Fund Flows and Income Risk of Fund Managers*

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Abstract

We construct the first large-scale dataset linking the compensation and career outcomes of U.S. active equity mutual fund managers to administrative earnings records from the U.S. Census Bureau's LEHD data. Compensation is anchored primarily by fund scale: the elasticity of pay with respect to both AUM and fee revenue is about 0.18. Controlling for the mechanical effect through AUM, return performance affects pay mainly through bonuses rather than base pay. This distinction is important because the median bonus-to-pay ratio is 34%, which helps explain why return performance has limited additional explanatory power for total pay. Bonus shares are higher for managers who are more senior, more established, oversee larger funds, or have higher Morningstar ratings. Fund flows also matter beyond their effect through AUM: they affect compensation and strongly predict career outcomes. Large outflows raise the probability of turnover with a major compensation decline by about 4 percentage points. At the fund-family level, return performance and fund flows raise individual managers' base pay, but not bonuses.

Keywords: Fund managers, Manager compensation, Career concerns, Mutual fund flows, Fund performance, Labor economics. (**JEL:** G11, G23, J24, J31, J33, J44)

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1 Introduction

Delegated asset managers play a central role in modern financial markets. In the United States, mutual funds and other investment institutions manage a large share of household savings and hold a substantial fraction of the stock market(e.g., French, 2008). Their portfolio decisions therefore matter not only for investors' wealth, but also for asset prices more broadly. Yet despite a large literature on delegated asset management, we still know relatively little about a basic question: what determines the compensation of individual fund managers, and how do those incentives affect the risks they choose to take?

This question is important for asset pricing because delegated managers do not simply maximize investor utility. They operate under compensation contracts and career concerns that may place substantial weight on assets under management, fee revenue, and the investor flows that sustain those assets. As a result, the portfolio problem they face can differ substantially from the standard risk-return problem relevant for their clients. Managers may care not only about expected returns, but also about attracting and retaining capital, limiting redemption risk, and avoiding adverse career outcomes associated with severe outflows. Fund flows are therefore not merely an outcome of past performance. Rather, they become an endogenous state variable that shapes portfolio choice ex ante, with important implications for asset prices (e.g., Dou, Kogan and Wu, 2023).

Direct evidence on U.S. fund manager compensation, however, remains limited. Do compensation contracts reward fund size and capital retention? Do investor flows affect managers' income risk and career risk independently of return performance? More broadly, what economic forces are embedded in the labor contracts of active asset management?

This paper provides direct evidence on these questions. We begin with the universe of U.S. active equity mutual funds in CRSP and Morningstar and identify the individual managers running those funds. We then combine this information with public-record data that allow us to match managers to the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) data. The LEHD provides longitudinal earnings and employment histories covering the vast majority of U.S. employment from 1990 to 2022. Merging these records with fund-level data on AUM, returns, revenues, and investor flows yields a new panel that allows us to study the determinants of managers' total compensation, base pay, bonus compensation, and career transitions using realized earnings rather than disclosed contract language. The quarterly structure of the LEHD data is especially valuable because it allows us to identify bonus payments separately from regular salary and to measure the bonus share of total compensation directly. Our estimated

bonus-to-total-pay ratios line up closely with compensation structures described in fund filings, supporting the validity of the decomposition.

Our central finding is that the compensation of U.S. active equity mutual fund managers is anchored primarily by AUM and the fee revenue generated by those assets. Compensation is strongly and monotonically related to fund size, with a pronounced concave pattern. By contrast, the raw positive relation between compensation and return performance becomes much weaker once we control for AUM, indicating that much of the apparent pay-performance relation operates through the mechanical impact of fund returns on asset base. This result is important because it suggests that the core incentive in delegated asset management is not simply to generate returns in the abstract, but to generate and maintain a scalable revenue base. From the perspective of asset pricing, that distinction matters: a manager whose pay depends mainly on AUM has a direct private incentive to care about the fund flow that supports that AUM.

At the same time, our evidence does not imply that returns are irrelevant. Rather, it points to a more nuanced compensation structure. When we decompose total compensation into base pay and bonuses, return performance matters primarily through bonuses, whereas AUM and flows shape the broader compensation package more pervasively. This distinction is quantitatively important because bonuses account for only part of pay for the typical U.S. active equity mutual fund manager: the median bonus-to-pay ratio is about 34%, and the mean is about 43%, though there is substantial heterogeneity across managers and over time. Moreover, this decomposition helps reconcile different strands of the literature. On the one hand, our results are consistent with the idea that compensation is fundamentally tied to the asset base and the revenue it generates (e.g., Ibert et al., 2018). On the other hand, the stronger sensitivity of bonuses to return performance suggests that firms preserve a meaningful but limited performance-based component at the margin.

That heterogeneity is informative about incentive design. Bonus shares are higher for older managers, managers with longer tenure within the fund family, and managers with greater industry experience, indicating a stronger use of bonus-based incentives for more senior and more established managers. Bonus shares are also higher for managers with larger AUM and for Morningstar star managers, even after controlling for manager fixed effects, suggesting that bonus-based incentives are used more intensively when additional assets provide limited extra incentives because of decreasing returns to scale, or when managers' performance has stronger marketing and reputational value for the fund family.

Fund flows, however, play a particularly important role. Mechanically, flows matter because they affect AUM and therefore fee revenue. Our results show, however, that their importance extends beyond this

mechanical channel. Even after controlling for AUM, fund flows exert an additional and economically meaningful effect on manager compensation. In particular, flows remain strongly associated with bonus pay, and decompositions into systematic and idiosyncratic components show that both matter for managers' compensation. These findings suggest that compensation contracts reward not only the stock of delegated capital, but also the flow dynamics through which that capital is gained or lost. As a result, flows are central to delegated managers' private incentives and provide a natural microfoundation for why flow risk can shape portfolio demand and, ultimately, asset prices.

A second major contribution of the paper is to show that fund flows are also a central determinant of managers' career outcomes, in ways that return performance generally is not. Compensation is only one dimension of incentives in delegated management. Career concerns may be equally important, especially when poor outcomes trigger job loss or severely worse future career prospectus. Using the LEHD employment histories, we track managers before and after job changes and examine both the intensive margin and the extensive margin of career risk. Conditional on changing jobs, managers who previously experienced stronger inflows move to jobs with better subsequent pay, while those facing larger outflows experience substantially worse income outcomes after turnover. Likewise, outflows significantly increase the probability of turnover accompanied by a large pay cut, whereas strong inflows increase the probability of turnover associated with a large pay increase. In contrast, return performance has much weaker explanatory power for these downside and upside career outcomes.

These findings are asset-pricing relevant for a simple reason. A manager whose compensation and future labor-market prospects are exposed to investor flows has an incentive to care about flow risk directly, not merely through its correlation with returns. Such a manager may rationally avoid positions that are likely to trigger redemptions or that perform especially poorly when outflows intensify, even if those positions appear attractive from a pure expected-return perspective. Conversely, the manager may prefer holdings that help stabilize capital or appeal to investor clienteles. This creates a direct link from fund managers' labor-market incentives to portfolio demand and, ultimately, to asset prices.

Our evidence also sheds light on the organization of incentives within fund families. We find that family-level flows comove positively with managers' compensation growth, especially through base pay. This pattern suggests that compensation partly reflects a broader family-wide compensation pool and therefore incorporates an element of cross-manager risk sharing within the fund complex. That result connects naturally to the literature on competition and cooperation within mutual fund families, including cross-fund subsidization and family-level strategic interactions. It also reinforces the broader message

that managers' incentives are shaped not only by their own funds' performance, but also by the internal capital-allocation environment of the fund family.

A further contribution of the paper is methodological. The literature has had remarkably little direct evidence on the realized compensation of U.S. mutual fund managers. As a result, much of what we know about managerial incentives has been inferred from contract theory, fund behavior, or sparse disclosures in Statements of Additional Information (SAI). Our evidence suggests caution in relying on those disclosures at face value. Prior work using SAI language reports that many funds claim to base compensation on performance and relatively few explicitly state that compensation depends on AUM. Our results point in a different direction: realized compensation is strongly tied to AUM, while return performance matters more narrowly through bonuses. This discrepancy suggests that disclosed language should be interpreted carefully. It provides an incomplete, though still useful, source of information about fund manager compensation structures and is best complemented by direct evidence on realized compensation.

Related Literature. We discuss most closely related papers in greater detail when developing the hypotheses in Section 2. Here, we briefly summarize the remaining related literature.

Our paper contributes first to the literature on managerial incentives in delegated asset management. Because data on individual fund manager incentives are scarce, most of the existing literature studies advisory contracts between fund shareholders and investment advisors rather than the realized compensation of portfolio managers themselves (e.g., Starks, 1987; Grinblatt and Titman, 1989; Golec, 1992; Tufano and Sevick, 1997; Coles, Suay and Woodbury, 2000; Das and Sundaram, 2002; Deli, 2002; Elton, Gruber and Blake, 2003; Golec and Starks, 2004; Dass, Massa and Patgiri, 2008; Massa and Patgiri, 2009; Warner and Wu, 2011). Only a small number of papers examine compensation at the individual manager level. Ibert et al. (2018) assemble registry-based data on Swedish mutual fund managers and document a strong positive relation between pay and revenue, but only weak pay-performance sensitivity even after accounting for the indirect effect of performance through revenue. While their evidence is striking, it is unclear how well it generalizes to the much larger and institutionally different U.S. mutual fund industry. Ma, Tang and Gómez (2019) study compensation structure disclosures from Statements of Additional Information (SAIs) for U.S. open-end mutual funds from 2006 to 2011. They show that about 79% of funds disclose some link between manager compensation and investment performance. However, SAIs do not report compensation amounts, so they cannot reveal the magnitude of performance-sensitive pay, nor whether the disclosed language accurately reflects realized compensation in practice. Our paper complements both studies by

examining realized compensation amounts for U.S. mutual fund managers. We show that compensation is primarily anchored by fund AUM, with fund flows and performance affecting pay partly through their effects on AUM. In this respect, our evidence aligns more closely with Ibert et al. (2018) than with the picture suggested by self-disclosed SAI language. We also go beyond this literature by studying bonus pay separately from total compensation and by examining how performance, flows, and their systematic and idiosyncratic components affect compensation growth and career outcomes.

Our paper also contributes to the empirical labor literature on compensation contracts and the transmission of shocks to wages and employment. A central challenge in that literature is the difficulty of obtaining plausibly exogenous variation in workers' productivity, revenue, or profitability. Many studies, such as Guiso, Pistaferri and Schivardi (2005) and Card, Cardoso and Kline (2016), rely on timing assumptions about the stochastic process for firm performance and use lagged outcomes as instruments. Other papers, including Abowd and Lemieux (1993) and Card, Devicienti and Maida (2014), use industry-level shocks as instruments. But such shocks may fail to satisfy the exclusion restriction, especially when labor supply to the sector is inelastic or when industry shocks affect workers' outside options through general equilibrium adjustments. Our setting offers an unusually attractive environment for studying compensation contracts because the mutual fund industry is one of the few professional service sectors in which individual output can be measured with relatively high precision. Moreover, we can generate plausibly exogenous variation in fund revenue that is orthogonal to managers' perceived skill. This allows us to provide causal evidence on how revenue shocks pass through to the realized compensation of high-skill workers.

Finally, our paper contributes to the literature on the effects of fund performance and fund flows on managers' career outcomes. Hu, Hall and Harvey (2000) study 307 managerial changes from 1976 to 1996 and find that performance is positively associated with promotions and negatively associated with demotions, whereas fund flows do not significantly predict either outcome. Using U.S. equity funds from 1995 to 2002, Evans (2006) likewise finds that return alphas predict promotions and demotions, while flows do not; however, flows do predict fund terminations, after which managers often leave the fund family. Using a broader sample, Barber, Scherbina and Schlusche (2017) confirm that performance strongly predicts career outcomes and also document a meaningful role for fund flows. Our paper extends this literature by bringing in realized compensation after job turnover. We show that, unlike return performance, fund flows are a major determinant of managers' subsequent income outcomes, especially on the downside. In this sense, flows matter not only for compensation within a job, but also for the labor-market consequences of losing one.

2 Hypothesis Development

2.1 AUM as the Primary Determinant of Manager Compensation

Existing theories of mutual fund manager compensation primarily focus on the advisory contract between investors and fund companies, typically assuming perfect alignment between the fund company and its managers. This assumption effectively equates the advisory contract with the compensation contract. An insightful benchmark is provided by Berk and Green (2004), who analyze a rational-expectations setting with no agency frictions between investors, fund companies, and managers. In their framework, which features decreasing returns to scale, investor flows efficiently chase ex-ante excess returns, acting as a disciplining mechanism that ensures AUM fully captures managerial skill and effort. This benchmark suggests that both the fund company's fee revenue and its managers' compensation should be structured as a fraction of AUM.

Incorporating moral hazard arising from hidden portfolio choices by fund companies (and their fund managers), Ou-Yang (2003) derives the optimal compensation contract, which combines a fraction-of-AUM fee with a symmetric bonus-and-penalty component around a benchmark portfolio, often referred to as a fulcrum fee.[1] And yet, few retail mutual funds charge fulcrum fees, due to regulatory complexity and limited demand.[2]

However, contrary to the theoretical implications of Berk and Green (2004) and Ou-Yang (2003), Ma, Tang and Gómez (2019) hand-collect self-disclosed binary indicators of whether individual fund managers' bonuses are explicitly linked to the AUM they oversee, based on the limited compensation information provided in Statements of Additional Information (SAIs) filed with the SEC. They report that only 19.6% of managers have bonuses explicitly linked to AUM and interpret this as evidence that AUM plays little role in determining fund managers' compensation, explicitly stating that "contrary to the pattern in advisory contracts, portfolio manager compensation is generally not explicitly tied to the fund's AUM." This interpretation may reflect the nature of the information disclosed in SAIs, which are typically sparse and qualitative and often do not restate obvious or standard information that regulators and investors already take for granted (e.g., that AUM plays a central role in fee revenue and thus in compensation). Moreover, their conclusion contrasts with basic industry knowledge and with detailed administrative evidence from Swedish data, which documents the central role of AUM in determining managers' compensation (Ibert

[1] Mutual funds may charge performance-based fees only through fulcrum fees. Asymmetric fees are prohibited for retail funds, as they can encourage excessive risk-taking and undermine investor protection.

[2] According to Elton, Gruber and Blake (2003), the number of U.S. mutual funds with fulcrum incentive fees ranged from 40 in 1990 to 108 in 1999.

et al., 2018).

Below, **Hypothesis 1(a)** presents an extreme benchmark scenario regarding the relationship between AUM and manager compensation, positing that AUM has an insignificant effect on compensation. This view, explicitly advanced by Ma, Tang and Gómez (2019), stands in sharp contrast to prevailing industry understanding and to other studies with detailed evidence on fund manager compensation (e.g., Ibert et al., 2018).

Hypothesis 1(a). *Manager compensation, especially bonuses, is not systematically tied to AUM.*

In contrast, **Hypothesis 1(b)** below presents an alternative benchmark scenario regarding the role of AUM in determining manager compensation, positing that AUM is a sufficient observable statistic that fully subsumes the effects of past returns and flows on manager compensation. This view is supported by theoretical studies, including Berk and Green (2004), as well as empirical work such as Ibert et al. (2018).

Hypothesis 1(b). *Manager compensation is determined by AUM, with returns and flows affecting compensation only through their effect on AUM. Equivalently, conditional on AUM, past returns and flows have no additional effect on manager compensation.*

Even if **Hypothesis 1(b)** holds, it remains unclear whether AUM is a truly sufficient statistic for all underlying determinants of fund managers' compensation, not only past returns and flows. For example, Berk, van Binsbergen and Liu (2017) investigate whether fund companies create value by reallocating capital across managers and whether such value reflects private information about managers' latent skill that is unobservable to outside investors beyond past AUM, revenue, returns, and flows. This latent skill includes not only stock selection, market timing, and portfolio construction that drive return performance and value added for investors, and reputation or relationship management that attract flows for fund families, but also risk management ability, leadership, organizational and team skills, and behavioral discipline. Given that fund companies possess valuable private information about managers' latent skill and that reallocating capital across managers is highly frictional, managers' compensation is systematically influenced by this latent skill in ways that are not fully captured by past AUM, revenue, returns, or flows.

Importantly, although latent skill is not directly observable to econometricians, it is, by definition, expected to be positively associated with the long-run level of AUM managed by individual fund managers in the cross section. Managers with higher latent skill tend to attract more investor flows and receive greater within-family capital reallocations, both of which increase their long-run AUM. This relationship is formally stated in Hypothesis 1(c).

Hypothesis 1(c). *Beyond what is captured by past AUM, revenue, returns, and flows, fund managers' compensation is systematically shaped by their latent skill, which is, by definition, positively associated with the long-run level of AUM across managers.*

In Section 6.1, our empirical analysis of the roles of AUM, returns, and flows in determining compensation strongly rejects **Hypothesis 1(a)** and provides robust support for **Hypothesis 1(b)**, with one systematic exception: fund flows exert significant additional positive effects on compensation, raising both base pay and bonuses beyond what is captured by AUM. Moreover, we present direct empirical evidence that strongly supports **Hypothesis 1(c)**, showing that managers' compensation is significantly influenced by latent skill unobserved by econometricians, and that long-run AUM is positively associated with this latent skill as perceived by fund families.

2.2 Bonuses as Incentive Pay Linked to Returns

There is ongoing debate over whether fund managers receive a material bonus component tied to benchmark-relative performance that induces asymmetric pay-for-performance sensitivity, with compensation responding weakly when (relative) returns are at low levels and strongly when they are at high levels, even though asymmetric performance fees are prohibited in advisory contracts between investors and fund companies under U.S. regulations.

On the one hand, if fund flows across funds reliably reflect managers' skill and effort in producing superior excess returns, they can impose meaningful discipline on fund managers (e.g., Berk and Green, 2004). In that case, introducing additional asymmetric incentives through cash bonuses, beyond what is already captured by AUM, would be inefficient and could instead encourage risk-shifting that harms investor welfare. Even when return-chasing flows are not sufficient to provide full discipline, fund companies can reallocate AUM internally to reward effort and skill (Berk, van Binsbergen and Liu, 2017), further reducing the role for bonus-based incentives.

On the other hand, while few theoretical studies explicitly model the optimal compensation contract between fund companies and their managers, it is widely recognized that potential shirking of managers cannot be fully disciplined by fund flows, owing to their noisiness, or by internal AUM reallocation, owing to reallocation frictions. Consequently, mitigating managerial moral hazard may require compensation schemes that incorporate asymmetric bonuses tied to excess returns relative to a benchmark. This view is consistent with optimal contracting frameworks in related settings, between fund companies and managers (e.g., Pegoraro, 2023), and between investors and fund companies (e.g., Ou-Yang, 2003; Li and Tiwari, 2009).

Despite this prevailing view, direct theoretical models and empirical evidence on bonus structures remain limited. A long-standing literature has examined risk-shifting behavior among fund managers to infer indirectly whether compensation involves bonuses and whether those bonuses depend on excess returns relative to a benchmark (e.g., Brown, Harlow and Starks, 1996; Chevalier and Ellison, 1997, 1999; Stein, 2005). More recent studies, such as Huang, Sialm and Zhang (2011) and Lee, Trzcinka and Venkatesan (2019), suggest that such risk-shifting likely stems from asymmetric incentives tied to benchmark-relative returns, generating inefficiencies for investors. Notably, Lee, Trzcinka and Venkatesan (2019) hand-collected dummy variables on whether bonuses were tied to fund return performance, made possible by the SEC's 2005 disclosure requirement for SAIs. Using matched LEHD data, we can measure not only whether bonuses are paid but also their dollar values, and our measures closely align with theirs along the extensive margin (i.e., whether bonuses are paid). Importantly, Lee, Trzcinka and Venkatesan (2019) find no evidence of risk-shifting behavior among funds that report not offering cash bonuses tied to return performance.

Below, **Hypothesis 2(a)** sets out a benchmark for how return performance and AUM determine manager base pay and bonuses. On the one hand, for base pay, the hypothesis posits that AUM is a sufficient observable statistic, in the sense that it fully captures the effects of past returns. This view is consistent with indirect evidence from Lee, Trzcinka and Venkatesan (2019), who find that risk-shifting behavior is insignificant among funds reporting that they do not offer bonuses tied to relative returns. On the other hand, for bonuses, the hypothesis posits that while AUM remains the primary determinant, return performance also has an incremental effect beyond its influence through AUM. This perspective aligns with theoretical work on optimal compensation contracts (e.g., Pegoraro, 2023). The strong dependence of bonuses on AUM reflects the practical reality that, at many firms, bonus levels are tied to fund revenues, which are in turn largely driven by AUM, a pattern that stands in sharp contrast to the claim in Ma, Tang and Gómez (2019).

Hypothesis 2(a). *Manager base pay depends primarily on AUM, with returns affecting it only through their effect on AUM. Equivalently, conditional on AUM, past returns have no further impact on base pay, implying that positive and negative return performance have largely symmetric effects on base pay through AUM. In contrast, while bonuses are also largely determined by AUM, returns exert a direct effect beyond their impact through AUM. This direct effect on bonuses is asymmetric, with bonuses responding more strongly to positive than to negative return performance.*

In Section 6.2, our direct empirical evidence based on managers' base pay and bonuses, as well as various return performance measures provides robust support for **Hypothesis 2(a)**.

Moreover, closely related to Hypothesis 2(a), linking bonuses to return performance relative to bench-

marks can induce risk-shifting behavior by fund managers, which is detrimental to both fund families and their clients (e.g., Huang, Sialm and Zhang, 2011; Lee, Trzcinka and Venkatesan, 2019). From a theoretical perspective, optimal compensation contracts therefore incorporate penalties for excessive risk taking. In practice, such risk taking is commonly proxied by tracking error, which captures the volatility of active returns relative to a benchmark. This theoretical implication motivates the following hypothesis:

Hypothesis 2(b). *Active fund managers' compensation is negatively related to their tracking error.*

Our empirical findings in Section 6.2 provide strong support for this hypothesis.

Finally, **Hypothesis 2(c)** below proposes that the bonus fraction of total compensation increases with manager age (tenure and experience), AUM, ratings, and activeness. Fund companies typically use two primary mechanisms to provide incentives to their managers: reallocation of AUM accompanied by an increase in base pay, and performance-based cash bonuses tied to benchmark-relative returns.

First, younger fund managers tend to receive a lower bonus share of their total compensation. Prior studies (e.g., Brown, Harlow and Starks, 1996; Chevalier and Ellison, 1997; Huang, Sialm and Zhang, 2011; Lee, Trzcinka and Venkatesan, 2019) show that younger managers, proxied by age or fund track record, face stronger career and survival concerns. To secure their positions and increase pay, they are more likely to take on risk, displaying a greater propensity for risk shifting. To counteract these concerns, fund companies often find it optimal to incentivize younger managers through AUM reallocations, which raise base pay, rather than through one-time, irreversible cash bonuses.

Second, fund managers of smaller funds tend to receive a lower bonus share of their total compensation. As shown in prior studies mentioned above, these managers are more likely to take on risk and exhibit a stronger propensity for risk shifting. Consequently, fund companies often find it optimal to incentivize small-fund managers through AUM reallocations. By contrast, because fund-level performance exhibits strong decreasing returns to scale (e.g., Berk and Green, 2004), it is more effective to incentivize managers overseeing large AUM with cash bonuses rather than by assigning them substantially more AUM. Moreover, since large-fund managers generally have weaker incentives or face greater frictions in exerting high effort to generate superior returns (e.g., Chen et al., 2004), fund companies have a stronger incentive to provide return-performance-based cash bonuses to these managers, particularly those overseeing star funds.

Third, fund managers of star funds tend to receive a higher bonus share of their total compensation. This is because strong performance by star funds boosts not only their own inflows but also those of other funds in the same family (e.g., Nanda, Wang and Zheng, 2004; Wang, 2024). As a result, fund companies find it more effective to provide substantial cash bonuses to incentivize star managers to sustain superior

performance, rather than imposing additional AUM on them, since star funds are already very large and try to mitigate the effect of decreasing return to scale on return performance.

