you best describe the compensation package offered to you by your firm: Objective and Formula-based or Subjective and Discretionary?
- What percentage of your take-home pay is typically given in the form of non-cash compensation?
- In a typical year, what percentage of your take-home pay is your bonus?

Characteristic		Assets		Portfolios		Primary Business		Location	
	Mean	Small	Large	Few	Many	Investment Advisor	Subsidiary	U.S.	Int'l
Completeness (objective/formulaic to subjective/discretionary)	1.54	1.52	1.57	1.48	1.62***	1.54	1.56	1.54	1.61
% Non-cash compensation	5.49	2.91	8.01***	5.99	5.01	5.11	6.86	5.43	6.38
% Bonus	45.16	35.71	54.30***	45.17	44.31	43.16	51.45**	45.02	47.38

In the completeness question, respondents are asked to describe their compensation package as either 1 (Objective and Formula-based) or 2 (Subjective and Discretionary). In the question about non-cash compensation, respondents are asked to provide a percentage. In the question about bonus percentage, respondents are asked to provide a percentage. We report the overall mean. ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 5b. Survey responses (by manager controls) to the other compensation questions including:

- How would you best describe the compensation package offered to you by your firm: Objective and Formula-based or Subjective and Discretionary?
- What percentage of your take-home pay is typically given in the form of non-cash compensation?
- In a typical year, what percentage of your take-home pay is your bonus?

Characteristic		Age		Education		Certification		Job Tenure		Career Tenure		Gender	
	Mean	Young	Old	Other	MBA	Other	CFA	Short	Long	Short	Long	Male	Female
Completeness (objective/formulaic to subjective/discretionary)	1.54	1.56	1.51	1.54	1.55	1.59	1.51	1.55	1.53	1.56	1.54	1.55	1.49
% Non-cash compensation	5.49	6.17	4.15*	6.04	5.13	5.45	5.55	5.17	6.04	4.48	6.02	5.44	5.93
% Bonus	45.16	45.58	44.34	45.74	44.78	43.06	47.65	44.83	45.72	40.85	47.38*	44.19	53.74*

In the completeness question, respondents are asked to describe their compensation package as either 1 (Objective and Formula-based) or 2 (Subjective and Discretionary). In the question about non-cash compensation, respondents are asked to provide a percentage. In the question about bonus percentage, respondents are asked to provide a percentage. We report the overall mean. ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 5c. Survey responses (by job controls) to the other compensation questions including:

- How would you best describe the compensation package offered to you by your firm: Objective and Formula-based or Subjective and Discretionary?
- What percentage of your take-home pay is typically given in the form of non-cash compensation?
- In a typical year, what percentage of your take-home pay is your bonus?

Characteristic		Assets		Portfolios		Equity %		Derivatives		Asset Share		Portfolio Share		Int'l %		Team %		Client Time	
	Mean	Small	Large	Few	Many	Small	Large	No	Yes	Small	Large	Small	Large	Small	Large	Small	Large	Low	High
Completeness (objective/formulaic to subjective/discretionary)	1.54	1.51	1.57	1.52	1.58	1.55	1.54	1.52	1.61	1.55	1.54	1.60	1.49**	1.51	1.61*	1.53	1.57	1.47	1.58*
% Non-cash compensation	5.49	3.36	7.75***	6.27	4.69	6.70	4.39**	5.07	6.86	6.81	4.27**	6.47	4.58*	5.28	5.99	5.12	7.17	5.61	5.44
% Bonus	45.16	36.60	53.84***	49.41	39.26***	46.01	44.49	45.05	45.65	49.80	40.75***	48.67	39.28***	45.86	44.15	46.14	40.09	43.03	46.12

In the completeness question, respondents are asked to describe their compensation package as either 1 (Objective and Formula-based) or 2 (Subjective and Discretionary). In the question about non-cash compensation, respondents are asked to provide a percentage. In the question about bonus percentage, respondents are asked to provide a percentage. We report the overall mean. ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. All table columns are defined in Table 1.