Fourth, fund managers who pursue more active portfolio strategies tend to receive a higher bonus fraction of their total compensation. This is because fund companies typically tie incentive pay more closely to benchmark-relative returns when managers are permitted to take on greater active risk. Since the return performance of active strategies are especially vulnerable to fund size, reallocating substantially more AUM is less effective as an incentive. Instead, fund companies compensate active managers with a higher bonus share, more strongly linked to return performance.

Hypothesis 2(c). *Fund managers with higher age, longer tenure, greater experience, larger AUM, star ratings, and more active portfolio strategies tend to receive a higher bonus fraction in their total compensation. Furthermore, managers with star ratings and high activeness tend to have compensation that is more strongly tied to their return performance than that of other managers, even after controlling for AUM or revenue.*

In Section 6.2, our direct empirical evidence strongly supports **Hypotheses 2(c)**.

2.3 Fund Flows as a Key Driver of Compensation and Career Outcomes

Some existing research finds that fund flows are driven largely by marketing, sales, and distribution channels rather than, or in addition to, managers' ability to generate excess returns (Gallaher, Kaniel and Starks, 2009; Ibert et al., 2018; Roussanov, Ruan and Wei, 2021). In this context, manager-specific reputation and relationships play a critical role beyond past return performance. For example, when a well-recognized manager departs, especially a star manager, the original fund typically experiences substantial outflows over the following year, with investor capital migrating to the new fund led by the departing manager (e.g., Khorana, 2001). Unlike returns, fund flows are far more persistent at the manager level, reflecting a persistent "skill" in attracting investor capital. Accordingly, fund companies often find it optimal to reward this persistent skill through higher base pay rather than one-time cash bonuses. **Hypothesis 3(a)** summarizes the role of fund flows in determining fund managers' base pay and bonus.

Hypothesis 3(a). *Fund flows have an additional effect on base pay, but not on bonuses, beyond the effect of AUM. This pattern contrasts with that hypothesized for return performance in* ***Hypothesis 2(a)****. The additional effect on base pay is sufficiently strong to remain significant for total compensation on average.*

In Section 6.1, our direct empirical evidence strongly supports **Hypothesis 3(a)**.

Hypothesis 3(b). *Fund flows have, on average, a strong positive effect on fund managers' turnover outcomes, whereas return performance has little effect.*

In Section 6.3, our direct empirical evidence strongly supports **Hypothesis 3(b)**.

2.4 Family-Level Returns and Flows as Determinants of Compensation

There has been an ongoing debate over whether mutual fund families incorporate cross-manager risk sharing into individual compensation or instead rely on tournament-style incentives across managers, and, if both forces coexist, whether compensation schemes tilt primarily toward risk sharing or toward pure tournaments.[3] The unique US mutual fund manager compensation data assembled in our paper allow us to provide direct and transparent empirical evidence that speaks to this debate.

While mutual fund managers operate in a tournament-like industry, with bonuses often tied to excess return performance relative to market or Morningstar benchmarks, compensation design within a fund family is widely argued to emphasize risk sharing across managers and the smoothing of idiosyncratic return shocks, thereby attenuating internal tournament incentives (e.g., van Nieuwerburgh and Veldkamp, 2010). The core rationale is that realized returns are noisy signals of managers' costly information acquisition. In such settings, concave compensation schemes are required to preserve efficient learning incentives. As shown by van Nieuwerburgh and Veldkamp (2010), tournament-style payoffs can distort information acquisition by exposing managers excessively to idiosyncratic risk.

Relatedly, He and Xiong (2013) show that greater managerial flexibility weakens the link between return performance and effort, thereby increasing agency costs. In particular, convex, tournament-style incentives encourage managers to substitute productive effort with luck-seeking behavior and tail-risk exposure. As a result, optimal compensation contracts rely on enforced mandates, including benchmarking requirements, tracking-error penalties, and implicit insurance, rather than on rank-based tournaments across managers within a fund family. Strong heterogeneous mandates lead to risk sharing and implicit insurance cross managers of different mandates and styles.

Finally, fund manager compensation is determined through a fund-family-level compensation pool, in part because clients tend to reallocate capital across funds with different asset classes, styles, sizes, and other characteristics within the same family. While the existing literature emphasizes cross-manager risk sharing in return performance, it largely overlooks risk sharing in fund flows. If compensation is pooled at

[3]Previous studies document cross-fund subsidization phenomena (e.g., Gaspar, Massa and Matos, 2006; Bhattacharya, Lee and Pool, 2013) and show the existence of both competition and cooperation within mutual fund families (e.g., Evans, Prado and Zambrana, 2020).

the family level and determined by family revenues, risk sharing should apply to both returns and flows, implying that compensation smoothing with respect to fund flows should be clearly reflected in the data, just as for return performance.

Motivated by this theoretical insight, we distill the debate into the following testable hypothesis.

Hypothesis 4. *Family-level fund flows have an additional effect on individual managers' base pay, but not on bonuses, beyond the effects of managers' own returns and flows. By contrast, family-level return performance does not have a significant effect on either individual managers' base pay or bonuses.*

In Section 6.4, our direct empirical evidence strongly supports **Hypothesis 4**.

3 Econometric Setup

Theory-Implied Compensation Contract Form. According to theoretical developments in the existing literature, a fund manager's compensation contract can be approximated as:

$$\ln(Pay_{m,t}) = \eta_{m,t} + \gamma_m \ln(\widehat{A}_{m,t-1}) + \sum_{\tau=1}^{h} \gamma^R_{m,\tau} \ln(1 + R_{m,t-\tau}) + \sum_{\tau=1}^{h} \gamma^F_{m,\tau} \ln(1 + Flow_{m,t-\tau}), \tag{3.1}$$

where $Pay_{m,t}$ is the total compensation received by manager m in year t, and $\widehat{A}_{m,t-1}$ is the effective AUM size overseen by manager m in year $t-1$. The variable $R_{m,t-\tau}$ is the return generated by manager m, and $Flow_{m,t-\tau}$ is the flow generated by manager m. Not only defined as gross returns, returns may be defined relative to benchmarks or adjusted for exposures to standard risk factors.

The effective AUM size, $\widehat{A}_{m,t-1}$, is defined as:

$$\widehat{A}_{m,t-1} \equiv S^{1-\alpha_m}_{m,t-1} A^{\alpha_m}_{m,t-1}. \tag{3.2}$$

where $A_{m,t}$ is the AUM of publicly traded mutual fund shares under the supervision of manager m, $S_{m,t}$ is the size of all separately managed accounts supervised by manager m, and α_m denotes the share of publicly traded mutual fund AUM in the effective AUM measure.

The coefficient $\eta_{m,t}$ captures potential latent skill that affects the manager's pay beyond what is reflected in separately managed accounts and what is observable from past AUM, revenue, returns, and flows. For simplicity, we assume that the coefficients γ_m, γ^R_m, γ^F_m, and α_m vary across managers but remain constant

over time, as the paper focuses on estimating the average effects of these determinants on manager pay, while also examining heterogeneous effects across different groups of managers.

Dynamic Regressions for Manager Pay and Co-integrated Drivers. Building on (3.1), we set up the econometric framework by introducing two innocuous assumptions: (i) $S_{m,t} = e^{s_m+\iota_t+u_{m,t}}A_{m,t}$, and (ii) $\eta_{m,t} = \kappa_m + \zeta_t + e_{m,t}$, where both $u_{m,t}$ and $e_{m,t}$ have zero mean, may exhibit persistence over time, and are independent of $A_{m,t}$, $R_{m,t}$, and $Flow_{m,t}$. The terms s_m and κ_m capture manager fixed effects, while ι_t and ζ_t capture time fixed effects, both conceptually and econometrically.

Then, the compensation specification in (3.1) can be rewritten as the following dynamic ordinary least square (DOLS) regression for co-integrated processes $\ln(Pay_{m,t})$ and $\ln(A_{m,t-1})$:

$$\begin{aligned}\ln(Pay_{m,t}) = \theta_m + \delta_t + \gamma \ln(A_{m,t-1}) \\ + \sum_{\tau=1}^{h} \gamma_\tau^R \ln(1+R_{m,t-\tau}) + \sum_{\tau=1}^{h} \gamma_\tau^F \ln(1+Flow_{m,t-\tau}) + \varepsilon_{m,t},\end{aligned} \tag{3.3}$$

where $\theta_m \equiv \kappa_m + (1-\alpha_m)s_m$ captures manager fixed effects, $\delta_t \equiv \zeta_t + (1-\alpha_m)\iota_t$ captures time fixed effects, γ captures the average overall sensitivity to the AUM of publicly traded mutual fund shares, γ_τ^R and γ_τ^F capture the average sensitivity to return performance and fund flows, respectively, and $\varepsilon_{m,t} \equiv e_{m,t} + (1-\alpha_m)u_{m,t}$ has zero mean, may exhibit persistence over time, and is independent of $A_{m,t}$, $R_{m,t}$, and $Flow_{m,t}$.[4]

We define the bonus-to-total-pay ratio as $Bonus_Frac_{m,t} = Bonus_{m,t}/Pay_{m,t}$. The econometric specification for $Bonus_Frac_{m,t}$ is assumed to be

$$\begin{aligned}\ln(Bonus_Frac_{m,t}) = b_m + \varsigma_t + \rho \ln(A_{m,t-1}) \\ + \sum_{\tau=1}^{h} \rho_\tau^R \ln(1+R_{m,t-\tau}) + \sum_{\tau=1}^{h} \rho_\tau^F \ln(1+Flow_{m,t-\tau}) + v_{m,t},\end{aligned} \tag{3.4}$$

where ρ, ρ_τ^R, and ρ_τ^F denote the average sensitivity coefficients, and the error term $v_{m,t}$ has zero mean, may exhibit persistence over time, and is assumed independent of $A_{m,t}$, $R_{m,t}$, and $Flow_{m,t}$. Thus, by combining

[4]When bringing the econometric specification in (3.3) to the data, contemporaneous and lead returns and flows can also be incorporated into the regression.

(3.3) and (3.4), we can obtain the DOLS regression for $\ln(Bonus_{m,t})$ as follows:

$$\ln(Bonus_{m,t}) = \vartheta_m + \eta_t + \beta \ln(A_{m,t-1}) + \sum_{\tau=1}^{h} \beta_\tau^R \ln(1 + R_{m,t-\tau}) + \sum_{\tau=1}^{h} \beta_\tau^F \ln(1 + Flow_{m,t-\tau}) + \epsilon_{m,t}, \tag{3.5}$$

where the manager fixed effect is $\vartheta_m \equiv \theta_m + b_m$, the time fixed effect is $\eta_t \equiv \delta_t + \varsigma_t$, the average sensitivity coefficient to AUM is $\beta \equiv \gamma + \rho$, the average sensitivity coefficients to past returns are $\beta_\tau^R \equiv \gamma_\tau^R + \rho_\tau^R$ with $\tau = 1, \cdots, h$, the average sensitivity coefficients to past flows are $\beta_\tau^F \equiv \gamma_\tau^F + \rho_\tau^F$ with $\tau = 1, \cdots, h$, and the error term $\epsilon_{m,t} \equiv \varepsilon_{m,t} + v_{m,t}$ has zero mean, may exhibit persistence over time, and is independent of $A_{m,t}$, $R_{m,t}$, and $Flow_{m,t}$.

Let $\bar{b}_m < 0$ be the long-term steady state of $\ln(Bonus_Frac_{m,t})$. Using a Taylor expansion, we obtain the following approximation:

$$\ln(Base_Pay_{m,t}) = \mu_m + \xi_t + \varphi \ln(A_{m,t-1}) + \sum_{\tau=1}^{h} \varphi_\tau^R \ln(1 + R_{m,t-\tau}) + \sum_{\tau=1}^{h} \varphi_\tau^F \ln(1 + Flow_{m,t-\tau}) + z_{m,t}, \tag{3.6}$$

where $\mu_m \approx \theta_m + \ln(1 - e^{\bar{b}_m}) + \kappa_m(b_m - \bar{b}_m)$ with $\kappa_m \equiv e^{\bar{b}_m}/(e^{\bar{b}_m} - 1)$, and $\xi_t \approx \delta_t + \bar{\kappa}\varsigma_t$ with $\bar{\kappa}$ denoting the cross-sectional average of κ_m. The coefficients φ, φ_τ^R, and φ_τ^F capture average sensitivities to AUM, returns, and flows, respectively, while the error $z_{m,t}$ has zero mean, may be serially correlated, and is independent of $A_{m,t}$, $R_{m,t}$, and $Flow_{m,t}$. Further details on these coefficients and on $z_{m,t}$ are provided in Online Appendix.

Error Correction Models for Changes in Manager Pay. According to the co-integration relationships captured by the DOLS regressions in (3.3), (3.5), and (3.6), the econometric specifications for explaining percentage changes in managers' total pay, bonus, and base pay should be formulated as the corresponding error correction models (ECM) for co-integrated time series. This approach follows the standard framework of Engle and Granger (Engle and Granger, 1987), which employs ECMs to capture co-integration relationships and address the associated econometric issues. Specifically, we consider the following panel regression:

$$\Delta \ln(Pay_{m,t}) = c_m + h_t + \phi\left[\ln(Pay_{m,t-1}) - \gamma \ln(A_{m,t-2})\right] + \psi \Delta \ln(A_{m,t-1}) + \widetilde{\varepsilon}_{m,t}, \tag{3.7}$$

where $Pay_{m,t}$ is the total compensation of manager m in year t, $A_{m,t}$ is the AUM of all funds overseen by m in year t, $\Delta \ln(Pay_{m,t}) = \ln(Pay_{m,t}/Pay_{m,t-1})$ is the year-over-year percentage change in pay, and $\Delta \ln(A_{m,t-1}) = \ln(A_{m,t-1}/A_{m,t-2})$ is the percentage change in year-end AUM from the previous year. Importantly, the term $\ln(Pay_{m,t-1}) - \gamma \ln(A_{m,t-2})$ captures the short-run deviation from the long-run equilibrium relationship between compensation and AUM implied by the co-integration framework.

The period-to-period change in log AUM on the right-hand side of (3.7), $\Delta \ln(A_{m,t-1})$, is driven by three components: the fund return in year $t-1$, $\ln(1+R_{m,t-1})$; the fund flow in year $t-1$, $\ln(1+Flow_{m,t-1})$; and the AUM reallocation for manager m within the fund family during year $t-1$. This accounting identity can be approximated as

$$\Delta \ln(A_{m,t}) \approx o^R \ln(1+R_{m,t}) + o^F \ln(1+Flow_{m,t}) + AUM_Reallocation_{m,t}, \tag{3.8}$$

where o^R and o^F are approximation constants.

According to the panel DOLS co-integration model (3.3), the short-run deviation from the long-run co-integrated equilibrium, given by $\ln(Pay_{m,t-1}) - \gamma \ln(A_{m,t-2})$, may depend on past return performance and fund flows. By substituting the DOLS representation of this deviation from (3.3) together with the approximate accounting identity (3.8) into (3.7), the relationship between changes in manager pay, past returns, and past flows can be approximated by the regression

$$\Delta \ln(Pay_{m,t}) = \omega_m + \chi_t + \sum_{\tau=1}^{h} \psi_\tau^R \ln(1+R_{m,t-\tau}) + \sum_{\tau=1}^{h} \psi_\tau^F \ln(1+Flow_{m,t-\tau}) + Res_{m,t}, \tag{3.9}$$

where the composite error term $Res_{m,t}$ collects (i) $\varepsilon_{m,t}$ from (3.3), (ii) $\widetilde{\varepsilon}_{m,t}$ from (3.7), and (iii) the effect of AUM reallocations across managers within a fund family, also defined in (3.8). Analogous ECMs for $\Delta \ln(Bonus_{m,t})$ and $\Delta \ln(Base_Pay_{m,t})$ follow directly from the panel DOLS co-integration models (3.5) and (3.6), together with the approximate accounting identity (3.8).

Mapping Hypotheses 1(a) & 1(b) to Econometric Specifications. We first discuss empirical formulations regarding **Hypotheses 1(a)** and **1(b)**, concerning the role of AUM in determining fund managers' compensation. Under the econometric specification, **Hypothesis 1(a)** posits that $\gamma = 0$ in regression (3.3) and $\beta = 0$ in regression (3.5). It further implies that, conditional on manager-year observations with $AUM_Reallocation_{m,t} = 0$ (i.e., no within-family AUM reallocation for manager m in year t), including $\Delta \ln(A_{m,t-1})$ on the right-hand side of regression (3.9) should not eliminate the significance of the estimated

average sensitivity coefficients with respect to past return performance, $\ln(1+R_{m,t-\tau})$, and past fund flows, $\ln(1+Flow_{m,t-\tau})$.

In contrast, **Hypothesis 1(b)** states that $\gamma > 0$ and $\gamma_\tau^R = \gamma_\tau^F = 0$ for all τ in regression (3.3). It further implies that, conditional on manager-year observations with $AUM_Reallocation_{m,t} = 0$, including $\Delta \ln(A_{m,t-1})$ in regression (3.9) would eliminate the statistical significance of the estimated average sensitivity coefficients with respect to past return performance, $\ln(1+R_{m,t-\tau})$, and past fund flows, $\ln(1+Flow_{m,t-\tau})$.

Mapping Hypotheses 1(c) to Econometric Specifications. We next consider the econometric implications of **Hypothesis 1(c)**, which concerns the role of managers' latent skill beyond what is captured by past AUM, revenue, returns, and flows. This hypothesis posits that the manager fixed effect, θ_m, in the DOLS regression (3.3) captures economically meaningful latent attributes and explains a substantial fraction of the variation in $\ln(Pay_{m,t})$. Moreover, θ_m is expected to be positively correlated with a_m, defined as the time-series average of $\ln(A_{m,t})$ for manager m.

Accordingly, **Hypothesis 1(c)** implies that the R^2 of the DOLS regression (3.3) should increase significantly when the manager fixed effect θ_m is included, and that the estimated fixed effects satisfy $\text{Cov}(a_m, \theta_m) > 0$. This cross-manager covariance can be captured by the difference between the DOLS estimators of the sensitivity with and without controlling for manager fixed effects θ_m in (3.3). To be more precise, let $\widehat{\gamma}$ be the DOLS estimator with controlling for θ_m in (3.3), and $\widetilde{\gamma}$ be the DOLS estimator without controlling for θ_m in (3.3). It can be shown that (see Online Appendix)

$$\widetilde{\gamma} - \widehat{\gamma} \approx \frac{\text{Cov}\,(a_m, \theta_m)}{E\,[var_m]}, \tag{3.10}$$

where var_m is the time-series variance of $\ln(A_{m,t})$ for manager m. Thus, if substantial latent skills such as communication ability, team management, risk control, long-term investment vision, and work ethic are unobserved by the econometrician but are captured by the manager fixed effect θ_m, which by positively correlated with the long-run average of log AUM, a_m, across managers. In this case, omitting manager fixed effects will cause the DOLS estimators of the AUM sensitivity coefficient to be upward biased; that is, $\widetilde{\gamma} > \widehat{\gamma}$.

Importance of Recognizing Co-integration Relationships. Importantly, it is essential to recognize that the log levels of a manager's compensation, fee revenue, and AUM share common stochastic trends. Their period-to-period changes are largely driven by the same stationary processes, such as portfolio returns and

fund flows for the same manager within a given period. Therefore, to accurately estimate and infer the co-integration coefficients that characterize the long-run equilibrium relationship between compensation and fee revenue (or AUM), one should not directly regress log compensation on log fee revenue (or log AUM). Such regressions generate spurious correlation and nonstandard asymptotic distributions of the estimators (e.g., Granger and Newbold, 1974; Phillips, 1986). In particular, the t-statistics on the OLS-estimated co-integration coefficients are typically overstated, as Cen et al. (2024) show in documenting similar econometric specification errors in related studies on fund manager compensation.

To address these empirical and econometric challenges, we employ the panel dynamic ordinary least squares (panel DOLS) estimator, coupled with heteroskedasticity- and autocorrelation-consistent (HAC) standard errors. The DOLS methodology for estimating co-integration coefficients originates from Stock and Watson (1993).[5] Under DOLS, the t-statistics for the estimated co-integration coefficients have the correct asymptotic distribution. Instead of relying on the lead and lag of period-to-period changes in log revenue (or log AUM) in the panel DOLS regression, we utilize the corresponding return performance and fund flow of the same fund manager, the primary underlying drivers of these period-to-period changes in log revenue (and log AUM), as specified in equations (3.3), (3.5), and (3.6).

Mapping Hypotheses 2(a), 2(b), & 2(c) to Econometric Specifications. Second, we develop the empirical specifications corresponding to **Hypotheses 2(a)**, **2(b)**, and **2(c)**, which concern the bonus component of fund manager compensation. These hypotheses characterize how bonuses respond to relative return performance, how this sensitivity varies across managers, and how tracking error enters compensation design as a penalty for excessive risk taking.

Under the econometric specification, **Hypothesis 2(a)** posits that $\beta > 0$ and $\beta_\tau^R > 0$ for at least one $\tau = 1$ in regression (3.5), while $\varphi > 0$ and $\varphi_\tau^R = 0$ for all τ in regression (3.6). Furthermore, **Hypothesis 2(a)** implies that when the dependent variable in regression (3.9) is replaced by $\Delta \ln(Base_Pay_{m,t})$, the estimated average sensitivity coefficients to return performance should remain significantly positive and of similar magnitudes for both negative and positive return performance realizations. In contrast, when the dependent variable is replaced by $\Delta \ln(Bonus_{m,t})$, the estimated average sensitivity coefficients to return performance should be significantly positive for positive return realizations but statistically indistinguishable from zero for negative ones.

[5]The HAC standard errors are computed using two-way cluster-robust standard errors, as described in Thompson (2011). This method provides a more reliable approach than the conventional sandwich estimator, particularly when the cross-sectional dimension of the panel is much larger than its time dimension (e.g., Stock and Watson, 2008).

Turning to the role of tracking error, **Hypothesis 2(b)** posits that compensation is decreasing in tracking error, reflecting penalties for excessive risk taking. Empirically, this implies that the coefficient on tracking error should be significantly negative when tracking error is added as an explanatory variable on the right-hand side of the DOLS regression (3.3), conditional on controlling for fee revenue (or AUM), return performance, and fund flows.

Regarding heterogeneity in bonus-to-total-pay ratios across fund managers, **Hypothesis 2(c)** suggests that the manager fixed effect b_m is more positive for managers with greater age, tenure, experience, fund size, rating, and activeness, conditional on setting the average sensitivity coefficients $\rho \equiv \rho_\tau^R \equiv \rho_\tau^F \equiv 0$ for all $\tau = 1, \cdots, h$ in regression (3.4). It further implies that, in the DOLS regression (3.3), the estimated average sensitivity coefficient to return performance should be significantly positive for star or highly active managers, but statistically indistinguishable from zero for non-star or moderately active ones. Likewise, in the ECM regression (3.9), the estimated average sensitivity coefficient to return performance should remain significantly positive for star or highly active managers and insignificant for others.

Mapping Hypotheses 3(a) to Econometric Specifications. Third, we discuss the effects of fund flows on a manager's base pay and bonus. **Hypothesis 3(a)** asserts that $\gamma_\tau^F > 0$ for at least $\tau = 1$ in regression (3.3) and $\varphi_\tau^F > 0$ for at least $\tau = 1$ in regression (3.6), while $\beta_\tau^F = 0$ for all τ in regression (3.5).

Mapping Hypotheses 4 to Econometric Specifications. Fourth, we examine the effects of family-level returns and flows on a manager's compensation and bonus. Let $Family_Flow_{m,t-1}^{(-m)}$ and $Family_R_{m,t-1}^{gross,(-m)}$ denote, respectively, fund-family flows and gross returns in year $t-1$, constructed by excluding fund manager m's own funds.

Hypothesis 4 predicts that, when these variables are added to the right-hand side of regression (3.9), the coefficients on $\ln(1 + Family_Flow_{m,t-1}^{(-m)})$ and $\ln(1 + Family_R_{m,t-1}^{gross,(-m)})$ are significantly positive. This reflects risk sharing and compensation pooling at the fund-family level.

At the same time, **Hypothesis 4** implies that these family-level returns and flows should not significantly affect individual bonus growth. Accordingly, when the left-hand side of regression (3.9) is replaced with $\Delta \ln(Bonus_{m,t})$, the coefficients on $\ln(1 + Family_Flow_{m,t-1}^{(-m)})$ and $\ln(1 + Family_R_{m,t-1}^{gross,(-m)})$ are expected to be statistically indistinguishable from zero.

4 Data and Measurement

We have assembled a novel dataset on the compensation and career trajectories of U.S. mutual fund managers by merging multiple administrative sources. To our knowledge, this is the first dataset to provide such detailed information. The foundation of the dataset is the Longitudinal Employer-Household Dynamics (LEHD) database, an extensive administrative dataset maintained by the U.S. Census Bureau that provides quarterly histories of individual compensation, employment, and employer characteristics. With support from the Census Bureau, we augmented the LEHD data with manually collected information on individual mutual fund managers from large-scale textual sources, including LexisNexis public records, mutual fund prospectuses, and LinkedIn profiles.

We then integrated the augmented LEHD data with the CRSP Survivor-Bias-Free U.S. Mutual Fund database, the Morningstar database, and Statements of Additional Information (SAIs) by matching each manager to the funds they managed in each period. These standard mutual fund datasets provide detailed information on assets under management, returns, fund flows, expense ratios, categorical descriptions of compensation structures, manager ownership stakes, and other relevant fund characteristics.

4.1 Longitudinal Employer-Household Dynamics (LEHD) Data

We use the LEHD dataset to track mutual fund managers' compensation and employment histories, including periods when an individual manager worked outside the mutual fund industry. The LEHD data is primarily sourced from state Unemployment Insurance (UI) wage records and employer reports collected under the BLS Quarterly Census of Employment and Wages (QCEW) program, and then augmented with the Internal Revenue Service (IRS) and the Social Security Administration (SSA) administrative records plus Census Bureau surveys and censuses.[6] BLS and state labor agencies are responsible for collecting these UI wage data. The main source of individual-level earnings (personal income) in LEHD is the state UI wage records. These are the administrative records employers must file for every employee covered by UI, reporting quarterly "total wages" paid. This is the fundamental microdata source on which LEHD is built. The QCEW is a statistical program run by BLS and the state workforce agencies, which is based on the same underlying UI wage records but aggregated to the establishment/industry level for statistical publication. It mainly provides establishment-level employer data (industry codes, location, size, etc.) used

[6]The IRS provides administrative tax records that support the construction of the Census Bureau's LEHD dataset in several important ways, including complementing state UI records where coverage is incomplete, linking establishments to their corporate parents, and assigning employer identification numbers (EINs). The SSA also contributes by assigning demographic characteristics to workers in the LEHD, as well as in other ways.

to enrich and link the worker records. According to the BLS Handbook of Methods, "total wages" primarily consist of gross wages and salaries, bonuses, exercised or cashed-out stock options (see also Andersson et al., 2009).[7] These amounts are reported for the calendar quarter in which payments are made. LEHD coverage extends to all 50 U.S. states and the District of Columbia, encompassing over 95% of total U.S. employment. Each individual in the dataset is assigned a unique Protected Identification Key (PIK), while each employer is identified by a distinct firm ID.[8]

Access to LEHD data requires project-specific approval from both the Census Bureau and each participating state. On average, a project is granted access to data from about 20 states. This study draws on two separate research projects approved by the U.S. Census Bureau, which together covered nearly all major mutual fund states, with the exception of New York.[9] The primary project was approved for 28 states: Arizona, California, Colorado, Connecticut, Delaware, Iowa, Idaho, Indiana, Kansas, Massachusetts, Maryland, Maine, Montana, North Dakota, New Jersey, New Mexico, Nevada, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, Washington, Wisconsin, and Wyoming. The second project was approved for 17 states: Arizona, Arkansas, California, the District of Columbia, Delaware, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Nevada, New Mexico, Oklahoma, Pennsylvania, Tennessee, and Texas.

The LEHD dataset is particularly well-suited for this study for four reasons. First, as a confidential administrative employment dataset, it provides precise and reliable measures of actual compensation for fund managers. To our knowledge, this is the first study to construct an individual-level panel of fund manager compensation and employment histories in the U.S. using official administrative income records. Second, the LEHD enables detailed tracking of career transitions, including the identification of subsequent employers and earnings after fund managers leave their portfolio management positions. Third, fund manager compensation is typically opaque: pay secrecy, whether maintained informally or enforced as a formal policy, applies to roughly half of U.S. employees, including most mutual fund managers (e.g., Mas, 2017; Cullen and Pakzad-Hurson, 2023). As a result, survey-based compensation data are often incomplete or biased, making administrative records such as the LEHD one of the most credible and comprehensive sources of accurate pay measures, particularly in the context of mutual fund managers. Fourth, the individual income data are reported quarterly and include bonuses, which are a key component

[7] Stock options are recorded in the LEHD only when they generate cash income reported in state UI wage records, that is, when the employee exercises the option and receives the proceeds, or when the option is otherwise liquidated.

[8] The firm ID is a unique employer identifier shared between the LEHD and the Census Bureau's Business Register (formerly SSEL). For single-establishment firms, it is typically equivalent to an EIN. For multi-establishment enterprises, it may correspond to multiple EINs, with the mapping provided through the Business Register.

[9] New York rarely grants LEHD data access to researchers outside the U.S. Census Bureau.

of mutual fund managers' compensation.

4.2 Base Pay and Bonus Metrics for Mutual Fund Managers

The LEHD income data provide total compensation for each individual-employer pair on a quarterly basis, covering both base salary and bonuses in the total compensation. The data may not fully capture equity-based compensation, such as option grants or restricted stock grants, because these do not generate reportable wage income in total compensation, although exercised or cashed-out stock options are included (e.g., Andersson et al., 2009). For our purposes, this omission is not material. While CEOs and other senior executives at the fund-company level may receive equity through compensation plans (e.g., Chen, Goldstein and Jiang, 2008), mutual fund managers are generally compensated through base pay and bonuses, with limited reliance on stock-based pay, reflecting their status as salaried employees rather than corporate executives.[10]

For each manager in each year, we identify the "bonus quarter" as the quarter with the highest compensation, provided that pay in that quarter exceeds the maximum of the two adjacent quarters by at least 20%.[11] This approach isolates payments that are distinct from regular quarterly salaries. The annual bonus is calculated as the difference between compensation in the bonus quarter and the maximum of the adjacent quarters. Base pay is the total annual compensation minus the estimated bonus.

In most cases, the bonus quarter falls in the first quarter of the year. This aligns with the self-disclosure materials of mutual funds, many of which explicitly state in their SAIs that fund manager bonuses are paid in the first quarter of the following year. Public disclosures by major U.S. active managers further indicate that prior-year bonuses are typically determined or finalized in January and paid in the first quarter.[12]

As an external validation of our bonus measure, we show that the bonus-to-total-pay ratio from our data closely matches compensation structures reported in fund filings. Panel C of Table 16 shows that managers with performance-based pay receive higher bonus shares, whereas those with fixed-salary pay receive lower bonus shares.

[10] U.S. regulation and industry practice prohibit fund-level equity compensation and strongly discourage stock-based pay for mutual fund managers. While parent-company equity awards exist at some large public firms, these are selective retention tools for senior or "star" managers, , not the standard compensation for most managers. Most portfolio managers are salaried professionals whose pay consists of base salary and cash bonuses, unlike corporate executives whose compensation is predominantly equity-based.

[11] The results are robust to alternative definitions, such as requiring compensation to exceed the average of the two adjacent quarters by at least 20%.

[12] For example, Fidelity discloses that portfolio manager annual bonuses are determined after year-end performance reviews and generally paid in the first quarter of the following year. Capital Research and Management Company (CRMC) states that portfolio managers' cash bonuses are calculated based on prior calendar year results and paid out in the first quarter. BlackRock specifies that portfolio managers receive an annual bonus, determined at year-end and paid in the first quarter of the following year.

4.3 CRSP and Morningstar Mutual Fund Databases

We obtain fund names, monthly returns, monthly total net assets (TNAs), investment objectives, and other fund characteristics from the CRSP Survivorship-Bias-Free Mutual Fund Database. In line with prior studies (e.g., Kacperczyk, Sialm and Zheng, 2008; Huang, Sialm and Zhang, 2011), we classify actively managed US equity mutual funds using their objective codes and disclosed asset compositions.[13] Because monthly TNA data prior to 1991 are scarce and of poor quality, our CRSP sample begins in January 1991. Following earlier studies (e.g., Elton, Gruber and Blake, 2001), we focus on actively managed mutual funds with AUM greater than $15 million.

The CRSP mutual fund database reports manager names for both individually managed and team-managed funds. However, for team-managed funds, it provides only the managers' last names. To supplement the CRSP data, we collect full manager names and tenure histories from the Morningstar Direct mutual fund database, as well as from mutual fund prospectuses, LinkedIn profiles, company websites, and other sources.

Besides manager names and tenure histories, we use Morningstar Direct to collect other key variables. First, we compute three adjusted return measures: (i) abnormal returns relative to the corresponding Morningstar style index, (ii) abnormal returns relative to the AUM-weighted average returns of peer funds within the same Morningstar investment category, and (iii) abnormal returns relative to each fund's self-reported benchmark. Second, we use Morningstar ratings to identify star managers. Third, we gather assets and returns for Separately Managed Accounts (SMAs) and Collective Investment Trusts (CITs), which are not fully captured in the CRSP and Morningstar mutual fund databases. We incorporate SMA and CIT data by matching them to mutual fund shares by Morningstar "StrategyID" and requiring at least 99% return correlation.[14]

4.4 Metrics for AUM, Revenue, Returns, and Flows at the Manager and Family Levels

Manager-Level AUM and Fee Revenue. Funds can be managed by multiple managers, and a single manager may oversee several funds. Following Ibert et al. (2018), we allocate each fund's assets equally

[13] We first select funds with the following Lipper objectives: CA, CG, CS, EI, FS, G, GI, H, ID, LCCE, LCGE, LCVE, MC, MCCE, MCGE, MCVE, MLCE, MLGE, MLVE, MR, NR, S, SCCE, SCGE, SCVE, SG, SP, TK, TL, UT. If a fund does not have any of the above objectives, we select funds with the following strategic insight (SI) objectives: AGG, ENV, FIN, GMC, GRI, GRO, HLT, ING, NTR, SCG, SEC, TEC, UTI, GLD, RLE. If a fund has neither the Lipper nor the SI objective, then we use the Wiesenberger fund type code to select funds with the following objectives: G, G-I, G-S, GCI, IEQ, ENR, FIN, GRI, HLT, LTG, MCG, SCG, TCH, UTL, GPM. If none of these objectives is available and the fund holds more than 80% of its value in common shares, then the fund will be included. After finishing the procedure described above, we further identify and exclude index funds based on their names and the index fund identifiers in the CRSP data.

[14] The procedure is similar to the literature (e.g., Huang et al., 2024; Jones, Martinez and Montag, 2025).

across all of its managers. The total net asset for manager m in month t is:

$$TNA_{m,t} = \sum_{i \in \Omega_{m,t}} \frac{TNA_{i,t}}{M_{i,t}}, \tag{4.1}$$

where $\Omega_{m,t}$ represents the set of funds managed by manager m in month t and $M_{i,t}$ denotes the number of managers overseeing fund i in month t. As emphasized by Berk, van Binsbergen and Liu (2017), the set of funds overseen by manager m, denoted by $\Omega_{m,t}$, can vary over time t due to AUM reallocation. In Panel A of Table 1, the row $\ln(TNA_{m,t})$ shows the distribution of the natural log of $TNA_{m,t}$ for each December (i.e., each year-end AUM). The median value of $\ln(TNA_{m,t})$ is 19.97, which suggests that a typical fund manager in our sample oversees approximately \$470 million.

We calculate the revenue earned by manager m in month t using the following formula:

$$Rev_{m,t} = \sum_{i \in \Omega_{m,t-1}} \frac{TNA_{i,t-1}}{M_{i,t-1}} \times TER_{i,t}, \tag{4.2}$$

where $TER_{i,t}$ denotes the total expense ratio of fund i in month t. To determine the annual revenue earned by manager m, we sum up the monthly fee revenues for each year.

Manager-Level Fund Flows. We first compute the monthly fund-level fund flows as:

$$Flow_{i,t} = \frac{TNA_{i,t} - TNA_{i,t-1} \times (1 + Ret_{i,t})}{TNA_{i,t-1}}, \tag{4.3}$$

where $Ret_{i,t}$ denotes the net return for fund i in month t. Following Elton, Gruber and Blake (2001), we require that the lagged TNA (i.e., $TNA_{i,t-1}$) exceed \$15 million. If it doesn't, the flow observation for fund i in month t is excluded.

We proceed to compute the monthly manager-level flows by aggregating the monthly fund-level flows across all funds overseen by manager m. The average is weighted based on the one-month lagged fund asset, divided by the number of managers, as follows:

$$Flow_{m,t} = \frac{1}{TNA_{m,t-1}} \sum_{i \in \Omega_{m,t-1}} \frac{TNA_{i,t-1}}{M_{i,t-1}} \times Flow_{i,t}. \tag{4.4}$$

Annual flows are obtained by summing monthly flows for each manager.

Manager-Level Returns. To measure monthly manager-level returns, we aggregate the monthly fund-level gross (or risk-adjusted) returns across all funds overseen by manager m. This aggregation is weighted by the one-month lagged total net assets of each fund, divided by the number of managers of the fund, as illustrated in the equation:

$$R_{m,t} = \frac{1}{TNA_{m,t-1}} \sum_{i \in \Omega_{m,t-1}} \frac{TNA_{i,t-1}}{M_{i,t-1}} \times R_{i,t}, \tag{4.5}$$

where $R_{m,t}$ represents various return measures: (i) gross portfolio return, $R^{gross}_{m,t}$; (ii) excess return relative to the Morningstar style index, $R^{ex,ms}_{m,t}$, or relative to the AUM-weighted average return of Morningstar category peers, denoted $R^{ex,ms(-m)}_{m,t}$; (iii) risk-adjusted return (i.e., alpha) relative to the market or to tradable Vanguard indices, denoted $R^{abn,capm}_{m,t}$ and $R^{abn,van}_{m,t}$, respectively; and (iv) excess return relative to each fund's self-reported benchmark, denoted $R^{ex,self}_{m,t}$. The construction of returns is detailed in Online Appendix 3. Annual manager-level returns are obtained by time-aggregating monthly returns over the year.

Fund Family Flows. We compute the fund family flows by aggregating the fund-level flows across all funds belonging to the same fund family. These flows are averaged, with weights derived from the one-month lagged fund asset size, as follows:

$$Family_Flow_{m,t} = \frac{\sum_{i \in \Omega_{m,f,t-1}} TNA_{i,t-1} \times Flow_{i,t}}{\sum_{i \in \Omega_{m,f,t-1}} TNA_{i,t-1}}. \tag{4.6}$$

where $\Omega_{m,f,t}$ represents the set of funds overseen by fund family f where manager m is employed during month t. To compute annual fund family flows, we aggregate monthly family flows over each calendar year. Following Ibert et al. (2018), we also calculate fund family flows excluding the flows of funds managed by manager m, as defined below:

$$Family_Flow^{(-m)}_{m,t} = \frac{\sum_{i \in \Omega_{m,f,t-1} \setminus \Omega_{m,t-1}} TNA_{i,t-1} \times Flow_{i,t}}{\sum_{i \in \Omega_{m,f,t-1} \setminus \Omega_{m,t-1}} TNA_{i,t-1}}. \tag{4.7}$$

We also establish and calculate the total return for the fund family, as well as the family return excluding those from funds specifically overseen by individual manager m.

4.5 Intermediate Datasets to Bridge LEHD and Mutual Fund Databases

Mutual Fund Prospectuses, LinkedIn Profiles, and Company Websites. For observations where manager names remain incomplete after incorporating data from the Morningstar Direct mutual fund database,

we conduct a manual search to obtain the full names. This process involves reviewing mutual fund prospectuses, LinkedIn profiles, and other online resources. We first use fund managers' last names together with fund names to retrieve the corresponding mutual fund prospectuses from the SEC's EDGAR database. This step provides full names, including suffixes and middle initials, for most remaining managers. When prospectuses do not contain complete names, we turn to LinkedIn profiles, identifying managers using the manager's last name, the employer's name, and its location. For managers still lacking full names, we consult other sources, including official company websites, obituaries, and the CFA member directory. This approach ensures both the accuracy and completeness of the collected manager names.

LexisNexis Public Records. To enable the Person Identification Validation System (PVS) office at the U.S. Census Bureau to identify individual fund managers in the LEHD data, we are required to provide detailed personal information for each manager, including full name, the first five digits of the Social Security number (SSN), gender, month and year of birth, and residential street addresses for both owned and rented properties. We obtain this demographic information from LexisNexis Public Records, which serves as the primary intermediate dataset linking the CRSP and Morningstar mutual fund datasets to the LEHD.

LexisNexis Public Records contains more than 84 billion records on individuals. To compile comprehensive information on fund managers, we use the "People Search" function in the LexisNexis online public record database. Following Pool, Stoffman and Yonker (2012), we search using name, age range, and location information. We begin by searching for a fund manager's name, then refine the results using location details from LinkedIn profiles or company websites. Finally, we manually verify each match by reviewing all employment and address information reported in the LexisNexis individual public record reports.

After identifying fund managers in the LexisNexis database, we collect their month and year of birth, the first five digits of their SSN, and information on their residential addresses from the reports. Using these details, we map each fund manager from the LexisNexis data to an individual in the LEHD data using a matching service provided by the PVS office at the U.S. Census Bureau. Our matching process requires an exact match on five individual characteristics: full name, residential addresses, the first five digits of the SSN, month and year of birth, and employer information.

CoreLogic Deeds and Listings Data. In addition to the LexisNexis Public Records data, we use CoreLogic as a complementary intermediate dataset that links the LEHD and mutual fund databases. CoreLogic contains deed records for nearly 150 million residential and commercial properties in the U.S., with

transaction and mortgage data dating back to 1980. For our matching, we extract from CoreLogic the names of property owners and sellers, complete street addresses (street number, street name, suite or unit, city, county, state, and ZIP code), and the associated geographical coordinates (latitude and longitude).

To identify fund managers in the LEHD, we first match each fund manager from the mutual fund databases to deed records in CoreLogic. A match is considered valid when the manager's first, middle, and last names match those of a property owner or seller in the records. In the second step, we link each matched property owner or seller to an individual in the LEHD. This linkage uses a bridge between CoreLogic and the LEHD's unique individual identifiers (PIKs), established by the PVS office at the U.S. Census Bureau (Cen, 2021). A match between a CoreLogic record and an LEHD individual requires an exact match on both full name and owned residential address, which are common identifiers available in both CoreLogic and the PVS database. To further refine the identification of the matched fund managers in the LEHD, we leverage available employment information. Specifically, for each matched manager, we require that the employer recorded in the LEHD data exactly matches the fund management company listed for the same manager in the CRSP and Morningstar mutual fund datasets for the corresponding year. To determine whether an LEHD employer corresponds to a fund management company in the mutual fund datasets, we use the Census Bureau's Business Register (SSEL), which contains business name, address, industry code, firm ID (linked to EIN), start year, and identifiers for linking with other Census datasets such as the LEHD. A firm is confirmed as the focal fund management company if its Business Register entry matches the mutual fund dataset record on business name, address, industry code, and EIN. Our final CoreLogic-based bridge between fund managers and LEHD individuals is therefore based on an exact match of three elements: the manager's name, residential address, and employer information.

4.6 Statement of Additional Information (SAI)

Self-Disclosed Compensation Structure Indicator Variables. Information on each mutual fund manager's self-disclosed compensation structure, recorded as indicator variables, is obtained from the SAI filed by open-end management investment companies. These disclosures are typically brief and qualitative, usually stating whether compensation is structured as fixed salary, performance-based pay, or AUM-linked pay, and in some cases noting the evaluation period or benchmark used. However, SAIs generally do not disclose the precise formulas, weights, or payout amounts.

We obtain SAIs from the SEC's EDGAR database and manually collect annual information on portfolio

manager compensation for actively managed U.S. equity mutual funds beginning in 2005.[15] We also record fund names and fund tickers/CUSIPs (when available) and use this information to match the compensation structure data to the CRSP and Morningstar Mutual Fund databases.

Ownership Stake of Mutual Fund Managers. We obtain fund manager ownership information from the SAI using a hybrid approach that combines traditional Python-based web scraping with GPT-based extraction via the OpenAI API, which leverages advanced pre-trained large language models (LLMs). This approach offers several advantages for processing SAIs. First, mutual funds vary substantially in how they present ownership disclosures: some use structured tables, while others rely on unstructured narrative text. Traditional web scraping tools often struggle with these inconsistencies, particularly when parsing non-standard structures. In contrast, the OpenAI API can reliably extract relevant information from unstructured text, enhancing both accuracy and flexibility. Second, the API's high token limit enables processing of long narrative sections and large tables without truncation. Third, the API outputs results in JSON format, which naturally preserves the hierarchical relationships among fund families, funds, and managers.

Our data collection proceeds as follows. We first retrieve the URLs of Forms N-1A and 485BPOS filings from the SEC's EDGAR database using the Central Index Keys (CIKs) of the mutual funds. We then apply fund-family-specific keywords, such as "ownership of securities," "ownership of portfolio managers," and "beneficially owned by portfolio manager," to locate sections of the SAI that disclose portfolio manager ownership. From these sections, we extract relevant text or tables, parse the HTML, convert the content to string format, and submit it to the OpenAI API with a structured JSON prompt specifying the required elements: portfolio manager names, associated funds, reported dollar ownership ranges, and filing dates. The API returns the extracted information as structured JSON. While the LLM-based extraction works well in most cases, it is less effective when disclosures appear in image-based tables or include non-textual symbols; in such cases, we collect the data manually. Finally, we match the extracted ownership data to the mutual fund database, first by exact matches on manager last names and filing years, and then by manual matching on fund names and full manager names to resolve naming discrepancies between SEC filings and the mutual fund data.

Our ownership sample covers U.S. actively managed equity mutual funds from 2004 to 2024. Manager ownership is reported in ranges: \$0, \$1–\$10,000, \$10,001–\$50,000, \$50,001–\$100,000, \$100,001–\$500,000,

[15] In 2004, the SEC adopted rules requiring mutual funds, starting in March 2005, to disclose in their SAIs the compensation structure of their portfolio managers.