Table 5d. Survey responses (by client controls) to the other compensation questions including:

- How would you best describe the compensation package offered to you by your firm: Objective and Formula-based or Subjective and Discretionary?
- What percentage of your take-home pay is typically given in the form of non-cash compensation?
- In a typical year, what percentage of your take-home pay is your bonus?

Characteristic			(relative to Blend)			Client Age	
	Mean	Blend	Institution	Individual	Pooled Investment Vehicle	Young	Old
Completeness (objective/formulaic to subjective/discretionary)	1.54	1.57	0.01	-0.11	-0.03	1.52	1.58
% Non-cash compensation	5.46	5.19	1.53	-2.68	2.39	5.17	6.08
% Bonus	45.16	44.82	6.63	-14.10 ***	9.12	44.93	45.33

In the completeness question, respondents are asked to describe their compensation package as either 1 (Objective and Formula-based) or 2 (Subjective and Discretionary). In the question about non-cash compensation, respondents are asked to provide a percentage. In the question about bonus percentage, respondents are asked to provide a percentage. We report the overall mean. In the test of the effect of client age, ***, **, * denotes a significant difference at the 1%, 5%, and 10% level, respectively. A manager is assigned to a client-type if over 50% of the assets under his management are owned by that client-type. Managers for whom no client-type owns over 50% of the assets are considered Blend. The mean response for client-type Blend is reported, and a regession using separate dummy variables for all other groups is performed. ***, **, * denotes coefficient estimates that are significant at the 1%, 5%, and 10% level, respectively. All table columns not defined here are defined in Table 1.

A. Nonresponse Bias

We perform serveral experiments to investigate whether nonresponse bias might affect our results. The first experiment, suggested by Wallace and Mellor (1988), compares the responses for managers that completed the survey without being called (i.e., by May 30) to those that did not return the survey until we called them. The managers that did not respond until called can be though of as a sample from the nonresponse group, in the sense that they did not return the survey until we took the extra step of calling them.

We test, for each question, whether the mean response for the uncalled respondents differs from the mean for the called respondents. We analyze the same 26 compensation questions studied in Tables 2-5. The mean responses for the uncalled and called respondents are statistically indistinguishable for all questions.

The second experiment, suggested by Moore and Reichert (1983) investigates possible non-response bias by comparing characteristics of responding managers to characteristics of the population at large. If the characteristics of the two groups are the same, then the sample can be thought of as representative of the population.

Evidence on the personal characteristics of U.S. portfolio managers comes to us from AIMR (2003). According to AIMR, 88% of the portfolio managers had five or more years of experience. In our sample, it also was the case that 88% of the managers had five or more years of experience. Though we can not determine how many U.S. portfolio managers in AIMR's sample are women, AIMR (2003) reports that 17% of the investment management professionals they survey are women. In our portfolio manager-only sample, 10% are women. Along these dimensions at least, it appears that our sample is very similar to AIMR (2003).

Evidence on the population of managers we survey is also available. For each portfolio manager listed in S&P's *2002 Directory of Registered Investment Advisers*, we have information on the total assets managed at his firm. In principle, the dollar amount of assets managed at the firm of the random *manager* is larger (in expectation) than the dollar amount of assets

managed at the random *firm* because large firms employ more managers. So we first check to see whether this is true for our sample.

Since the distribution of firm assets is highly skewed, we use a bootstrap approach (n=10,000) to estimate the distribution of the median firm size in a sample of 396 firms drawn from the population of *firms*. The result of this experiment indicates that the median firm size in our sample is significantly larger than the median firm in the population ($4.4 billion vs. 0.8 billion, p-value:0). Clearly, we are getting multiple responses from large firms.

Finally, we test whether the median firm size in our sample differs from the median firm size in a sample of 396 managers drawn from the population of *managers*. The bootstrap results indicate that the median assets managed at the firms employing responding managers is on the small side ($4.4 billion vs. $5.8 billion), but well within conventional levels of statistical significance (p-value: 0.18), again indicating that the sample is representative of the population.

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