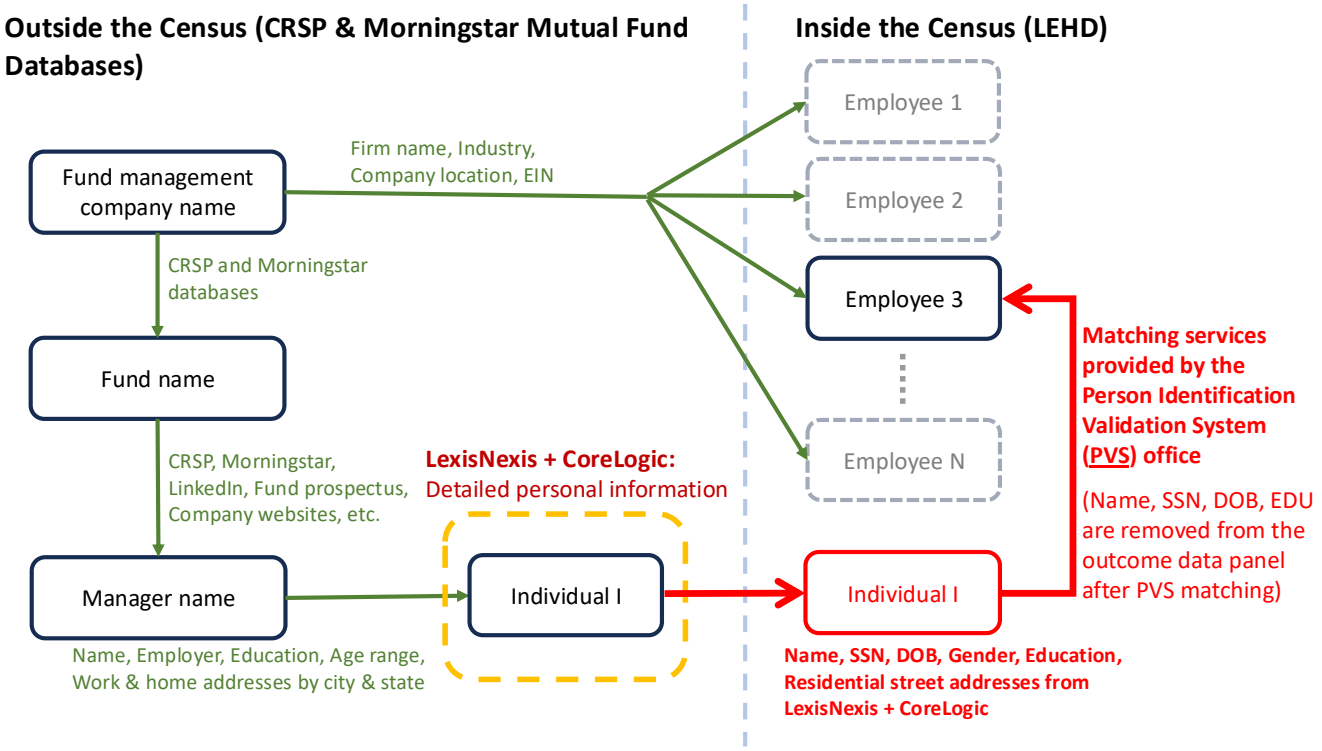


Figure 1: Illustration of data construction.

$500,001–$1,000,000, and above $1,000,000. Following Khorana, Servaes and Wedge (2007), we assign each range the midpoint of its lower and upper bounds as the representative ownership value, and use $1,000,001 for the open-ended category above $1,000,000. For managers holding stakes in multiple funds in a given year, we aggregate ownership across all such funds. At the manager-year level, the median ownership stake is $75,000, and roughly 40% of observations have zero ownership.

5 Sample Description and Summary Statistics

Our main results are based on the primary LEHD project, which covers 28 states. Additional analyses, using data from our second LEHD project covering 17 states, are reported in the Online Appendix 5. Both LEHD projects are described in detail in Section 4.1.

Merging the CRSP and Morningstar mutual fund databases with the LEHD yields approximately 11,500 manager-year observations from 1990 to 2022.[16] The dataset covers about 2,400 fund managers and 650 distinct fund management companies. The resulting panel, which captures compensation and employment histories for active equity fund managers, is a key contribution of this paper. Figure 1 illustrates the data

[16]To comply with U.S. Census Bureau disclosure requirements, observation counts are rounded to the nearest hundred if between 1,000 and 10,000, and to the nearest fifty if between 100 and 1,000. This convention applies to all tables in our study.

construction process. Table 1 reports summary statistics for the key variables discussed below, and Table 2 shows that our sample is representative of the population of U.S. active equity mutual funds.

Summary Statistics for Fund Manager Compensation. Panel A of Table 1 presents the summary statistics for the natural logarithm of annual compensation levels, denoted as $\ln(Pay_{m,t})$. The median value of this measure stands at 13.19, corresponding to an estimated median annual compensation of approximately \$535 thousand for an active fund manager. In the $\ln(Pay_{m,t})$ row, columns (2) through (7) of Table 1 show that the distribution of fund manager compensation, $Pay_{m,t}$, is highly right-skewed and approximately log-normal. This pattern is evidenced by the mean of $\ln(Pay_{m,t})$ being close to the median, the distribution's approximate symmetry around the median, and the distance from the median to the 95th percentile being nearly twice the standard deviation. Accordingly, the level variable $Pay_{m,t}$ exhibits a mean substantially exceeding its median, consistent with a log-normal right tail. Indeed, columns (1) and (5) for the $Pay_{m,t}$ row confirm that the mean compensation is \$1,522 thousand, significantly exceeding the median of \$535 thousand, a disparity primarily due to superstar fund managers whose pay reaches the 95th percentile (\$7,060 thousand, as shown in column (7)) or higher.

Summary Statistics for Fund Manager Base Pay and Bonuses. We also break down total compensation into base pay and bonuses. The median value of $\ln(Base_{m,t})$ is 12.75, which translates to an approximate amount of \$344.6 thousand for the median base salary. Similarly, the median value of $\ln(Bonus_{m,t})$ is 12.32, corresponding to an approximate median bonus of \$224.1 thousand. Just like the distribution of annual total compensation, the distributions of base pay and bonuses closely resemble log-normal shapes. This is evidenced by the mean closely matching the median, the symmetry around the median, and the distance from the median to the 95th percentile being nearly twice the standard deviation. Indeed, examining columns (1) and (5) for the $Base_{m,t}$ row reveals that the average base salary is \$728.4 thousand, significantly higher than the median of \$344.6 thousand. In a similar vein, columns (1) and (5) for the $Bonus_{m,t}$ row show that the average bonus stands at \$904.6 thousand, greatly surpassing the median of \$224.1 thousand. These disparities are driven largely by the exceptional earnings of superstar fund managers, whose base pay and bonuses reach or exceed the 95th percentiles (\$3,472 thousand and \$5,336 thousand, respectively, as shown in column (7)).

The bonus share of total compensation has a mean of 42.8% and has a median of 34.1%, indicating that bonuses, while generally smaller than base pay, represent a substantial component of overall pay. Consistent with this relatively modest share, our results suggest that return performance influences overall

Table 1: Summary statistics.

	(1) Mean	(2) SD	(3) 5^{th} pct	(4) 25^{th} pct	(5) Median	(6) 75^{th} pct	(7) 95^{th} pct
All sample:	Panel A: Manage-year panel data						
$\ln(Pay_{m,t})$	13.21	1.65	10.67	12.44	13.19	14.23	15.77
$\ln(Base_{m,t})$	12.85	1.13	10.58	12.22	12.75	13.58	15.06
$\ln(Bonus_{m,t})$	12.28	1.99	9.34	10.41	12.32	13.92	15.49
$Pay_{m,t}$ (\$k)	1,522	2,553	43.04	242.7	535.0	1,513	7,060
$Base_{m,t}$ (\$k)	728.4	1,192	39.34	202.8	344.6	790.2	3,472
$Bonus_{m,t}$ (\$k)	904.6	1,644	11.35	33.19	224.1	1,110	5,336
$Bonus_{m,t}/Pay_{m,t}$	0.428	0.283	0.038	0.173	0.341	0.692	0.889
$\ln(TNA_{m,t})$	19.91	1.86	16.79	18.53	19.97	21.23	22.90
$\ln(Rev_{m,t})$	15.31	1.78	12.29	14.01	15.41	16.57	18.10
$\ln(Rev_{m,t}/Rev_{m,t-1})$	0.066	0.662	−0.726	−0.151	0.051	0.272	0.954
$\ln(1+Flow_{m,t})$	0.023	0.482	−0.439	−0.153	−0.034	0.128	0.631
$\ln(1+R^{gross}_{m,t})$	0.080	0.206	−0.334	0.002	0.116	0.206	0.308
$\ln(1+R^{ex,ms}_{m,t})$	0.005	0.081	−0.112	−0.032	0.005	0.042	0.125
$\ln(1+R^{ex,ms\ (-m)}_{m,t})$	−0.001	0.082	−0.107	−0.031	0.001	0.032	0.106
$\ln(1+R^{ex,self}_{m,t})$	0.003	0.089	−0.122	−0.033	0.003	0.040	0.135
$\ln(1+R^{abn,capm}_{m,t})$	0.007	0.057	−0.074	−0.019	0.004	0.031	0.099
$\ln(1+R^{abn,van}_{m,t})$	0.011	0.043	−0.047	−0.009	0.008	0.027	0.075
Sample without job turnovers:							
$\ln(Pay_{m,t}/Pay_{m,t-1})$	0.043	0.732	−1.053	−0.125	0.062	0.244	0.939
$\ln(Base_{m,t}/Base_{m,t-1})$	0.030	0.752	−1.099	−0.140	0.027	0.183	1.092
$\ln(Bonus_{m,t}/Bonus_{m,t-1})$	0.148	2.419	−1.671	−0.213	0.086	0.482	3.134
Sample with job turnovers in year t:							
$\ln(Pay_{m,t+1}/Pay_{m,t-1})$	−0.089	1.376	−2.038	−0.524	0.047	0.500	1.373
$\ln(\overline{Pay}_{m,t+1\to t+3}/Pay_{m,t-1})$	−0.203	1.464	−2.798	−0.592	0.026	0.437	1.545
All sample:	Panel B: Income risk (cross-manager distribution of time-series SD)						
SD of $\ln(1+Flow_{m,t})$	0.315	0.334	0.020	0.115	0.247	0.363	0.834
SD of $\ln(1+R^{gross}_{m,t})$	0.201	0.119	0.057	0.135	0.198	0.264	0.399
Sample without job turnovers:							
SD of $\ln(Pay_{m,t}/Pay_{m,t-1})$	0.403	0.415	0.063	0.230	0.349	0.577	1.283
SD of $\ln(Base_{m,t}/Base_{m,t-1})$	0.475	0.533	0.037	0.118	0.354	0.827	1.611
SD of $\ln(Bonus_{m,t}/Bonus_{m,t-1})$	2.580	2.415	0.108	0.378	2.092	3.957	6.889
SD of $\ln(Rev_{m,t}/Rev_{m,t-1})$	0.544	0.459	0.129	0.297	0.445	0.670	1.517
Further without AUM reallocation:							
SD of $\ln(Pay_{m,t}/Pay_{m,t-1})$	0.348	0.368	0.061	0.111	0.288	0.575	1.182
SD of $\ln(Rev_{m,t}/Rev_{m,t-1})$	0.327	0.236	0.071	0.168	0.263	0.413	0.747

Notes. This table presents the summary statistics for the primary variables of interest. Columns (1) and (2) display the mean and standard deviation of each variable, respectively. Columns (3) through (7) detail the 5th, 25th, 50th (median), 75th, and 95th percentiles of each variable, in that order. The data covers the sample period from 1990 to 2022.

pay mainly through AUM, while also exerting an additional effect on bonuses beyond its impact on AUM. Meanwhile, this proportion of bonus to total pay can vary significantly among different managers and over time, ranging from 3.8% at the 5th percentile to 88.9% at the 95th percentile. Assuming base pay and bonus follow similar ranking patterns across managers, their summary statistics suggest that active fund

managers with lower compensation tend to receive a larger percentage of their total income as base pay, while those with higher compensation usually have a greater proportion of their compensation derived from bonuses. On one hand, the 75th and 95th percentiles for base pay stand at \$790.2 thousand and \$3,472 thousand, respectively. These figures are significantly lower than those for bonuses, which are \$1,110 thousand and \$5,336 thousand at the 75th and 95th percentiles, respectively. On the other hand, at the lower end of the compensation spectrum, the pattern inverts: the 5th and 25th percentiles for base pay, at \$39.34 thousand and \$202.8 thousand, significantly exceed those for bonuses, which are \$11.35 thousand and \$33.19 thousand at the 5th and 25th percentiles, respectively. These patterns provide suggestive evidence in support of **Hypothesis 2(c)**, which posits that the bonus share of overall compensation increases with fund managers' tenure, experience, AUM, star rating, and related characteristics, since overall compensation itself tends to rise with these determinants.

Summary Statistics for Fund Manager AUM and Revenue. In Panel A of Table 1, the row $\ln(Rev_{m,t})$ shows the distribution of the natural log of fee revenues for each manager and each year. The median of the log annual revenue is 15.41, which translates to approximately \$4.93 million in dollar terms. Similar to the distribution of annual compensation, including both base salary and bonus components, the distributions of AUM and fee revenue also exhibit shapes that closely approximate log-normal distributions. This resemblance is demonstrated by the mean aligning closely with the median, the distribution's symmetry about the median, and the gap from the median to the 95th percentile being nearly double the standard deviation. In practice, the total expense ratio $TER_{i,t}$ remains nearly constant across months t for a given fund i. As a result, log revenue is essentially proportional to log AUM, and its distribution therefore exhibits a shape similar to that of log AUM. Moreover, one of the central findings of our study is that fund manager compensation is primarily driven by AUM (and revenue). This result strongly rejects **Hypothesis 1(a)** while supporting **Hypothesis 1(b)**. As a direct implication, the distribution of fund manager compensation naturally takes on a log-normal form. In contrast, Gabaix and Landier (2008) show that CEO compensation is tightly linked to firm size, with both following a power-law distribution. This contrast highlights that while managerial pay in both settings scales with organizational size, the underlying distributional patterns differ markedly across contexts.

Summary Statistics for Income Risk of Fund Managers. We emphasize that Table 1 provides an informative portrait on the income risk faced by fund managers, such as the downside income and career risk, the time-series volatility risk of income, and the time-series volatility risk of income driven only by fund

returns and flows.

To obtain an idea about the downside income and career risk, we consider the pooled sample of log growth rates of manager pay. Panel A of Table 1 reveals that, within the sample that exclude job turnovers (i.e., there is no change of employers), the median of annual log compensation growth rates for active equity fund managers, defined as $\ln(Pay_{m,t}/Pay_{m,t-1})$, is approximately 6.2%, while the mean of log compensation growth rates is around 4.3%. Even without any job turnover, at least 25% of fund managers will typically experience an income decrease of -11.8% $(= e^{-0.125} - 1)$ over a year, and at least 5% of fund managers typically encounter an income decrease of -65% $(= e^{-1.053} - 1)$ over a year. Thus, active fund managers indeed confront significant downside income risk even when there is no job turnover.

When job changes happen (that is, when there's a change of employers), the median of compensation growth rates is 4.7%, whereas the mean of compensation growth rate drops to approximately -8.9%. This highlights that the distribution of compensation growth rates leans significantly towards lower values, indicating a pronounced downward skewness and tail. Such a pattern reveals that job changes are typically associated with a significant downside risk for active fund managers' income and career. This risk becomes even more evident when examining the percentage change in pay over the three years following a job change, represented as $\ln(\overline{Pay}_{m,t+1\to t+3}/Pay_{m,t-1})$, where $\overline{Pay}_{m,t+1\to t+3}$ denotes the average compensation received by manager m from years $t+1$ to $t+3$ after turnover in year t. On average, the three-year average income after changing jobs experiences a decline of about -20.3% compared to the pay before the job turnover, signifying a notable decrease in income, while the median percentage change stands at around 2.6%. Moreover, when a job change occurs, at least 25% of fund managers will experience an income decrease of -40.8% $(= e^{-0.524} - 1)$ in the year following the job turnover (year $t+1$) and a three-year average income reduction of -44.7% $(= e^{-0.592} - 1)$ over the years $t+1$ through $t+3$ compared to the pay before the job turnover in year t. Furthermore, in the event of a job change, at least 5% of fund managers will encounter an income decrease of -86.97% $(= e^{-2.038} - 1)$ in the year following the change (year $t+1$) and a three-year average income reduction of -93.92% $(= e^{-2.798} - 1)$ over the years $t+1$ through $t+3$ compared to the pay before the job turnover in year t. Thus, active fund managers indeed confront significant downside career risk that can severely damage their incomes.

To assess the time-series second-moment risk of income, Panel B of Table 1 presents the cross-sectional distribution of managers' time-series standard deviations of log growth rates in total pay, base pay, bonus, and revenue. For each manager, we compute these time-series standard deviations using observations without job turnover. The average standard deviation of the log growth rates of manager pay is approxi-

mately 40.3%, and thus, the average standard deviation of manager pay percentage change is approximately 47.5%.[17] A significant number of fund managers encounter volatility of log compensation growth rates as high as 57.7% and 128.3% at the 75th and 95th percentiles, respectively. This indicates that fund managers are exposed to considerable time-series volatility risk of income. Not surprisingly, the growth rate of bonuses is much more volatile than that of base pay. The average standard deviation of the log growth rates of bonus is approximately 258%, with a significant number of fund managers facing time-series volatility risk of log bonus growth rates as high as 395.7.4% and 688.9% at the 75th and 95th percentiles, respectively.

Importantly, the average and median standard deviations of the log growth rates of manager pay, $\ln(Pay_{m,t}/Pay_{m,t-1})$, at 40.3% and 34.9% respectively, are significantly higher than those for fund returns, which stand at 20.1% and 19.8% respectively. This suggests that the time-series volatility risk of manager compensation stems from sources beyond just fund returns. As highlighted by Dou, Kogan and Wu (2023), manager compensation is expected to be influenced greatly by fund revenue, which is affected not only by fund returns but also by fund flows. Thus, a significant portion of pay volatility is expected to be attributed to the volatility in fund flows, as well as AUM reallocation within individual fund families. Fund managers indeed face significant variations in their fund flows, with the average, median, 75th, and 95th percentiles of flow volatility across managers being 31.5%, 24.7%, 36.3%, and 83.4%, respectively. In alignment with this, the bottom two rows of Panel B illustrate that, when focusing on the cases without job turnovers or AUM reallocation, the volatility in pay growth, with an average and median of 34.8% and 28.8% respectively, becomes almost the same as the volatility in revenue growth, which has an average and median of 32.7% and 26.3%, respectively. These patterns provide suggestive evidence in support of **Hypothesis 1(b)**, which posits that manager compensation is primarily driven by AUM (and thus by fee revenue), with the effects of returns and flows operating mainly through their influence on AUM.[18]

Representativeness of the Sample. Our analysis relies on two merged datasets that combine LEHD employment records with mutual fund data. By construction, neither dataset covers the full population of U.S. active equity mutual funds. Table 2 shows that our primary LEHD sample, which covers 28 states, is representative of the full CRSP universe of active equity mutual funds. Table OA.16 in Online Appendix 5 further shows that the second LEHD sample, which covers 17 states, is also representative of the population.

[17] The approximation is elaborate in detail in Online Appendix.

[18] When focusing on cases without job turnovers but do not exclude AUM reallocation, the average and median of revenue growth volatility increase to 54.4% and 44.5%, respectively. These figures are now significantly higher than the average and median of pay growth volatility, which stand at 40.3% and 34.9%, respectively. These patterns indicate an active reallocation of AUM within a fund family among its mutual fund managers, and that the yearly AUM reallocation measure is noisy as most reallocations occur during months other than December that year.

Table 2: Representativeness of the Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Census data sample				CRSP data sample				p-value for differences			
	Mean	25^{th}	Median	75^{th}	Mean	25^{th}	Median	75^{th}	Mean	25^{th}	Median	75^{th}
					Panel A: Sample comparison in 1997							
Manager characteristics												
$Age_{m,t}$	42.49	36	41	50	43.94	37	42	52	0.969	0.988	0.993	0.835
$Tenure_{m,t}$	2.413	0	2	5	2.203	0	2	4	0.863	1.000	1.000	0.998
$Experience_{m,t}$	15.91	10	14	20	16.41	11	14	21	0.848	0.701	1.000	0.978
Fund characteristics												
$\ln(1+Flow_{f,t})$	0.279	−0.034	0.106	0.402	0.248	−0.053	0.098	0.367	0.871	0.512	0.955	0.957
$Expense_ratio_{f,t}(\%)$	0.013	0.010	0.012	0.015	0.013	0.010	0.012	0.015	0.874	0.787	0.918	0.967
$\ln(1+R_{f,t}^{gross})$	0.202	0.175	0.222	0.259	0.195	0.172	0.221	0.253	0.335	0.679	0.975	0.331
$\ln(1+R_{f,t}^{ex,ms})$	0.001	−0.031	0.002	0.043	-0.004	−0.032	-0.000	0.028	0.718	0.834	0.879	0.973
$\ln(1+R_{f,t}^{abn,capm})$	−0.003	−0.021	0.004	0.028	−0.012	−0.036	-0.003	0.019	0.504	0.597	0.518	0.732
$\ln(1+R_{f,t}^{abn,van})$	0.008	−0.015	0.008	0.032	0.005	−0.022	0.004	0.031	0.450	0.907	0.281	0.818
$A_{f,t}$	807.6	73.84	206.5	653.2	1075	62.96	184.2	666.4	0.254	0.440	0.424	0.914
$\ln(A_{f,t})$	5.419	4.302	5.331	6.482	5.390	4.143	5.216	6.502	0.860	0.468	0.424	0.914
					Panel B: Sample comparison in 2007							
Manager characteristics												
$Age_{m,t}$	44.86	38	44	50	45.96	38	44	51	0.982	1.000	1.000	0.997
$Tenure_{m,t}$	5.714	1	5	10	5.181	1	4	8	0.197	1.000	0.972	0.337
$Experience_{m,t}$	19.20	13	18	24	19.84	13	18	24	0.893	1.000	1.000	0.953
Fund characteristics												
$\ln(1+Flow_{f,t})$	0.084	−0.183	−0.037	0.172	0.068	−0.183	−0.041	0.169	0.631	0.986	0.855	0.892
$Expense_ratio_{f,t}(\%)$	0.012	0.009	0.012	0.014	0.012	0.010	0.012	0.014	0.655	0.441	0.491	0.829
$\ln(1+R_{f,t}^{gross})$	0.090	0.033	0.088	0.147	0.086	0.033	0.085	0.144	0.360	0.905	0.544	0.921
$\ln(1+R_{f,t}^{ex,ms})$	0.018	−0.026	0.022	0.060	0.017	−0.028	0.021	0.060	0.775	0.776	0.722	0.909
$\ln(1+R_{f,t}^{abn,capm})$	0.009	−0.016	0.006	0.028	0.008	−0.016	0.007	0.028	0.830	0.979	0.919	1.000
$\ln(1+R_{f,t}^{abn,van})$	0.005	−0.009	0.004	0.023	0.004	−0.012	0.004	0.023	0.913	0.911	0.989	0.914
$A_{f,t}$	1529	85	312.2	1087	1289	76.60	257.3	941.2	0.976	0.838	0.937	0.792
$\ln(A_{f,t})$	5.819	4.443	5.744	6.991	5.654	4.339	5.550	6.847	0.963	0.840	0.937	0.792
					Panel C: Sample comparison in 2017							
Manager characteristics												
$Age_{m,t}$	49.52	43	48	55	49.95	43	49	55	0.978	1.000	0.857	1.000
$Tenure_{m,t}$	9.726	3	9	16	8.540	2	7	14	0.341	0.614	0.780	0.779
$Experience_{m,t}$	24.47	19	23	30	24.91	19	24	30	0.345	1.000	0.404	1.000
Fund characteristics												
$\ln(1+Flow_{f,t})$	0.020	−0.164	−0.063	0.082	0.018	−0.174	−0.072	0.066	0.799	0.205	0.289	0.253
$Expense_ratio_{f,t}(\%)$	0.009	0.007	0.010	0.012	0.010	0.008	0.010	0.012	0.971	0.573	0.957	0.960
$\ln(1+R_{f,t}^{gross})$	0.170	0.134	0.169	0.205	0.167	0.131	0.166	0.206	0.534	0.740	0.402	0.876
$\ln(1+R_{f,t}^{ex,ms})$	−0.003	−0.028	0.000	0.026	−0.003	−0.029	-0.000	0.027	0.993	0.882	0.983	0.784
$\ln(1+R_{f,t}^{abn,capm})$	−0.008	−0.021	−0.007	0.010	−0.011	−0.024	−0.008	0.008	0.592	0.462	0.419	0.458
$\ln(1+R_{f,t}^{abn,van})$	0.012	−0.004	0.007	0.023	0.010	−0.006	0.007	0.024	0.462	0.438	1.000	0.873
$A_{f,t}$	2559	114.7	521.5	1814	2015	87.90	386.8	1584	0.556	0.968	0.972	0.785
$\ln(A_{f,t})$	6.193	4.742	6.257	7.503	6.000	4.478	5.958	7.368	0.913	0.968	0.972	0.785

Notes. This table compares the characteristics of managers and funds between our primary census data sample and the CRSP mutual fund sample in 1997 (Panel A), 2007 (Panel B), and 2017 (Panel C). Columns (1) to (4) display the mean, 25th percentile, median, and 75th percentile of each variable in the census sample. Columns (5) through (8) detail these summary statistics for the CRSP mutual fund sample. Columns (9) through (12) show the p-value for the differences between the two samples.

Specifically, Table 2 compares our primary LEHD sample with the CRSP sample across fund manager and fund characteristics for three benchmark years, 1997, 2007, and 2017, spaced a decade apart. Columns (1) – (4) report the mean, 25th percentile, median, and 75th percentile for managers' age, tenure, and experience, as well as for funds' log flows, expense ratios, log gross returns, log excess returns relative to the corresponding Morningstar benchmarks, log CAPM alphas, log alphas relative to the Vanguard index fund benchmark portfolios, AUM, and log AUM. For comparison, columns (5) – (8) present the same statistics for the CRSP sample. Columns (9) – (12) report the p-values from bootstrap two-sample tests for each statistic and characteristic, comparing our primary LEHD sample with the CRSP data.

6 Empirical Tests

In this section, we conduct empirical tests of the hypotheses developed in Section 2 and present additional empirical analyses. Most tests and analyses build on the econometric framework introduced in Section 3.

6.1 AUM as the Primary Determinant of Manager Compensation

In this subsection, we present empirical tests of **Hypotheses 1(a)**, **1(b)**, **1(c)**, and **3(a)**.

Role of Fee Revenue in Manager Compensation. Table 3 reports the estimation results from the DOLS regression specified in (3.3). Annual compensation for each manager is constructed as the sum of quarterly compensations within the year. A manager-year observation is included in the sample only if all four quarterly compensation values are positive. To control for aggregate time-series variation in compensation that is common across managers, driven by marketwide return performance and common fund flows as emphasized by Dou, Kogan and Wu (2023), we include year fixed effects. More importantly, to ensure that the estimation identifies the contractual structure specific to each fund manager rather than reflecting cross-sectional differences across managers, we include manager fixed effects.

The key parameters of interest, γ, γ_1^R, and γ_1^F, in equation (3.3), provide clear economic interpretations central to our analysis. Specifically, γ represents the long-run equilibrium relationship between a manager's compensation and the associated AUM (or fee revenue), while γ_1^R and γ_1^F measure the sensitivity of short-run deviations in compensation to annual return performance and fund flow, respectively, relative to the long-term equilibrium with AUM (or fee revenue).

As shown in Column (1) of Panel A in Table 3, the coefficient on fee revenue is positive and statistically significant. The estimated pay-revenue sensitivity is about 0.275, well below one, indicating incomplete

Table 3: DOLS regressions of manager compensation on revenue, AUM, returns, and flows.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Panel A: Panel DOLS with fee revenue									
	$\ln(Pay_{m,t})$									
$\ln(Rev_{m,t-1})$	0.275***	0.170***	0.282***	0.173***	0.282***	0.175***	0.286***	0.180***	0.190***	0.202***
	[10.35]	[6.88]	[10.60]	[7.40]	[10.67]	[7.40]	[10.88]	[7.45]	[9.43]	[6.90]
$\ln(1+R^{gross}_{m,t})$							0.437*	−0.146		
							[1.78]	[−1.37]		
$\ln(1+R^{gross}_{m,t-1})$	0.652***	0.271			0.564**	0.164	0.420**	0.106		
	[2.85]	[1.57]			[2.41]	[1.40]	[2.24]	[0.89]		
$\ln(1+R^{ex,ms}_{m,t})$									−0.181	
$\ln(1+R^{ex,ms}_{m,t-1})$									−1.01	
									0.115	
									[0.56]	
$\ln(1+R^{ex,ms\,(-m)}_{m,t})$										−0.071
										[−0.34]
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$										0.039
										[0.15]
$\ln(1+Flow_{m,t})$							0.302***	0.149***	0.153***	0.129***
							[4.01]	[3.81]	[3.36]	[3.42]
$\ln(1+Flow_{m,t-1})$			0.468***	0.235***	0.423***	0.222***	0.322***	0.186***	0.167***	0.175***
			[7.84]	[5.39]	[7.03]	[5.09]	[6.24]	[4.45]	[3.12]	[3.72]
Adjusted R^2	0.194	0.702	0.194	0.702	0.196	0.702	0.199	0.703	0.692	0.698
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B: Panel DOLS with AUM									
	$\ln(Pay_{m,t})$									
$\ln(A_{m,t-1})$	0.277***	0.185***	0.279***	0.182***	0.278***	0.182***	0.281***	0.187***	0.195***	0.206***
	[11.01]	[8.07]	[11.22]	[8.00]	[11.17]	[8.00]	[11.36]	[8.08]	[10.31]	[7.37]
$\ln(1+R^{gross}_{m,t})$							0.444*	−0.124		
							[1.87]	[−1.17]		
$\ln(1+R^{gross}_{m,t-1})$	0.524**	0.135			0.424*	0.072	0.294	0.012		
	[2.30]	[0.90]			[1.87]	[0.64]	[1.58]	[0.10]		
$\ln(1+R^{ex,ms}_{m,t})$									−0.174	
									[−1.03]	
$\ln(1+R^{ex,ms}_{m,t-1})$									0.138	
									[]0.49]	
$\ln(1+R^{ex,ms\,(-m)}_{m,t})$										−0.056
										[−0.27]
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$										0.012
										[]0.05]
$\ln(1+Flow_{m,t})$							0.264***	0.150***	0.151***	0.127***
							[3.53]	[3.91]	[3.32]	[3.37]
$\ln(1+Flow_{m,t-1})$			0.280***	0.136***	0.248***	0.130***	0.159***	0.091**	0.077	0.081*
			[4.57]	[3.13]	[4.15]	[2.99]	[3.08]	[2.17]	[1.54]	[1.75]
Adjusted R^2	0.198	0.702	0.198	0.702	0.198	0.702	0.201	0.703	0.692	0.698
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table reports panel DOLS estimates of the relationship between fund manager compensation and key variables, fee revenue, AUM, return performance, and fund flows, accounting for co-integration. The dependent variable is the natural logarithm of manager compensation in year t. In Panel A (Panel B), the main explanatory variable is the natural logarithm of fee revenue in year $t-1$ (the natural logarithm of AUM at the end of year $t-1$). Additional explanatory variables include the natural logarithm of one plus annual fund returns, abnormal returns relative to Morningstar style indexes, abnormal returns relative to AUM-weighted category peers, and fund flows, all measured at the manager level for years t and $t-1$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

pass-through from fund revenues to manager compensation and a concave relation between the two. The coefficient on fund performance in year $t-1$ is positive but insignificant, suggesting that past fund performance has little direct effect on compensation in year t beyond its indirect impact through fee revenue by the end of year $t-1$.

In Column (2) of Panel A, after including manager fixed effects, the estimated pay-revenue sensitivity declines from 0.275 to 0.170 but remains statistically significant. This pattern is highly robust across alternative specifications reported in Columns (1) through (8). Compared with Column (1), Column (2) represents the main specification, as controlling for manager fixed effects isolates the contractual structure specific to each fund manager rather than capturing cross-sectional differences across managers. The coefficient on $\ln(1+R^{gross}_{m,t-1})$ remains insignificant, indicating that neither gross fund returns nor excess returns relative to the market benchmark have a meaningful incremental effect on manager compensation once fee revenue is accounted for.

In Columns (3) and (4) of Panel A, we replace fund performance over year $t-1$ with fund flows as the short-term driver of deviations from the long-run pay-revenue relationship. Consistent with the earlier specifications, after including manager fixed effects, the estimated pay-revenue sensitivity declines from 0.282 to 0.173 but remains statistically significant. In contrast to return performance, however, the coefficient on $\ln(1+Flow_{m,t-1})$ is positive and significant, indicating that fund flows have an additional and economically meaningful effect on manager compensation even after accounting for fee revenue. This strongly supports **Hypothesis 3(a)**.

In Columns (5) and (6) of Panel A in Table 3, we include both the one-year lagged return performance and fund flow at the manager level in the DOLS regression (3.3). We observe that the results are strongly consistent with those in Columns (1) through (4). After including manager fixed effects, the estimated pay-revenue sensitivity declines from 0.282 to 0.175 but remains statistically significant. In Column (6) with manager fixed effect controlled for, the coefficient on $\ln(1+R^{gross}_{m,t-1})$ remains insignificant, while the coefficient on $\ln(1+Flow_{m,t-1})$ is positive and significant. This further supports **Hypothesis 3(a)**. These results indicate that any effect of past fund performance on compensation primarily operates through its influence on fee revenue, whereas fund flows exert an additional, significant positive effect on total compensation. Columns (7) and (8) confirm that these findings remain robust when contemporaneous return performance and fund flows are included in the specification.

Importantly, Columns (9) and (10) replace the gross fund return $\ln(1+R^{gross}_{m,t-1})$ with two alternative measures of abnormal performance, while controlling for manager fixed effects. Specifically, $\ln(1+R^{ex,ms}_{m,t-1})$

measures the abnormal return relative to the corresponding Morningstar style index, and $\ln(1 + R_{m,t-1}^{ex,ms(-m)})$ measures the abnormal return relative to the AUM-weighted average return of peer funds within the same Morningstar investment category. The estimation results remain virtually unchanged in both economic magnitude and statistical significance compared with those in Columns (2), (4), (6), and (8).

Overall, the findings in Panel A of Table 3 are consistent with Ibert et al. (2018), who document that mutual fund manager compensation is primarily determined by manager-level fee revenue, while the performance-sensitive component beyond fee revenue has limited explanatory power for total pay. Unlike their study, however, on top of return performance, our analysis explicitly focuses fund flows, which exert a distinct and significant influence on compensation outcomes.

It is worth discussing the economic magnitude of the estimated effects. Across all econometric specifications and corresponding estimates, the sensitivity of pay to revenue remains around 0.19 when manager fixed effects are included. Incorporating manager fixed effects is essential for accurately identifying and estimating the average pay-revenue sensitivity that captures the contractual structure specific to each fund manager. Our estimated pay-revenue sensitivity of 0.19 for U.S. mutual funds implies that a 1% increase in fee revenue leads to an approximate 0.19% increase in manager compensation. This suggests that fund managers capture only a modest share of the incremental fee revenue they generate. Nonetheless, the absolute magnitude remains economically meaningful. For reference, the median manager-level fee revenue in our sample is approximately \$4.93 million (computed as $e^{15.41}$), while the median manager compensation is about \$534,988 (computed as $e^{13.19}$). Consider a median manager whose fee revenue doubles from \$4.93 million to \$9.86 million. Based on the estimated elasticity, the manager's compensation would increase from \$534,988 to roughly \$610,296, since $\ln(610,296) - \ln(534,988) = 0.19 \times [\ln(9.86) - \ln(4.93)]$. Thus, the manager captures only \$75,308 of the \$4.93 million revenue increase, about 1.53% of the additional revenue, while the remaining 98.47% accrues to the fund family. Consequently, the manager's pay-to-revenue share declines from 10.85% to 6.19%.

Role of AUM in Manager Compensation. In Panel B of Table 3, we replace fee revenue with AUM, and obtain results that closely mirror those in Panel A, both economically and statistically. The dependence of a manager's compensation on AUM is significantly positive yet strongly concave, with the estimated elasticity around 0.28 without manager fixed effects and around 0.19 when they are included, consistently across specifications. As in Panel A, the coefficients on one-year lagged return performance remain positive but statistically insignificant, whereas the coefficients on one-year lagged fund flows remain

Table 4: DOLS regressions of manager compensation on revenue, AUM, returns, and flows in the subsample without AUM reallocation among managers.

	(1)	(2)	(3)	(4)
	$\ln(Pay_{m,t})$		$\ln(Pay_{m,t})$	
$\ln(Rev_{m,t-1})$	0.308***	0.228***		
	[12.18]	[6.95]		
$\ln(A_{m,t-1})$			0.303***	0.227***
			[12.44]	[7.08]
$\ln(1+R^{gross}_{m,t})$	0.553	0.201	0.558	0.215
	[1.44]	[1.34]	[1.51]	[1.42]
$\ln(1+R^{gross}_{m,t-1})$	0.378*	0.095	0.225	−0.036
	[1.70]	[0.51]	[0.87]	[−0.20]
$\ln(1+Flow_{m,t})$	0.279***	0.152***	0.238***	0.154***
	[3.00]	[3.31]	[2.68]	[3.44]
$\ln(1+Flow_{m,t-1})$	0.283***	0.185***	0.138*	0.085*
	[3.73]	[3.61]	[1.84]	[1.75]
Adjusted R^2	0.223	0.730	0.227	0.731
Observations	6,500	6,500	6,500	6,500
Manager FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes

Notes. This table examines the relation between fund manager compensation and revenue, AUM, return performance, and fund flows in the subsample without AUM reallocation among managers. The dependent variable is the natural logarithm of the manager's total compensation in year t. The explanatory variables include the natural logarithm of revenue generated by the manager in year $t-1$, the natural logarithm of manager-level AUM measured in the last month of year $t-1$, the natural logarithm of manager-level annual fund returns in years t and $t-1$, and the natural logarithm of manager-level annual fund flows in years t and $t-1$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

statistically significantly positive even after controlling for AUM. These findings reinforce the view that return performance mainly influences compensation through its impact on AUM, while fund flows exert a distinct and additional positive effect. The consistency across the two panels is expected because mutual fund fee rates are highly persistent, implying that variation in fee revenue primarily reflects changes in AUM.

Further Evidence on the AUM Channel for Returns and Flows. To further strengthen the evidence that past returns and fund flows affect managers' compensation primarily through their mechanical impact on AUM, and that compensation is contractually tied to AUM, we repeat the analysis in Tables 3 using a subsample of manager-year observations in which AUM reallocation is absent.

When AUM reallocation occurs, changes in manager-level AUM reflect discretionary decisions by fund families rather than the mechanical effects of past returns or fund flows. As a result, a positive association between AUM or revenue changes and past performance may arise from family-level reallocation toward better-performing managers, rather than from returns or flows mechanically increasing AUM.

To isolate the mechanical AUM channel and construct a clean test, we restrict attention to manager-year observations in which the set of fund shares overseen by manager m remains unchanged in year $t-1$. In

Table 5: Relation of compensation growth with return performance and fund flow.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$\Delta \ln(Pay_{m,t})$									
$\ln(1+Flow_{m,t-1})$	0.156***	0.154***			0.131***	0.129***	0.143***	0.154***	0.131***	0.127***
	[9.03]	[7.13]			[8.78]	[6.62]	[7.72]	[6.80]	[6.57]	[4.80]
$\ln(1+Flow_{m,t-2})$	−0.029	−0.019			−0.022	−0.012	−0.028	−0.003	−0.021	0.007
	[−1.63]	[−0.94]			[−1.25]	[−0.58]	[−1.00]	[−0.11]	[−0.79]	[0.29]
$\ln(1+R^{gross}_{m,t-1})$			0.389***	0.432***	0.315***	0.363***				
			[4.86]	[4.61]	[4.19]	[4.08]				
$\ln(1+R^{gross}_{m,t-2})$			0.137	0.163	0.092	0.111				
			[1.55]	[1.56]	[1.03]	[1.14]				
$\ln(1+R^{ex,ms}_{m,t-1})$							0.537***	0.529***		
							[4.41]	[4.14]		
$\ln(1+R^{ex,ms}_{m,t-2})$							0.048	0.010		
							[0.34]	[0.08]		
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$									0.483***	0.591***
									[3.79]	[4.99]
$\ln(1+R^{ex,ms\,(-m)}_{m,t-2})$									0.108	0.194
									[0.84]	[1.38]
Adjusted R^2	0.076	0.134	0.076	0.135	0.082	0.140	0.082	0.148	0.081	0.148
Observations	10,500	10,500	10,500	10,500	10,500	10,500	9,500	9,500	9,500	9,500
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines the relation of total pay growth with return performance and fund flows. The dependent variable is the growth in fund managers' total pay over year t, calculated as the year-over-year change in the natural logarithm of a fund manager's total pay in year t relative to year $t-1$. As in Table 3, annual manager compensation is constructed as the sum of quarterly compensation within the year. To ensure comparability and avoid cases in which managers are employed for only part of the year, we require all quarterly compensation observations to be positive, allowing for a well-defined and meaningful measure of compensation growth. The independent variables comprise the natural logarithm of the annual fund flows at the manager level for years $t-1$ and $t-2$, the natural logarithm of one plus the annual fund returns at the manager level for the same years $t-1$ and $t-2$, the natural logarithm of one plus the annual fund excess returns relative to the returns from Morningstar style indexes for the same years $t-1$ and $t-2$, as well as the natural logarithm of one plus the annual fund excess returns relative to the AUM-weighted returns from Morningstar investment category peers for the same years $t-1$ and $t-2$. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

addition, because fund-level AUM is allocated across co-managers and manager-level AUM is used as weights to construct manager-level returns and flows, we further require that the number of co-managers remains constant in year $t-1$.

As shown in Table 4, the results in Table 3 remain robust when we condition on the absence of AUM reallocation across managers. Columns (2) and (4) show that the estimated sensitivities of compensation to fee revenue and AUM are similar in magnitude to, and in fact slightly larger than, the corresponding estimates in Table 3. In this subsample, fund flows continue to have a strong and statistically significant additional effect on managers' pay growth, whereas return performance has little additional effect after controlling for AUM or fee revenue. These findings provide further robust support for **Hypothesis 3(a)**.

Role of AUM Growth in Manager Compensation Growth. We now turn to the error-correction model for manager compensation as a function of return performance and fund flows, as specified in regression (3.9). Table 5 displays the estimation results from the regression. In the regressions, we incorporate year

fixed effects to adjust for aggregate changes in compensation growth rate, return performance, and fund flows that are common across all managers. As in the panel DOLS specifications in Tables 3 and 4, the inclusion of manager fixed effects is essential to isolate within-manager contractual sensitivities and to ensure that the estimates reflect the compensation structure faced by an individual fund manager rather than cross-sectional differences across managers. As illustrated in Table 5, the percentage change in a manager's compensation from year $t-1$ to t is significantly and positively associated with the return performance and fund flow of the same fund manager during year $t-1$. Specifically, in Columns (2), (6), (8), and (10), where both manager and year fixed effects are applied, the coefficient for $\ln(1+Flow_{m,t-1})$ is consistently estimated to range roughly between 0.13 and 0.16, exhibiting robust statistical significance across different econometric specifications. Furthermore, in Columns (4) and (6), where both manager and year fixed effects are included, the coefficient on $\ln(1+R^{gross}_{m,t-1})$ is estimated to be 0.432 and 0.363, respectively, and is highly statistically significant across alternative econometric specifications. Importantly, Columns (8) and (10) show that the estimated coefficients on log annual fund excess returns relative to Morningstar style index returns for year $t-1$, $\ln(1+R^{ex,ms}_{m,t-1})$, and on log annual fund excess returns relative to the AUM-weighted returns of Morningstar investment-category peers for year $t-1$, $\ln(1+R^{ex,ms(-m)}_{m,t-1})$, are 0.529 and 0.591, respectively. These coefficients are slightly larger than those on gross returns, likely reflecting differences in scaling between the dependent variables.

These effects of fund flows and (excess) returns are also economically significant. From Panel B of Table 1, the average standard deviation (SD) for a manager's $\ln(1+Flow_{m,t-1})$ is 0.315, and for $\ln(1+R^{gross}_{m,t-1})$, it is 0.201. A one-standard-deviation increase in fund flows, corresponding to an increase of 0.315 in $\ln(1+Flow_{m,t-1})$, is associated with an approximately 4.73% increase in manager compensation (computed as 0.315×0.15). Similarly, a one-standard-deviation increase in return performance, corresponding to an increase of 0.20 in $\ln(1+R^{gross}_{m,t-1})$, is associated with roughly an 8% increase in manager compensation (computed as 0.20×0.40).

Under the mechanical AUM channel, as formalized in Section 3, conditioning on $AUM_Reallocation_{m,t} = 0$ implies that once $\Delta \ln(A_{m,t-1})$ is included in regression (3.9), past returns $\ln(1+R_{m,t-1})$ and past flows $\ln(1+Flow_{m,t-1})$ should no longer have significant independent explanatory power for compensation growth. Panel A of Table 6 shows that the previously significant positive effects of lagged flows and returns, estimated at 0.189 (with a t-statistic of 4.14) and 0.428 (with a t-statistic of 2.90), respectively, become statistically indistinguishable from zero once $\Delta \ln(A_{m,t-1})$ is included. Specifically, the corresponding coefficients decline to -0.086 (with a t-statistic of -0.93) for flows and 0.148 (with a t-statistic of 1.34) for

Table 6: Compensation growth and AUM growth with and without reallocation.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Compensation growth and AUM growth without AUM reallocation							
	$\Delta \ln(Pay_{m,t})$							
$\ln(1+Flow_{m,t-1})$	0.172***	0.189***			−0.171	−0.086		
	[4.15]	[4.14]			[−1.45]	[−0.93]		
$\ln(1+R^{gross}_{m,t-1})$			0.467***	0.428***			0.222	0.148
			[4.04]	[2.90]			[1.59]	[1.34]
$\Delta \ln(A_{m,t-1})$					0.333***	0.278***	0.239***	0.265***
					[3.24]	[3.34]	[3.54]	[3.08]
Adjusted R^2	0.144	0.290	0.147	0.290	0.142	0.292	0.143	0.292
Observations	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel B: Compensation growth and AUM growth around AUM reallocation					
	$\ln(Pay_{m,t+1}/Pay_{m,t-1})$					
$\Delta \ln(A_{m,t})$	0.132***	0.102***	0.122***	0.106***	0.106***	0.084***
	[5.70]	[3.49]	[5.52]	[3.37]	[4.74]	[2.83]
$\ln(1+Flow_{m,t-1})$	0.063**	0.135***			0.054*	0.117***
	[2.35]	[3.61]			[2.02]	[3.10]
$\ln(1+R^{gross}_{m,t-1})$			0.349***	0.327***	0.333***	0.276***
			[3.20]	[3.31]	[3.07]	[3.30]
Adjusted R^2	0.083	0.294	0.087	0.295	0.088	0.297
Observations	3,600	3,600	3,600	3,600	3,600	3,600
Manager FE	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes. Panel A examines the relation of total pay growth with AUM growth. We focus on the subsample without AUM reallocation among managers. Specifically, we require that there be no change in the set of fund shares overseen by manager m or in the number of co-managers for manager m in year $t-1$. The dependent variable is the compensation growth of fund managers in year t, calculated as the difference in the natural log of the fund manager's labor income between year t and year $t-1$. The independent variables include the natural log of the annual fund flows at the manager level in year $t-1$, the natural log of the annual fund returns at the manager level in year $t-1$, and the growth of AUM in year $t-1$, calculated as the difference in the natural log of AUM between the last month of year $t-1$ and the last month of year $t-2$. Panel B examines the relation between total pay growth and AUM growth around AUM reallocation. We require that an AUM reallocation occurs during year t. The dependent variable is the compensation growth of fund managers around an AUM reallocation, calcuated as the difference in the natural log of the fund manager's labor income between year $t+1$ and year $t-1$. The independent variables are the AUM growth of the fund manager in year t, the natural logarithm of one plus the annual fund flows for year $t-1$, and the natural logarithm of one plus the annual fund returns for year $t-1$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

returns. Panel B of Table 6 conducts a placebo test of the mechanical AUM channel. Conditioning instead on manager-year observations in which AUM reallocation does occur in year t, the coefficients on lagged flows and returns remain significantly positive even after $\Delta \ln(A_{m,t-1})$ is included in regression (3.9). This contrast confirms that the attenuation documented in Panel A operates specifically through the mechanical AUM channel and not through discretionary AUM reallocation by fund families.

Robustness of Results. We conduct a comprehensive set of additional tests to assess the robustness of our findings on the role of AUM in determining fund managers' compensation. Our main results remain unchanged when we (i) extend the evaluation horizons for returns and fund flows; (ii) measure return performance using risk-adjusted abnormal returns (alphas); (iii) measure return performance using excess

Table 7: Longer performance evaluation periods.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\ln(Pay_{m,t})$							
$\ln(Rev_{m,t-1})$	0.315***	0.199***						
	[12.17]	[6.75]						
$\ln(Rev_{m,t-5})$			0.275***	0.124***				
			[11.27]	[4.26]				
$\ln(A_{m,t-1})$					0.304***	0.200***		
					[12.56]	[7.21]		
$\ln(A_{m,t-5})$							0.279***	0.141***
							[12.12]	[5.22]
$\ln(1+R^{gross}_{m,t})$	0.395	−0.016	0.355	−0.105	0.416	0.003	0.388	−0.064
	[1.46]	[−0.14]	[1.20]	[−0.90]	[1.55]	[0.03]	[1.33]	[−0.57]
$\ln(1+R^{gross}_{m,t-1})$	0.485**	0.252	0.632**	0.348**	0.334	0.245	0.658**	0.363**
	[2.20]	[1.47]	[2.36]	[2.07]	[1.63]	[1.46]	[2.36]	[2.14]
$\ln(1+R^{gross}_{m,t-2})$	0.371	0.111	0.689***	0.283	0.436*	0.128	0.763***	0.374*
	[1.45]	[1.06]	[2.88]	[1.65]	[1.76]	[1.16]	[3.11]	[1.86]
$\ln(1+R^{gross}_{m,t-3})$	0.328**	0.124	0.524***	0.224*	0.360**	0.130	0.595***	0.250*
	[2.10]	[0.91]	[3.21]	[1.73]	[2.58]	[0.99]	[3.45]	[1.91]
$\ln(1+R^{gross}_{m,t-4})$	0.089	0.085	0.259	0.153*	0.124	0.081	0.221	0.152*
	[0.70]	[1.29]	[1.57]	[2.03]	[0.88]	[1.22]	[1.29]	[2.03]
$\ln(1+Flow_{m,t})$	0.225***	0.081	0.192**	0.027	0.187**	0.076	0.164**	0.036
	[3.38]	[1.51]	[2.75]	[0.48]	[2.72]	[1.44]	[2.43]	[0.62]
$\ln(1+Flow_{m,t-1})$	0.213***	0.148**	0.316***	0.167***	0.021	0.047	0.292***	0.175***
	[3.03]	[2.50]	[4.58]	[2.79]	[0.30]	[0.84]	[4.16]	[3.00]
$\ln(1+Flow_{m,t-2})$	0.032	−0.022	0.286***	0.104**	0.021	−0.022	0.279***	0.103**
	[0.89]	[−0.58]	[5.14]	[2.09]	[0.59]	[−0.61]	[5.35]	[2.13]
$\ln(1+Flow_{m,t-3})$	0.055	0.018	0.192***	0.088***	0.049	0.017	0.144***	0.078***
	[1.51]	[0.65]	[5.36]	[2.87]	[1.29]	[0.65]	[4.29]	[2.78]
$\ln(1+Flow_{m,t-4})$	0.077	0.092	0.218***	0.183***	0.077	0.089	0.140***	0.152***
	[1.63]	[1.64]	[3.54]	[3.91]	[1.62]	[1.59]	[2.80]	[3.72]
Adjusted R^2	0.235	0.735	0.208	0.731	0.236	0.735	0.213	0.731
Observations	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

Notes. This table examines the relation of fund manager compensation with revenue and performance with longer performance evaluation periods. The dependent variable is the natural log of the fund manager's labor income in year t. The independent variables include the natural log of the revenue generated by the manager in years $t-1$ and $t-5$, the natural log of the AUM at the manager level in the last month of years $t-1$ and $t-5$, the natural log of the annual fund returns at the manager level in years t, $t-1$, $t-2$, $t-3$, and $t-4$, the natural log of the annual fund flows at the manager level in years t, $t-1$, $t-2$, $t-3$, and $t-4$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

returns relative to funds' self-declared benchmarks; (iv) restrict the sample to fund managers with little or no ownership stakes in the funds they oversee; (v) incorporate assets and revenues from SMAs and CITs, (vi) restrict the sample to fund managers who exclusively manage active equity funds, and (vii) exclude observations from a major mutual fund center.

First, we show the main results are robust to extending the evaluation horizons for returns and fund flows, similar to Ibert et al. (2018). Columns (1) – (4) of Table 7 extend the baseline regressions in Table 3 by including fund manager returns and fund flows from years $t-1$, $t-2$, $t-3$, and $t-4$ as additional explanatory variables. In contrast with Ibert et al. (2018), who focus solely on multi-year return horizons, our

empirical design expands the scope by incorporating lagged fund flows over the same extended horizons, allowing us to assess both channels jointly.

Column (2) of Table 7 mirrors the results in Columns (2), (4), and (6) of Panel A in Table 3. With manager fixed effects, $\ln(Pay_{m,t})$ is not significantly related to lagged returns, even up to $t-4$, after controlling for prior-year fee revenue $\ln(Rev_{m,t-1})$. By contrast, compensation remains significantly and positively related to prior-year fund flows $\ln(1+Flow_{m,t-1})$. Columns (3) and (4) replace prior-year fee revenue, $\ln(Rev_{m,t-1})$, with a longer-lagged fee revenue, $\ln(Rev_{t-5})$, which is measured earlier than all additional return and flow controls in the regression. In Column (4), even after manager fixed effects are included, lagged returns up to $t-4$ become statistically significant after controlling for $\ln(Rev_{m,t-1})$. Columns (5) – (8) show similar results with fee revenue replaced with AUM. Taken together, these results provide strong and robust support for the hypothesis that return performance and fund flows affect manager compensation primarily through their mechanical effects on AUM and, therefore, on fee revenue. Reinforcing the evidence in Table 3, they reject **Hypothesis 1(a)** and support **Hypothesis 1(b)**, with one exception: fund flows exert significant additional positive effects on compensation beyond what is explained by AUM.

These findings, particularly the incremental effect of fund flows conditional on AUM, indicate that manager compensation is not primarily driven by investment skill. Instead, it is largely influenced by components of fund flows unrelated to investment skill. This helps explain why only a small fraction of incremental fee revenue is passed through to managers and aligns with the literature emphasizing the role of marketing and distribution in shaping capital allocation. More broadly, the results contribute to the debate on the relative importance of investment skill versus salesmanship skill in the asset management industry (e.g., Roussanov, Ruan and Wei, 2021; Chen, Jiang and Xiaolan, 2025).

Second, we address the concern that mutual funds may base manager compensation on risk-adjusted abnormal returns (alphas), rather than on gross returns, excess returns relative to the market,[19] or excess returns relative to the corresponding Morningstar benchmark returns reported in Table 3. To directly test whether compensation responds to risk-adjusted return performance beyond fee revenue or AUM, we construct two alpha measures: (i) the CAPM alpha relative to the S&P 500 index return and (ii) the Vanguard-index alpha relative to returns on a broad set of Vanguard index fund benchmark portfolios. The results are unchanged. As reported in Table 8, the coefficients on these risk-adjusted abnormal returns remain statistically insignificant once fee revenue or AUM is included in the DOLS regressions.

Third, we address the concern that mutual funds may base manager compensation on excess returns

[19] Because the regressions include year fixed effects, replacing gross returns with excess returns relative to any common benchmark, such as the market portfolio, does not alter the results.

Table 8: DOLS regressions of manager compensation on revenue, AUM, risk-adjusted abnormal returns (alphas), and flows.

	(1)	(2)	(3)	(4)
	$\ln(Pay_{m,t})$			
$\ln(Rev_{m,t-1})$	0.220***	0.222***		
	[8.09]	[9.31]		
$\ln(A_{m,t-1})$			0.218***	0.221***
			[8.03]	[9.38]
$\ln(1+R_{m,t}^{abn,capm})$	0.361		0.268	
	[1.03]		[0.81]	
$\ln(1+R_{m,t-1}^{abn,capm})$	0.246		0.400	
	[0.62]		[1.24]	
$\ln(1+R_{m,t}^{abn,van})$		0.005		−0.078
		[0.02]		[−0.29]
$\ln(1+R_{m,t-1}^{abn,van})$		0.349		0.435
		[1.00]		[1.50]
$\ln(1+Flow_{m,t})$	0.106***	0.128***	0.098**	0.115***
	[2.32]	[2.84]	[2.29]	[3.03]
$\ln(1+Flow_{m,t-1})$	0.144***	0.173***	0.043*	0.058*
	[2.74]	[3.71]	[1.75]	[1.84]
Adjusted R^2	0.758	0.762	0.758	0.761
Observations	9,500	9,500	9,500	9,500
Manager FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Notes. This table focuses on risk-adjusted abnormal returns (alphas). The dependent variable is the natural log of the fund manager's labor income in year t. The independent variables include the natural log of the revenue generated by the manager in year $t-1$, the natural log of the AUM at the manager level in the last month of year $t-1$, the natural log of the annual fund performance at the manager level in years t and $t-1$, and the natural log of the annual fund flows at the manager level in years t and $t-1$. We measure return performance using CAPM alphas and alphas adjusted for systematic risk factors proxied by Vanguard indices. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

relative to their self-declared benchmarks, rather than on gross returns, excess returns relative to the market, or excess returns relative to the corresponding Morningstar benchmark returns reported in Table 3. To this end, we replicate the main analysis using excess returns relative to self-reported benchmarks. The results, reported in Table OA.9 of Online Appendix 3, closely mirror those in Tables 3 and 5, confirming that our conclusions are robust to alternative measures of return performance.

Fourth, we address the concern that the finding that return performance has, on average, little additional effect on manager compensation may reflect managers' ownership stakes in the funds they oversee. Fund managers sometimes hold ownership stakes in the funds they manage (e.g., Khorana, Servaes and Wedge, 2007). Such ownership can create direct return-based incentives that substitute for return-performance-based cash compensation, potentially weakening the need for fund companies to tie managerial pay explicitly to return performance. To address this concern, we conduct a supplemental analysis using information on fund manager ownership stakes. Specifically, we collect manager-level ownership data from mutual fund Statements of Additional Information (SAI), which disclose the dollar range of a manager's ownership in

Table 9: Fund managers with low ownership in their funds.

	(1)	(2)	(3)	(4)
	$\ln(Pay_{m,t})$		$\Delta \ln(Pay_{m,t})$	
$\ln(Rev_{m,t-1})$	0.239^{***}	0.135^{**}		
	[7.47]	[3.02]		
$\ln(1+Flow_{m,t})$	0.320^{**}	0.037		
	[2.49]	[0.51]		
$\ln(1+Flow_{m,t-1})$	0.223	0.057	0.117^{***}	0.123^{**}
	[1.68]	[0.81]	[2.92]	[2.28]
$\ln(1+Flow_{m,t-2})$			-0.014	-0.010
			$[-0.50]$	$[-0.31]$
$\ln(1+R^{gross}_{m,t})$	0.463	-0.198		
	[0.93]	$[-0.97]$		
$\ln(1+R^{gross}_{m,t-1})$	0.328	0.033	0.447^{***}	0.413^{**}
	[0.54]	[0.17]	[3.98]	[2.39]
$\ln(1+R^{gross}_{m,t-2})$			0.101	0.093
			[0.69]	[0.57]
Adjusted R^2	0.159	0.723	0.078	0.172
Observations	3,500	3,500	3,500	3,500
Manager FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes

Notes. This table examines the compensation of fund managers with low ownership in their funds. We focus on managers whose fund ownership is below the median stake of $75,000. Columns (1) and (2) explore the relationship between fund manager compensation and variables such as fee revenue, return performance, and fund flow, utilizing panel DOLS regressions for co-integration relationships. Columns (3) and (4) examine the relation of total pay growth with return performance and fund flows. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 2005 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

the funds they oversee. This data collection effort, described in detail in Section 1 of the Online Appendix, combines large language model (LLM)-based text extraction with extensive manual verification to ensure accuracy and completeness. At the manager-year level, the median ownership stake is $75,000, and approximately 40% of manager-year observations report zero ownership.

In Table 9, we restrict the analysis to managers with little or no reported ownership, defined as those with midpoint ownership values of $75,000 or less or with no disclosed ownership stake. Columns (1) and (2) examine the relationship between compensation levels and fund revenue, flows, and return performance within this low-ownership-stake subsample. Columns (3) and (4) examine compensation growth and its relationship with fund flows and returns. Across all specifications, the results closely mirror those in the full sample. These findings suggest that our main results are unlikely to be driven by return-based incentives associated with managerial ownership stakes.

Fifth, typical regulation- and disclosure-based datasets on mutual funds' AUM do not include additional assets that managers may oversee in separately managed accounts (SMAs) and collective investment trusts (CITs). If these additional assets are substantial and their ratios to managers' mutual fund AUM are significantly correlated with mutual fund AUM itself, omitting them could bias our estimation of the

relationship between compensation and managers' mutual fund AUM. Importantly, this omission does not affect the finding that return performance has, on average, an insignificant additional effect on compensation after controlling for AUM or revenue, as shown in Table 3, because SMA and CIT returns are, by design, almost identical to those of their matched mutual funds overseen by the same managers. To address these concerns, we incorporate SMA and CIT data from Morningstar Direct, following the literature. Specifically, we match SMAs and CITs to corresponding mutual fund shares using Morningstar's StrategyID and require a return correlation of at least 99% between each SMA or CIT and its matched fund. In 2017, for example, SMA and CIT assets amounted to approximately 69% of CRSP mutual fund AUM in our sample; however, SMA and CIT are highly concentrated: they appear in only about 32% of manager-year observations over our sample, and most manager-years have no SMA or CIT assets.

To assess whether excluding SMA and CIT assets materially affects our estimates of the relationship between compensation and managers' mutual fund AUM (and revenue), we compare specifications using mutual fund revenues alone with those that incorporate AUM and revenues from SMAs and CITs. We define total AUM for manager m in year t, denoted by $A_{m,t}^{Total}$, as

$$A_{m,t}^{Total} = a_{m,t} A_{m,t}, \quad \text{with} \quad a_{m,t} \equiv \frac{\text{Total Assets}_{m,t}}{\text{Mutual Fund Assets}_{m,t}} \quad \text{and} \quad A_{m,t} \equiv \text{Mutual Fund AUM}_{m,t},$$

so that

$$\ln\left(A_{m,t}^{Total}\right) = \ln(a_{m,t}) + \ln(A_{m,t}).$$

If $\ln(a_{m,t})$ were strongly correlated with $\ln(A_{m,t})$, including $\ln(a_{m,t})$ could materially alter the estimated coefficients on $\ln(A_{m,t})$ and $\ln(Rev_{m,t})$. In our data, however, the correlation is essentially zero (less than 5 basis points), so any coefficient change reflects classical measurement error in the variables and implies attenuation bias. Yet, because the variance of demeaned $\ln(A_{m,t})$ is roughly nine times that of demeaned $\ln(a_{m,t})$, the implied attenuation is only about 10%. Table 10 shows that incorporating SMA and CIT AUM to consider the total AUM, along with the associated flows and returns, does not affect our main findings. Using SMA and CIT revenues directly yields similar results in the DOLS co-integration regressions when $\ln(Rev_{m,t})$, rather than $\ln(A_{m,t})$, is used as the dependent variable. Similar robustness results on the growth of a manager's total pay, $\Delta \ln(Pay_{m,t})$, can be found in Table OA.12 of Online Appendix 3.

Sixth, active equity fund managers may simultaneously manage other types of funds (e.g., index funds or bond funds). In this case, focusing only on active equity funds could bias the estimation of the relationships between total pay and AUM, revenue, flows, and return performance. To address this concern, we perform

Table 10: Incorporating SMAs and CITs in AUM, Revenue, Flow, and Return Measures.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\ln(Pay_{m,t})$							
$\ln(Rev_{m,t-1})$	0.275***	0.168***	0.182***	0.192***				
	[11.62]	[7.58]	[6.72]	[7.33]				
$\ln(A_{m,t-1})$					0.268***	0.170***	0.185***	0.193***
					[11.85]	[7.95]	[7.12]	[7.72]
$\ln(1+R^{gross}_{m,t})$	0.400	−0.117			0.392	−0.103		
	[1.56]	[−1.14]			[1.61]	[−1.00]		
$\ln(1+R^{gross}_{m,t-1})$	0.397**	0.157			0.346	0.050		
	[2.35]	[1.35]			[1.68]	[0.43]		
$\ln(1+R^{ex,ms}_{m,t})$			−0.154				−0.157	
			[−1.32]				[−1.35]	
$\ln(1+R^{ex,ms}_{m,t-1})$			0.127				0.070	
			[0.86]				[0.47]	
$\ln(1+R^{ex,ms\ (-m)}_{m,t})$				−0.055				−0.049
				[−0.30]				[−0.25]
$\ln(1+R^{ex,ms\ (-m)}_{m,t-1})$				0.036				−0.009
				[0.13]				[−0.05]
$\ln(1+Flow_{m,t})$	0.255***	0.114**	0.160***	0.132***	0.223***	0.113**	0.160***	0.131***
	[3.50]	[2.46]	[3.15]	[2.74]	[3.04]	[2.45]	[3.14]	[2.71]
$\ln(1+Flow_{m,t-1})$	0.297***	0.182***	0.174***	0.173***	0.143***	0.098**	0.073	0.070
	[6.19]	[4.15]	[3.30]	[3.43]	[2.82]	[2.22]	[1.31]	[1.34]
Adjusted R^2	0.195	0.709	0.693	0.698	0.196	0.709	0.693	0.698
Observations	10,500	10,500	9,500	9,500	10,500	10,500	9,500	9,500
Manager FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. In this table, we take into account separately managed accounts (SMAs) and collective investment trusts (CITs) when computing fee AUMs, revenues, return performance, and fund flows. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

a subsample analysis by excluding equity fund managers who simultaneously manage other types of funds (e.g., index funds, bond funds), focusing on managers who exclusively manage active equity funds. Specifically, Table OA.11 in Online Appendix 3 reports the results for managers who exclusively manage active equity funds. Columns (1) and (2) examine the relationship between compensation levels and revenue, flows, and return performance, while Columns (3) and (4) examine the relationship between compensation growth and flows and return performance. The results for this restricted subsample are consistent with those from the full sample, indicating that our main findings in Tables 3 and 5 continue to hold when focusing exclusively on active equity fund managers.

Seventh, our primary sample covers 28 states, and our secondary sample covers 17 states. Taken together, these datasets provide broader geographic coverage than is typical in the related literature. Nevertheless, because data from New York are unavailable, one may be concerned that our results do not fully capture compensation practices in major mutual fund centers such as New York.

We view this concern as unlikely to materially affect our main findings, for several reasons. First, the U.S. labor market for fund managers is highly fluid, making it unlikely that compensation contracts in

New York differ systematically from those elsewhere. Second, our sample includes the other largest mutual fund states, including Massachusetts, California, and Pennsylvania. If compensation structures in major mutual fund hubs were meaningfully different, excluding such hubs should materially affect our estimates. To assess this possibility, we re-estimate our main specifications after excluding fund managers located in Massachusetts. As shown in Table OA.10 in Online Appendix 3, the results corresponding to Tables 3 and 5 remain unchanged. This robustness check suggests that compensation arrangements in major mutual fund centers are broadly similar to those observed in other states and that our findings are not driven by the omission of any single large fund center.

AUM Is a Primary Driver but Not a Sufficient Statistic for Manager Compensation. As discussed in Section 3 and equation (3.10), the substantial decline in the coefficient on $\ln(AUM_{m,t})$ after controlling for manager fixed effects in Panel B of Table 3 suggests the presence of latent managerial skills that affect compensation but are not fully captured by AUM. Specifically, including manager fixed effects significantly reduces the estimated sensitivity of pay to AUM (or revenue): the coefficient on log AUM, denoted by $\ln(AUM_{m,t})$, (log revenue, denoted by $\ln(Rev_{m,t})$) declines from 0.278 to 0.182 (from 0.282 to 0.175) once manager fixed effects are added, as reported in Table 3.

Intuitively, this pattern indicates that a meaningful portion of the pay-revenue relationship reflects persistent manager-specific characteristics that are not fully captured by AUM or revenue, such as investment skill, reputation, or professional networks. These results underscore the importance of controlling for manager-specific heterogeneity to disentangle the component of compensation that varies with contemporaneous AUM or revenue from the component driven by stable managerial traits.

To strengthen our conclusions regarding **Hypothesis 1(c)**, we further examine heterogeneity in the estimated pay-to-AUM (or pay-to-revenue) sensitivity across different types of managers. As shown in Table 11, the decline in the revenue coefficient after controlling for manager fixed effects is substantially more pronounced among more established managers, particularly those with longer tenure, greater industry experience, and older age. Specifically, among managers in the top quintile of tenure, the coefficient declines from 0.392 to 0.188, compared with a smaller reduction from 0.244 to 0.151 among the remaining managers.

This sharper decline among more seasoned managers provides further evidence in support of the hypothesis that compensation is systematically shaped by latent managerial skill beyond what is captured by past AUM, revenue, returns, and flows. This pattern is intuitive: the dispersion in latent skill is likely wider among more experienced managers, and the correlation between latent skill and managed AUM is

Table 11: Relation between total pay and revenue with and without manager fixed effects.

	(1)	(2)	(3)	(4)
	Panel A: Heterogeneity across managers' tenure length			
	$\ln(Pay_{m,t})$		$\ln(Pay_{m,t})$	
Subsample	Short and medium tenure length		High tenure length	
$\ln(Rev_{m,t-1})$	0.244***	0.151***	0.392***	0.188***
	[9.25]	[7.81]	[8.37]	[2.70]
Controls	Yes	Yes	Yes	Yes
Adjusted R^2	0.184	0.741	0.184	0.702
Observations	8,400	8,400	2,100	2,100
Manager FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes
	Panel B: Heterogeneity across managers' experience in the financial industry			
	$\ln(Pay_{m,t})$		$\ln(Pay_{m,t})$	
Subsample	Low and medium experience		High experience	
$\ln(Rev_{m,t-1})$	0.257***	0.148***	0.343***	0.169**
	[10.29]	[5.26]	[8.02]	[2.10]
Controls	Yes	Yes	Yes	Yes
Adjusted R^2	0.189	0.705	0.193	0.708
Observations	6,600	6,600	1,600	1,600
Manager FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes
	Panel C: Heterogeneity across age of fund managers			
	$\ln(Pay_{m,t})$		$\ln(Pay_{m,t})$	
Subsample	Low and medium age		High age	
$\ln(Rev_{m,t-1})$	0.248***	0.147***	0.354***	0.151**
	[10.83]	[5.62]	[6.11]	[2.19]
Controls	Yes	Yes	Yes	Yes
Adjusted R^2	0.207	0.705	0.200	0.749
Observations	8,400	8,400	2,100	2,100
Manager FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes

Notes. This table explores the relationship between fund manager compensation and fee revenue, with and without manager fixed effects. The dependent variable is the natural logarithm of the fund manager's compensation for year t. The main independent variables comprise the natural logarithm of the fee revenue generated by the manager in year $t-1$ and the natural logarithm of one plus the annual fund return at the manager level for year $t-1$. Additional control variables include the natural logarithm of one plus the annual fund return at the manager level for years t and $t-1$ and the natural logarithm of one plus the annual fund flows at the manager level for years t and $t-1$. Panel A splits managers into two groups based on their tenure as fund managers in year $t-1$: short and medium tenure (quintiles 1 to 4) and long tenure (quintile 5). Panel B divides managers by their experience in the financial industry in year $t-1$: short and medium experience (quintiles 1 to 4) and long experience (quintile 5). Panel C groups managers based on their age in year $t-1$: lower and medium age (quintiles 1 to 4) and higher age (quintile 5). Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

correspondingly stronger for this group.

It is also noteworthy that the magnitude of the reduction in the revenue coefficient differs from that reported in Ibert et al. (2018, Table 2), who study the Swedish mutual fund industry. In their analysis, including manager fixed effects leads to only a modest decline in the revenue coefficient, from 0.141 to 0.123. A plausible explanation for this contrast is that managers in our U.S. sample tend to be more established, or that managerial compensation in the U.S. is more strongly linked to latent skills not fully captured by past AUM, returns, and flows. This contrast points to potentially important differences in labor market

structure, investor behavior, or compensation design between the U.S. and Sweden.

6.2 Decompose Total Compensation into Base Pay and Bonus

In this subsection, we present empirical tests of **Hypotheses 2(a)**, **2(b)**, and **2(c)**.

6.2.1 Relation of Base Pay and Bonus with AUM and Performance.

This section provides direct tests of **Hypothesis 2(a)**. The hypothesis yields two testable predictions. First, manager base pay depends primarily on AUM (or fee revenue), with past returns affecting base pay only through their impact on AUM; conditional on AUM (or revenue), past returns therefore have little additional effect on base pay. Second, while manager bonuses are also strongly linked to AUM (or revenue), returns exert an incremental and asymmetric effect on bonuses beyond their impact through AUM.

Levels of Base Pay and Bonus. We decompose a manager's total compensation into base pay and bonus and examine how each component relates to revenue (and thus AUM), return performance, and fund flows. We estimate panel DOLS specifications in which base pay or bonus is regressed on lagged fee revenue, return performance, and fund flows, with manager and year fixed effects.

Table 12 reports results using fee revenue, while Table OA.14 in Online Appendix 3 replaces revenue with AUM and yields very similar findings. Panel A of Table 12 shows that base pay, like total compensation, exhibits an economically and statistically significant long-run equilibrium (cointegration) relationship with fee revenue (and hence AUM), with a stable elasticity of approximately 0.132 across specifications that incorporate manager fixed effects. This evidence is consistent with the first part of **Hypothesis 2(a)**: base pay depends primarily on AUM (or revenue). Importantly, conditional on revenue, short-run deviations from the long-run base pay-revenue relationship are not significantly related to lagged return performance, whether measured by $\ln(1 + R^{gross}_{m,t-1})$ or by Morningstar-benchmarked excess returns $\ln(1 + R^{ex,ms}_{m,t})$ and $\ln(1 + R^{ex,ms\ (-m)}_{m,t-1})$. By contrast, lagged fund flows, measured by $\ln(1 + Flow_{m,t-1})$, have an additional positive and statistically significant association with base pay. This finding provides particularly strong support for **Hypothesis 3(a)**, indicating that the additional effect of fund flows on total pay operates mainly through base pay.

A manager's base pay responds to fee revenue in a highly concave manner, and this concavity is even more pronounced than that observed for total pay (see Table 3). Specifically, the estimated base-pay-to-revenue sensitivity of 0.132 is substantially smaller than the corresponding pay-to-revenue sensitivity

Table 12: DOLS regressions of base pay and bonus on revenue, AUM, returns, and flows.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel A: Panel DOLS for log base pay, denoted by $\ln(Base_{m,t})$											
$\ln(Rev_{m,t-1})$	0.224***	0.132***	0.226***	0.134***	0.226***	0.135***	0.228***	0.136***	0.136***	0.148***	0.136***	0.147***
	[11.98]	[6.73]	[11.83]	[7.39]	[11.86]	[6.79]	[12.07]	[6.61]	[6.23]	[6.88]	[6.03]	[6.56]
$\ln(1+R^{gross}_{m,t})$							0.299	−0.036				
							[1.61]	[−0.38]				
$\ln(1+R^{gross}_{m,t-1})$	0.429**	0.131			0.322*	0.072	0.244	0.057				
	[2.20]	[1.20]			[1.74]	[0.67]	[1.60]	[0.50]				
$\ln(1+R^{ex,ms}_{m,t})$											−0.233	
											[−1.26]	
$\ln(1+R^{ex,ms}_{m,t-1})$									0.114		−0.065	
									[0.97]		[0.52]	
$\ln(1+R^{ex,ms\,(-m)}_{m,t})$												−0.168
												[−1.13]
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$										0.117		0.018
										[1.21]		[0.12]
$\ln(1+Flow_{m,t})$							0.120*	0.029			0.051	0.056
							[1.91]	[0.69]			[1.30]	[1.54]
$\ln(1+Flow_{m,t-1})$			0.252***	0.115***	0.232***	0.111***	0.197***	0.105***	0.081**	0.086**	0.074**	0.074**
			[6.40]	[3.53]	[5.97]	[3.30]	[5.21]	[3.10]	[2.19]	[2.42]	[2.01]	[2.08]
Adjusted R^2	0.162	0.715	0.162	0.716	0.162	0.716	0.164	0.716	0.707	0.710	0.708	0.710
Observations	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	6,600	6,600	6,600	6,600
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B: Panel DOLS for log bonus, denoted by $\ln(Bonus_{m,t})$											
$\ln(Rev_{m,t-1})$	0.646***	0.274***	0.651***	0.270***	0.648***	0.272***	0.656***	0.296***	0.343***	0.250***	0.392***	0.292***
	[6.91]	[3.93]	[6.95]	[3.88]	[6.91]	[3.91]	[7.02]	[4.13]	[4.26]	[3.68]	[4.83]	[3.43]
$\ln(1+R^{gross}_{m,t})$							1.083	0.221				
							[0.85]	[0.55]				
$\ln(1+R^{gross}_{m,t-1})$	0.968*	0.578**			0.820	0.515**	0.935	0.342*				
	[1.76]	[2.19]			[1.44]	[2.09]	[0.87]	[1.80]				
$\ln(1+R^{abn,ms}_{m,t})$											0.143	
											[0.26]	
$\ln(1+R^{abn,ms}_{m,t-1})$									0.810**		0.652*	
									[1.96]		[1.75]	
$\ln(1+R^{abn,ms\,(-m)}_{m,t})$												0.124
												[0.23]
$\ln(1+R^{abn,ms\,(-m)}_{m,t-1})$										0.762**		0.575*
										[2.14]		[1.77]
$\ln(1+Flow_{m,t})$							0.696**	0.305**			0.412**	0.465**
							[2.47]	[2.57]			[2.37]	[2.51]
$\ln(1+Flow_{m,t-1})$			0.471	0.248	0.376	0.214	0.286	0.142	0.255	0.292	0.160	0.225
			[1.63]	[1.08]	[1.36]	[0.80]	[0.88]	[0.61]	[1.53]	[1.57]	[1.03]	[1.13]
Adjusted R^2	0.104	0.841	0.103	0.841	0.104	0.841	0.106	0.842	0.868	0.846	0.869	0.847
Observations	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300	6,600	6,600	6,600	6,600
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines the relation of the levels of base pay and bonus with fee revenue, return performance, and fund flows. In Panel A, the dependent variable is the natural log of the fund manager's base pay in year t. In Panel B, the dependent variable is the natural log of the fund manager's bonus in year t. The independent variables include the natural log of the revenue generated by the manager in year $t-1$, the natural log of one plus the annual fund return performance at the manager level in years t and $t-1$, and the natural log of the annual fund flows at the manager level in year t and $t-1$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

of 0.170. To illustrate the economic magnitude, the median manager-level revenue is approximately \$4.926 million (computed as $e^{15.41}$), while the median manager's base pay is \$344,552 (computed as

$e^{12.75}$). If fee revenue doubles from \$4.926 million to \$9.852 million, the manager's base pay increases from \$344,552 to approximately \$377,564, based on the calculation: $\ln(377{,}564) - \ln(344{,}552) = 0.132 \times (\ln(9.852) - \ln(4.926))$. Thus, the manager captures only about \$33,012 of the \$4.926 million increase in fee revenue through base pay.

Panel B of Table 12 reports the corresponding results for bonuses. Bonus pay, like total and base pay, exhibits an economically and statistically significant long-run (co-integrated) equilibrium relationship with fee revenue (and hence AUM), with an elasticity of approximately 0.274 across specifications that include manager fixed effects. This long-run bonus-revenue relationship is substantially steeper than that for base pay. Intuitively, this pattern is consistent with bonus pools being closely tied to fee revenue generation (and thus AUM), implying that bonuses respond more strongly to changes in fee revenue than base pay does.

Crucially, however, bonuses differ sharply from base pay in their sensitivity to return performance. Unlike base pay, short-run deviations from the long-run bonus–revenue equilibrium are significantly affected by lagged return performance. This result holds whether return performance is measured using gross returns ($\ln(1 + R^{gross}_{m,t-1})$) or using Morningstar-benchmarked abnormal returns ($\ln(1 + R^{abn,ms}_{m,t-1})$ and $\ln(1 + R^{abn,ms\ (-m)}_{m,t-1})$). By contrast, lagged fund flows ($\ln(1 + Flow_{m,t-1})$) have no statistically significant effect on bonuses once revenue and returns are controlled for. This finding provides additional support for **Hypothesis 3(a)**, indicating that the additional effect of fund flows on total pay operates almost entirely through base pay rather than bonuses.

Taken together, these results provide direct support for the second part of **Hypothesis 2(a)**. While bonuses are largely determined by AUM through fee revenue, return performance has an incremental effect on bonuses beyond its impact through AUM, and this additional sensitivity is absent from base pay. This pattern is consistent with contract-based views in which bonuses are the primary margin through which compensation responds to (benchmark-relative) return performance.

Base Pay and Bonus Growth. Building on equations (3.7) through (3.9), the estimated long-run equilibrium relationships between base pay (or bonus) and fee revenue (or AUM) imply that growth in both base pay and bonus should load systematically on return performance and fund flows. Table 13 reports the corresponding regressions of base pay growth and bonus growth on lagged return performance and lagged fund flows. The estimates in Table 13 show that growth in both base pay and bonus is positively and statistically significantly related to lagged fund flows in every specification. This pattern is consistent with flows capturing investor demand that expands AUM and fee revenue, thereby increasing the growth

Table 13: Relation of base bay growth and bonus growth with return performance and fund flow.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Panel A: Base pay growth, denoted by $\Delta \ln(Base_{m,t})$					
$\ln(1+Flow_{m,t-1})$	0.095***	0.089***			0.080***	0.080**	0.087***	0.079***
	[3.52]	[2.84]			[2.89]	[2.55]	[3.00]	[2.81]
$\ln(1+R^{gross}_{m,t-1})$			0.280***	0.295***	0.237***	0.269***		
			[5.26]	[5.08]	[4.21]	[4.54]		
$\ln(1+R^{ex,ms}_{m,t-1})$							0.374***	
							[3.39]	
$\ln(1+R^{ex,ms\ (-m)}_{m,t-1})$								0.462***
								[4.84]
Adjusted R^2	0.044	0.153	0.048	0.149	0.049	0.148	0.143	0.142
Observations	7,300	7,300	7,300	7,300	7,300	7,300	6,600	6,600
Manager FE	No	Yes	No	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			Panel B: Bonus growth, denoted by $\Delta \ln(Bonus_{m,t})$					
$\ln(1+Flow_{m,t-1})$	0.207***	0.202***			0.181***	0.182***	0.170***	0.173***
	[4.86]	[3.25]			[4.70]	[3.35]	[3.18]	[3.23]
$\ln(1+R^{gross}_{m,t-1})$			0.556***	0.529**	0.510**	0.591**		
			[2.91]	[2.34]	[2.54]	[2.06]		
$\ln(1+R^{ex,ms}_{m,t-1})$							0.637**	
							[2.55]	
$\ln(1+R^{ex,ms\ (-m)}_{m,t-1})$								0.692**
								[2.38]
Adjusted R^2	0.038	0.149	0.039	0.155	0.042	0.157	0.166	0.164
Observations	7,300	7,300	7,300	7,300	7,300	7,300	6,600	6,600
Manager FE	No	Yes	No	Yes	No	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines the relation of the growth in a manager's base pay and bonus with return performance and fund flows. In Panels A and B, the dependent variables are the growth in fund managers' base pay and bonus over year t, respectively, calculated as the year-over-year change in the natural logarithm of a fund manager's base pay or bonus in year t relative to year $t-1$. The independent variables include the natural logarithm of one plus the annual fund flows for year $t-1$, the natural logarithm of one plus the annual fund returns (gross returns, excess returns benchmarked against the returns from Morningstar style indexes, and excess returns benchmarked against the Morningstar investment category peers) for year $t-1$. For both panels, standard errors are double-clustered at both the manager and year levels, and the sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

rates of both base pay and bonus. Both base pay growth and bonus growth are likewise positively and significantly related to lagged return performance, whether performance is measured by $\ln(1+R^{gross}_{m,t-1})$ or by Morningstar-benchmarked excess returns, $\ln(1+R^{ex,ms}_{m,t})$ and $\ln(1+R^{ex,ms,(-m)}_{m,t-1})$. Overall, the evidence indicates that stronger performance predicts faster growth in both base pay and bonus, with most of this effect likely operating through the AUM channel documented in Panel A of Table 6.

Importantly, the magnitudes of these sensitivities differ across compensation components. Bonus growth tends to exhibit a stronger sensitivity to lagged return performance than total pay (see Table 6), which in turn is stronger than base pay growth. This pattern is consistent with the view that bonuses serve as the primary margin through which compensation responds to return performance outcomes, in addition to the AUM channel. Together, these findings provide baseline evidence in support of **Hypothesis 2(a)**. These baseline results also motivate a more granular analysis of the dynamics of base pay and bonus

in response to past returns and flows. We therefore turn next to tests that explicitly examine potential asymmetries in the return-pay relationship by estimating the same specifications separately for positive- and negative-return subsamples.

Asymmetric Relationship Between Pay Growth and Return Performance. **Hypothesis 2(a)** further predicts that the direct effect of returns on manager's compensation, especially the bonus component, is asymmetric, with bonuses responding more strongly to positive than to negative return performance. This asymmetry reflects the idea that bonuses are designed to reward superior performance but are downward rigid in response to poor performance, whereas base pay is primarily tied to AUM and adjusts more smoothly. To examine this implication, we estimate pay-growth regressions separately for subsamples with positive versus negative lagged returns. In addition, we conduct an analogous sample split based on positive versus negative lagged fund flows to assess whether compensation responds asymmetrically to changes in flows. We consider several measures of return performance, including gross returns, excess returns benchmarked against Morningstar style indexes, and excess returns measured relative to AUM-weighted peer performance within Morningstar investment categories.

Table 14 reports the results. Panel A shows that total pay growth exhibits pronounced asymmetry with respect to return performance. Across all return measures, compensation growth loads positively and significantly on lagged returns in the positive-return subsample, whereas the corresponding coefficients are small and statistically insignificant in the negative-return subsample. This pattern indicates that overall compensation growth is driven primarily by strong positive return realizations and responds only weakly to poor return performance.

Panels B and C clarify the source of this asymmetry. Panel B shows that base pay growth responds positively to lagged returns in both the positive- and negative-return subsamples, with coefficients of similar magnitude across the two groups. This suggests that base pay growth does not exhibit meaningful asymmetry with respect to return performance and instead adjusts more smoothly, consistent with base pay being tied primarily to AUM and fee revenue. By contrast, Panel C shows a sharp asymmetry in bonus growth. Bonus growth responds strongly and significantly to lagged returns in the positive-return subsample but exhibits little sensitivity to lagged returns in the negative-return subsample across all return measures. The magnitudes are economically large and robust across specifications, indicating that the asymmetric return sensitivity in total pay is driven almost entirely by the bonus component rather than base pay.

Table 14: Asymmetric relationship between fund manager pay growth and return performance.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Subsample	$R^{gross}_{m,t-1} < 0$	$R^{gross}_{m,t-1} \geq 0$	$R^{ex,ms}_{m,t-1} < 0$	$R^{ex,ms}_{m,t-1} \geq 0$	$R^{ex,ms\,(-m)}_{m,t-1} < 0$	$R^{ex,ms\,(-m)}_{m,t-1} \geq 0$	$Flow_{m,t-1} < 0$	$Flow_{m,t-1} \geq 0$
				Panel A: Total pay growth, denoted by $\Delta \ln(Pay_{m,t})$				
$\ln(1+Flow_{m,t-1})$	0.134**	0.113***	0.137***	0.089**	0.131**	0.091**	0.110**	0.153***
	[2.05]	[3.67]	[2.66]	[2.08]	[2.42]	[2.13]	[2.07]	[3.92]
$\ln(1+R^{gross}_{m,t-1})$	0.153	0.643***					0.464***	0.417***
	[0.87]	[3.47]					[3.50]	[2.75]
$\ln(1+R^{ex,ms}_{m,t-1})$			0.322	0.690**				
			[1.09]	[2.39]				
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$					0.233	0.801***		
					[1.26]	[2.95]		
Adjusted R^2	0.484	0.145	0.185	0.186	0.207	0.190	0.267	0.229
Observations	2,000	8,500	4,700	4,800	4,700	4,800	6,000	4,500
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
				Panel B: Base pay growth, denoted by $\Delta \ln(Base_{m,t})$				
$\ln(1+Flow_{m,t-1})$	0.111*	0.086**	0.071*	0.082**	0.088**	0.080**	0.066*	0.127**
	[1.71]	[2.13]	[1.81]	[2.27]	[2.17]	[2.29]	[1.85]	[2.25]
$\ln(1+R^{gross}_{m,t-1})$	0.231*	0.290**					0.275**	0.244**
	[1.77]	[2.43]					[2.21]	[2.49]
$\ln(1+R^{ex,ms}_{m,t-1})$			0.376*	0.365**				
			[1.92]	[2.34]				
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$					0.305*	0.423***		
					[1.94]	[2.62]		
Adjusted R^2	0.409	0.144	0.201	0.198	0.220	0.202	0.246	0.227
Observations	1,400	5,900	3,300	3,300	3,300	3,300	4,200	3,100
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
				Panel C: Bonus growth, denoted by $\Delta \ln(Bonus_{m,t})$				
$\ln(1+Flow_{m,t-1})$	0.202**	0.171**	0.180***	0.150**	0.177**	0.169**	0.168*	0.209**
	[2.17]	[2.07]	[2.80]	[2.34]	[2.52]	[2.43]	[1.81]	[2.33]
$\ln(1+R^{gross}_{m,t-1})$	0.119	0.793***					0.603***	0.583***
	[0.81]	[2.93]					[5.71]	[2.28]
$\ln(1+R^{ex,ms}_{m,t-1})$			0.268	0.862**				
			[0.95]	[2.43]				
$\ln(1+R^{ex,ms\,(-m)}_{m,t-1})$					0.171	0.978**		
					[1.03]	[2.37]		
Adjusted R^2	0.403	0.154	0.213	0.215	0.214	0.217	0.226	0.230
Observations	1,400	5,900	3,300	3,300	3,300	3,300	4,200	3,100
Manager FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines asymmetries in the relationship between fund manager pay growth and performance by estimating the specification separately across subsamples defined by whether managers' (excess) returns or flows are negative or non-negative. Panels A, B, and C report the results for total pay growth, base pay growth, and bonus growth, respectively. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 15: The relation between pay and tracking errors.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\ln(Pay_{m,t})$							
$Tracking\ Error^{ms}_{m,t-1}$	-4.549	-6.458^{**}	-1.217	-5.059^{**}				
	$[-1.11]$	$[-2.20]$	$[-0.32]$	$[-2.06]$				
$Tracking\ Error^{mkt}_{m,t-1}$					-2.726	-3.885^{**}	-0.719	-2.837^{*}
					$[-1.11]$	$[-2.08]$	$[-0.33]$	$[-1.73]$
$\ln(Rev_{m,t-1})$			0.314^{***}	0.199^{***}			0.285^{***}	0.180^{***}
			[10.69]	[6.62]			[10.64]	[6.88]
$\ln(1+R^{gross}_{m,t})$			0.223	-0.211			0.426	-0.158
			[1.05]	$[-1.53]$			[1.64]	$[-1.56]$
$\ln(1+R^{gross}_{m,t-1})$			0.327^{*}	0.101			0.431^{**}	0.108
			[1.51]	[0.74]			[2.19]	[0.64]
$\ln(1+Flow_{m,t})$			0.394^{***}	0.198^{***}			0.293^{***}	0.148^{***}
			[4.37]	[4.09]			[3.88]	[3.53]
$\ln(1+Flow_{m,t-1})$			0.373^{***}	0.158^{***}			0.327^{***}	0.188^{***}
			[5.41]	[3.21]			[6.27]	[4.12]
Adjusted R^2	0.067	0.679	0.182	0.687	0.096	0.696	0.197	0.689
Observations	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines the relationship between fund manager compensation and their tracking errors. In Columns (1) to (4), tracking error in year $t-1$ is measured as the standard deviation of monthly abnormal returns, benchmarked against the returns from Morningstar style indexes ($Tracking\ Error^{ms}_{m,t-1}$). In Columns (5) to (8), tracking error in year $t-1$ is measured as the standard deviation of monthly abnormal returns, benchmarked against market returns ($Tracking\ Error^{mkt}_{m,t-1}$). Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

The flow-based sample splits yield a markedly different pattern. Across Panels A, B, and C, compensation growth loads significantly on lagged fund flows in both the positive- and negative-flow subsamples, with coefficients of similar magnitude. There is no evidence of meaningful asymmetry in compensation growth with respect to fund flows. This finding indicates that compensation responds symmetrically to both increases and decreases in fund flows.

Taken together, the evidence in Table 14 provides direct and nuanced support for **Hypothesis 2(a)**. Compensation responds symmetrically to fund flows but asymmetrically to return performance, and this asymmetry arises almost entirely through bonuses rather than base pay. These results are consistent with incentive contracts in which bonuses are the primary margin for rewarding strong positive return performance, while base pay and flow-driven adjustments reflect smoother, revenue-based compensation mechanisms.

6.2.2 The Relation Between Pay and Tracking Errors

Linking bonuses to return performance relative to benchmarks can induce risk-shifting behavior by fund managers, which is detrimental to both fund families and their clients (e.g., Huang, Sialm and Zhang, 2011;

Lee, Trzcinka and Venkatesan, 2019). From a theoretical perspective, optimal compensation contracts should therefore incorporate penalties for excessive risk taking. In practice, such risk taking is commonly proxied by tracking error, which captures the volatility of active returns relative to a benchmark.

Consistent with the prior literature (e.g., Sialm, Starks and Zhang, 2015; Kaniel and Parham, 2017), we measure tracking error as the standard deviation of monthly active returns within a given year, where active returns are defined as fund returns in excess of either the fund's corresponding Morningstar benchmark return or the market return. As shown in Table 15, higher tracking error is associated with significantly lower compensation, even after controlling for fee revenue, return performance, and fund flows. These findings provide strong support for **Hypothesis 2(b)**.

6.2.3 Bonus-to-Total-Pay Ratio of Fund Managers

We first compare our bonus measure with the sparse text-based disclosures of contractual compensation structures in fund filings, which provides a cross-validation of the two sources of bonus information. Panel A of Table 16 shows that managers at funds reporting performance-based compensation have significantly higher bonus-to-total-pay ratios (Column (1)), whereas managers at funds reporting fixed-salary arrangements have significantly lower ratios (Column (5)). Because compensation contracts are largely set at the fund-family level and change infrequently, we focus on cross-sectional variation across managers employed by different funds, where the economically relevant variation in incentives arises.

We next examine how the bonus-to-total-pay ratio varies with manager characteristics on age, experience, and tenure, as predicted by **Hypothesis 2(c)**. Panel B of Table 16 shows that older managers, managers with longer tenure, and managers with greater industry experience receive a significantly higher fraction of total compensation in the form of bonuses. The magnitudes are economically meaningful and remain highly significant when manager fixed effects are included, indicating that the results also reflect within-manager changes over time rather than purely cross-sectional differences. These findings provide strong support for **Hypothesis 2(c)**.

Panel C of Table 16 reports analogous results for fund manager characteristics related to AUM size, star status, and activeness, and again provides strong support for **Hypothesis 2(c)**. Managers overseeing larger AUM receive a substantially higher bonus share, even after controlling for manager fixed effects. This is consistent with the evidence in Panel B, since managers with greater tenure, experience, or age also tend to oversee larger AUM. Similarly, star fund managers receive a significantly higher bonus share, even after controlling for manager fixed effects. Finally, managers pursuing more active investment strategies receive

Table 16: Relation between bonus-to-total-pay ratio and characteristics of managers and funds.

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: Self-reported compensation structure					
	$Bonus_{m,t}/Pay_{m,t}$					
$D^{Perf}_{m,t-1}$	0.246***	0.011				
	[19.39]	[0.37]				
$D^{AUM}_{m,t-1}$			−0.021	−0.027		
			[−1.30]	[−1.43]		
$D^{Non_fixed_salary}_{m,t-1}$					0.213***	0.011
					[17.98]	[0.43]
Adjusted R^2	0.061	0.733	0.000	0.733	0.044	0.730
Observations	3,700	3,700	3,700	3,700	3,700	3,700
Manager FE	No	Yes	No	Yes	No	Yes
	Panel B: Age, tenure, and experience					
	$Bonus_{m,t}/Pay_{m,t}$					
$D^{Higher\ Age}_{m,t}$	0.028***	0.038***				
	[5.92]	[8.91]				
$D^{Longer\ Tenure}_{m,t}$			0.063***	0.051***		
			[13.64]	[13.27]		
$D^{More\ Experienced}_{m,t}$					0.026***	0.031***
					[5.86]	[8.69]
Adjusted R^2	0.002	0.652	0.011	0.653	0.002	0.654
Observations	7,300	7,300	7,300	7,300	5,700	5,700
Manager FE	No	Yes	No	Yes	No	Yes
	Panel C: Manager AUM, quality, and fund activeness					
	$Bonus_{m,t}/Pay_{m,t}$					
$D^{Larger\ AUM}_{m,t-1}$	0.096***	0.054***				
	[20.35]	[10.35]				
$D^{Star\ Managers}_{m,t-1}$			0.051***	0.024***		
			[8.53]	[4.60]		
$D^{More\ Active}_{m,t-1}$					0.024**	0.008
					[2.38]	[1.10]
Adjusted R^2	0.026	0.659	0.006	0.666	0.002	0.650
Observations	7,300	7,300	4,700	4,700	7,300	7,300
Manager FE	No	Yes	No	Yes	No	Yes

Notes. This table examines the relationship between the bonus-to-total-pay ratio and fund manager characteristics. Panel A examines self-reported compensation structures in fund SAIs. $D^{Perf}_{m,t-1}$, $D^{AUM}_{m,t-1}$, and $D^{Non_fixed_salary}_{m,t-1}$ are indicator variables equal to one if a manager's fund SAI in year $t-1$ mentions performance-based pay, AUM-based pay, and no fixed salary, respectively. Panel B focuses on age, mutual fund manager tenure, and experience in the fund industry. We sort managers each year into two groups based on these characteristics. $D^{Higher\ Age}_{m,t}$, $D^{Longer\ Tenure}_{m,t}$, and $D^{More\ Experienced}_{m,t}$ are indicator variables equal to one if a manager's age, tenure as a mutual fund manager, and fund industry experience, respectively, are above the median in year t. Panel C focuses on manager-level AUM, manager quality, and fund activeness. $D^{Larger\ AUM}_{m,t-1}$ is an indicator variable equal to one if a manager's AUM is above the median in year $t-1$. $D^{Star\ Managers}_{m,t-1}$ is an indicator variable equal to one if a manager's average Morningstar rating from year $t-3$ to year $t-1$ exceeds 4 stars and the manager's AUM is in the top half in year $t-1$. $D^{More\ Active}_{m,t-1}$ is an indicator variable equal to one if a manager's average expense ratio is above the median in year $t-1$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data in Panels A and B is from 1990 to 2022, while it is from 2005 to 2018 in Panel C. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

a higher bonus share, although the estimate becomes weaker once manager fixed effects are included, suggesting that activeness-related differences in incentive pay are partly persistent at the manager level.

6.2.4 Information Contents of Self-Disclosed Fund Manager Compensation Structure

Mutual fund families are required to qualitatively disclose their portfolio managers' compensation structures in Statements of Additional Information (SAIs). These disclosures often indicate whether bonuses are tied to investment performance or, much less frequently, to assets under management (AUM), likely because the latter is viewed as more obvious or is not strategically emphasized. However, SAIs do not report the magnitude of these incentives, leaving open the question of how much weight different pay components carry in practice. Prior work finds that a large majority of funds report performance-based bonuses, whereas relatively few explicitly mention AUM-based compensation. We observe a similar pattern in our merged sample: 86.7% of managers work in funds that report performance-linked pay, while only 9.4% work in funds that explicitly cite AUM-based pay.

Ma, Tang and Gómez (2019) adopt an arguably overly simplistic interpretation of these disclosures, concluding that performance plays the primary role in determining managers' pay, whereas AUM does not matter for fund managers' compensation. Our results challenge this view and suggest that such a conclusion can be misleading. In Section 6.1, we show that, despite the infrequent mention of AUM-based pay in SAI filings, AUM is in fact the primary driver of U.S. fund managers' compensation. This finding highlights the risk of taking qualitative SAI disclosures at face value without examining the underlying pay dynamics.

To further assess the information content of self-reported compensation structures in SAIs, we next analyze the intensive margin. Specifically, we test whether these disclosures predict differences in the sensitivity of pay growth to its main determinants, including AUM growth and return performance. Using SAI filings from year $t-1$, we construct two indicators: $D^{NonPerf}_{m,t-1}$, which equals one for managers in funds that do not mention performance-based pay, and $D^{AUM}_{m,t-1}$, which equals one for managers in funds that mention AUM-based pay.

We then interact these indicators with the determinants of compensation growth: AUM growth, return performance, and the short-run deviation from the long-run equilibrium relationship between manager pay and AUM, as implied by the cointegration framework. In Columns (1) through (4) of Panel A in Table 17, the short-run deviation term is defined as $\ln(Pay_{m,t-1}) - \gamma \ln(A_{m,t-2})$, as in equation (3.7), where γ captures the long-run equilibrium relationship between manager compensation and the associated fee revenue, as defined in equation (3.3). Similarly, in Columns (5) through (8) of Panel A in Table 17, the short-run deviation term is defined as $\ln(Bonus_{m,t-1}) - \gamma^{bonus} \ln(A_{m,t-2})$, where γ^{bonus} captures the long-run equilibrium relationship between manager bonuses and the associated fee revenue.

The results, reported in Panel A of Table 17, show that AUM growth is strongly and positively associated with both total pay growth and bonus growth, regardless of whether the SAI mentions AUM-based pay. The interaction between $D^{AUM}_{m,t-1}$ and AUM growth is statistically insignificant, indicating no differential sensitivity for funds that explicitly report AUM-based incentives. By contrast, the interaction between $D^{NonPerf}_{m,t-1}$ and return performance is negative and marginally significant in the bonus growth regressions, while the main effect of return performance is positive and marginally significant. This pattern suggests that return performance has a stronger effect on bonus growth when performance-based pay is mentioned in the SAI, and a weaker effect when such language is absent. The same qualitative conclusion holds when returns are measured using abnormal performance relative to Morningstar style indexes or funds' self-reported benchmarks, and when longer-lagged returns are used (see Tables OA.20 and OA.21 in the Online Appendix).

We next turn to the extensive margin, examining whether SAI disclosures predict the likelihood that a manager receives any bonus at all. We define a manager as receiving a bonus if the bonus-to-total-pay ratio exceeds 5% and regress this indicator on the two SAI-based compensation structure indicators. As shown in Panel B of Table 17, managers in funds that mention performance-based pay are more likely to receive a bonus, whereas the mention of AUM-based pay has no significant association with bonus incidence.

Taken together, these results suggest that performance-pay language in SAI filings provides useful information about bonus arrangements, whereas AUM-pay language offers little insight into how managers are compensated. As shown in Panel B of Table 12, revenue or AUM is the primary driver of bonus level, with return performance exerting an additional but smaller influence. This evidence underscores that the infrequent mention of AUM-based incentives in SAI filings should not be interpreted as evidence that AUM plays a limited role in shaping fund managers' compensation, even for the bonus component.

6.3 Career Outcomes of Fund Managers

In Section 6.1, we provide extensive evidence in support of **Hypothesis 3(a)**. Those analyses are conducted conditional on no job turnover, so compensation and its determinants, including AUM, fund revenue, return performance, and fund flows, all pertain to the same employer. Here, we turn to **Hypothesis 3(b)** and examine how fund flows and return performance relate to managers' compensation in new firms after job changes, as well as to turnover outcomes such as promotion and demotion.

Table 17: Assessing the accuracy of the SAI self-reported manager compensation structure.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Intensive margin							
	$\Delta \ln(Pay_{m,t})$				$\Delta \ln(Bonus_{m,t})$			
$\ln(1+R^{gross}_{m,t-1})$	0.349	0.467	0.372	0.487	0.695*	0.759*	0.649*	0.701*
	[0.95]	[1.39]	[1.11]	[1.46]	[1.78]	[1.88]	[1.73]	[1.81]
$\Delta \ln(A_{m,t-1})$	0.169***	0.167***	0.174**	0.155***	0.303**	0.305**	0.292**	0.283**
	[2.95]	[3.10]	[2.17]	[2.72]	[2.43]	[2.12]	[2.60]	[2.37]
$deviation_{m,t-1}$	0.194***	0.315***	0.195***	0.309***	0.046***	0.155***	0.047***	0.153***
	[3.69]	[4.73]	[2.73]	[3.52]	[5.80]	[7.35]	[5.69]	[7.32]
$D^{NonPerf}_{m,t-1} \times \ln(1+R^{gross}_{m,t-1})$	−0.190	−0.081			−0.208*	−0.236*		
	[−1.34]	[−0.57]			[−1.76]	[−1.87]		
$D^{NonPerf}_{m,t-1} \times \Delta \ln(A_{m,t-1})$	0.043	0.043			0.039	0.030		
	[0.38]	[0.38]			[0.47]	[0.27]		
$D^{NonPerf}_{m,t-1} \times deviation_{m,t-1}$	−0.003	−0.036			−0.011	−0.008		
	[−1.01]	[−1.56]			[−1.09]	[−0.38]		
$D^{AUM}_{m,t-1} \times \ln(1+R^{gross}_{m,t-1})$			−0.146	−0.160			−0.163	−0.209
			[−0.26]	[−0.27]			[−0.37]	[−0.54]
$D^{AUM}_{m,t-1} \times \Delta \ln(A_{m,t-1})$			0.049	0.075			0.066	0.045
			[0.17]	[0.28]			[0.29]	[0.23]
$D^{AUM}_{m,t-1} \times deviation_{m,t-1}$			0.011	0.008			0.006	0.008
			[0.81]	[0.75]			[0.44]	[0.53]
Adjusted R^2	0.123	0.375	0.125	0.376	0.045	0.207	0.045	0.207
Observations	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Panel B: Extensive margin			
	$\mathbb{1}(Bonus_{m,t}/Pay_{m,t} \geq 5\%)$			
$D^{Perf}_{m,t}$	0.086***	0.027		
	[7.50]	[0.97]		
$D^{AUM}_{m,t}$			0.018	0.018
			[1.10]	[0.87]
Adjusted R^2	0.018	0.438	0.006	0.438
Observations	3,700	3,700	3,700	3,700
Manager FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes

Notes. This table evaluates the accuracy or informativeness of the self-reported compensation structure of fund managers in the SAI. Panel A of this table focuses on the intensive margin, specifically the growth of compensation and bonus. The dependent variable in Columns (1) to (4) of Panel A is the compensation growth of fund managers in year t, which is the difference in the natural log of the fund manager's labor income in year t compared to year $t-1$. The dependent variable in Columns (5) to (8) of Panel A is the growth of bonus in year t, which is the difference in the natural log of the fund manager's bonus in year t compared to year $t-1$. We construct two indicator variables for compensation contracts based on the SAIs in year $t-1$. The first indicator variable, $D^{NonPerf}_{m,t-1}$, equals one for managers who work in funds that do not mention performance-based pay in their SAIs. The second indicator variable, $D^{AUM}_{m,t-1}$, equals one for managers who work in funds that mention AUM-based pay in their SAIs. We also construct the term $deviation_{m,t-1}$ to quantify the short-run deviation from the long-term equilibrium relationship between a fund manager's pay and AUM, as established in the co-integration framework. The independent variables in Panel A include the natural log of the annual fund returns at the manager level in year $t-1$, the interaction terms between returns and the two indicator variables for compensation contracts, the growth of AUM in year $t-1$, the interaction terms between growth of AUM and the two indicator variables for compensation contracts, and the deviation term, and the interaction terms between the deviation term and the two indicator variables for compensation contracts. Panel B of this table focuses on the extensive margin, specifically whether a manager receives a bonus as part of their compensation. The dependent variable is an indicator variable that equals one if the bonus to total pay ratio is greater than 5%. The independent variables are the two indicator variables for compensation contracts. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 2005 to 2018. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 18: Compensation growth following job turnovers.

	(1)	(2)	(3)	(4)
	$\log(Pay_{m,t+1}/Pay_{m,t-1})$		$\log(\overline{Pay}_{m,t+1\to t+3}/Pay_{m,t-1})$	
$\ln(1+Flow_{m,t-1})$	0.335***	0.330**	0.375***	0.307**
	[2.70]	[2.33]	[2.70]	[2.18]
$\ln(1+R^{gross}_{m,t-1})$	0.345	0.017	0.304	0.068
	[1.28]	[0.05]	[1.41]	[0.26]
Adjusted R^2	0.014	0.083	0.015	0.086
Observations	2,500	2,500	2,500	2,500
Year FE	No	Yes	No	Yes

Notes. This table examines how compensation changes after job turnover relate to managers' return performance and fund flows before turnover, conditional on changing employers in year t. We do not include manager fixed effects because most managers in our sample change jobs at most once. In Columns (1) and (2), the dependent variable is the change in log labor income from year $t-1$ to year $t+1$, where income in year $t+1$ is earned at the new employer and income in year $t-1$ at the original employer. In Columns (3) and (4), the dependent variable is the difference between log average labor income over years $t+1$ to $t+3$ and log labor income in year $t-1$. The independent variables are the natural log of one plus manager-level annual fund flows and returns in year $t-1$. Standard errors are clustered at the year level. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Compensation Percentage Changes Post-Job Turnovers. We examine the relationship between fund managers' career outcomes and their return performance and fund flows by tracking their compensation after they leave mutual fund firms. The LEHD data provide unique individual identifiers, which allow us to observe managers' compensation after they depart from their original firms.

In Table 18, we regress pay changes around manager job turnovers on return performance and fund flows prior to turnover. We find that fund flows are significantly and positively associated with pay changes around job turnover events, whereas fund return performance is not. These results suggest that fund flows play an important role in shaping managers' career outcomes, particularly transitions associated with salary increases or decreases, while return performance does not.[20] This provides evidence that supports **Hypothesis 3(b)**.

Likelihood of Job Turnovers with Large Compensation Changes. We next examine how the likelihood of job turnovers accompanied by large compensation changes relates to fund managers' return performance and fund flows prior to turnover. We define $D^{Demotion}_{m,t}$ and $D^{Promotion}_{m,t}$ as indicator variables for large income demotions and promotions, respectively. $D^{Demotion}_{m,t}$ equals one if manager m's compensation in year $t+1$ is at least 20% lower than in year $t-1$ and the manager changes jobs in year t. Conversely, $D^{Promotion}_{m,t}$ equals one if compensation in year $t+1$ is at least 20% higher. The mean values of $D^{Demotion}_{m,t}$ and $D^{Promotion}_{m,t}$ are 4.2% and 3.3%, respectively.

Before turning to the regression evidence, it is useful to describe where managers go after leaving mutual

[20] In Table OA.24 of the Online Appendix, we further decompose fund flows into systematic and idiosyncratic components. The results show that both components affect the percentage change in fund managers' compensation following job turnover.

Table 19: Job turnovers with large compensation changes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$D_{m,t}^{Demotion}$				$D_{m,t}^{Promotion}$			
$D_{m,t-3\to t-1}^{Large\ Outflow}$	0.036**	0.032**	0.034**	0.029**			−0.003	−0.007
	[2.47]	[2.47]	[2.21]	[2.22]			[−0.49]	[−1.00]
$D_{m,t-3\to t-1}^{Large\ Inflow}$			−0.015**	−0.025**	0.034**	0.037**	0.030**	0.036**
			[−2.11]	[−2.53]	[2.38]	[2.12]	[2.12]	[2.02]
$D_{m,t-3\to t-1}^{Large\ Negative\ Return}$	0.007	0.006	0.007	0.006			−0.002	−0.006
	[0.74]	[0.91]	[0.73]	[0.85]			[−0.24]	[−0.79]
$D_{m,t-3\to t-1}^{Large\ Positive\ Return}$			−0.000	−0.006	0.010	0.019*	0.008	0.019*
			[−0.05]	[−0.74]	[0.54]	[1.80]	[0.47]	[1.84]
Adjusted R^2	0.017	0.290	0.018	0.292	0.020	0.311	0.021	0.312
Observations	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines how job turnovers with large compensation changes are related to return performance and fund flow in the years preceding the job turnovers. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

fund firms. Among managers experiencing demotions, 37.5% remain in the mutual fund industry, 25.0% move to other financial firms outside the mutual fund sector, including 7.9% who move to hedge funds, and the remaining 37.5% leave the financial industry, most often for technology and administrative and support services. Among managers experiencing promotions, 70.5% remain in the mutual fund industry, 14.1% move to other financial firms outside the mutual fund sector, including 10.3% who move to hedge funds, and 15.4% leave the financial industry, often for technology and other sectors.

We then examine which pre-turnover outcomes predict these career transitions. Specifically, we regress $D_{m,t}^{Demotion}$ and $D_{m,t}^{Promotion}$ on indicator variables for large inflows and outflows and for large positive and negative returns in the years preceding turnover. The unit of observation is a manager-year, and unlike the analysis in Table 18, the sample is not restricted to realized job turnover events. We include year fixed effects to absorb aggregate variation in promotion and demotion rates common to all managers.

Table 19 reports the main results. $D_{m,t-3\to t-1}^{Large\ Outflow}$ is defined as an indicator variable that equals one if the average fund flow of the manager from year $t-3$ to year $t-1$ is ranked in the bottom decile. $D_{m,t-3\to t-1}^{Large\ Inflow}$ is defined as an indicator variable that equals one if the average fund flow of the manager from year $t-3$ to year $t-1$ is ranked in the top decile. $D_{m,t-3\to t-1}^{Large\ Outflow}$ is defined as an indicator variable that equals one if the average fund flow of the manager from year $t-3$ to year $t-1$ is ranked in the bottom decile. $D_{m,t-3\to t-1}^{Large\ Inflow}$ is defined as an indicator variable that equals one if the average fund flow of the manager from year $t-3$ to year $t-1$ is ranked in the top decile. Large outflows increase the probability of demotion by 3 to 4 percentage points, an economically large effect relative to the unconditional demotion rate. Symmetrically,

large inflows increase the probability of promotion by 3 to 4 percentage points and reduce the probability of demotion by about 2 percentage points. By contrast, return performance has little, if any, effect on the likelihood of turnover with either promotion or demotion. Taken together, these results suggest that fund flows are strongly related to managers' career outcomes, whereas return performance matters little. This provides further strong support for **Hypothesis 3(b)**.

6.4 Roles of Fund Family Flows and Returns

Fund Family Return Performance and Fund Flows. We examine **Hypothesis 4** by studying how a fund manager's compensation responds to family-level return performance and fund flows. Specifically, we regress compensation growth on the AUM-weighted return performance and fund flows of the manager's fund family. As in Ibert et al. (2018), we exclude the return performance and fund flows of the funds managed by the focal manager when constructing these family-level measures.

Table 20 reports the results. We find that fund family flows comove positively with managers' compensation growth, and that this comovement is driven primarily by base pay rather than bonuses. These patterns are consistent with the evidence in Ibert et al. (2018) for Swedish fund managers. They suggest that, as in Sweden, compensation for U.S. fund managers likely reflects a collective fund-family compensation pool and therefore incorporates an element of risk sharing across managers within the same fund family.

Table 20 also shows that fund family return performance does not comove significantly with either base pay growth or bonus growth. One possible explanation is competition among managers within the same mutual fund family, as emphasized in the literature on mutual fund tournaments (e.g., Brown, Harlow and Starks, 1996; Kempf and Ruenzi, 2008; Evans, Prado and Zambrana, 2020). Such tournament effects may offset the risk-sharing effect of family-level return performance. Overall, these results are consistent with **Hypothesis 4**.

A potential concern is that the estimated relation between family-level flows and returns and compensation growth may simply reflect their correlation with manager-level variables. This concern arises because funds within the same family are likely to share similar clienteles, management styles, and business environments. To address it, we add managers' own lagged flows and returns to the set of regressors. As shown in Table 20, the results remain largely unchanged after controlling for these manager-level variables.

Table 20: Base pay and bonus growth: Evidence on the role of fund family returns and flows.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\Delta \ln(Base_{m,t})$				$\Delta \ln(Bonus_{m,t})$			
$\ln(1 + Family\ Flow_{m,t-1}^{(-m)})$	0.110**	0.097**	0.074**	0.071*	0.115**	0.108*	0.109	0.092
	[2.70]	[2.19]	[2.07]	[1.80]	[2.26]	[1.95]	[1.62]	[1.30]
$\ln(1 + Family\ R_{m,t-1}^{gross,(-m)})$	0.279*	0.247*	0.172	0.181	0.680**	0.702**	0.608	0.541
	[1.69]	[1.77]	[1.19]	[1.27]	[2.23]	[2.46]	[0.83]	[1.64]
$\ln(1 + Flow_{m,t-1})$			0.118***	0.107***			0.149**	0.124**
			[3.30]	[2.88]			[2.39]	[2.22]
$\ln(1 + R_{m,t-1}^{gross})$			0.284***	0.332***			0.488***	0.528**
			[4.45]	[3.70]			[2.84]	[2.58]
Adjusted R^2	0.047	0.154	0.053	0.158	0.055	0.158	0.062	0.164
Observations	7,300	7,300	7,300	7,300	7,300	7,300	7,300	7,300
Manager FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. This table examines the relation of compensation growth with the return performance and fund flow of fund families. The dependent variable in columns (1) – (4) is the compensation growth of fund managers in year t, which is the difference in the natural log of the fund manager's labor income in year t compared to year $t-1$. The dependent variable in columns (5) – (8) is the base pay growth of fund managers in year t, which is the difference in the natural log of the fund manager's base pay in year t compared to year $t-1$. The dependent variable in columns (9) – (12) is the bonus growth of fund managers in year t, which is the difference in the natural log of the fund manager's bonus in year t compared to year $t-1$. Base pay and bonus are defined in Table 12. The independent variables include the AUM-weighted flows and returns of fund families in year $t-1$, excluding the flows and returns of funds assigned to manager m. We also control for flows and returns of fund manager m in year $t-1$. Standard errors are double-clustered at both the manager and year levels. The sample period of the data is from 1990 to 2022. We include t-statistics in brackets. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

7 Conclusion

This paper constructs the first large-scale dataset that directly links the compensation and career outcomes of U.S. active equity mutual fund managers to administrative earnings records. By combining CRSP and Morningstar mutual fund data with the U.S. Census Bureau's LEHD data, we provide new evidence on the determinants of managers' total compensation, base salary, bonus pay, and career mobility in delegated asset management.

Our findings show that manager compensation is anchored primarily by AUM and the fee revenue generated by those assets. Return performance also matters beyond its effect on AUM, but its overall role is secondary and operates mainly through bonuses, especially through an asymmetric bonus response to performance. This bonus-based sensitivity to return performance is substantially stronger for managers who are more senior, more experienced, more active, have higher Morningstar ratings, and oversee larger funds. Fund flows exert a distinct and economically important effect. Mechanically, they matter partly through AUM, but also have substantial additional effects beyond AUM. In particular, idiosyncratic inflows and outflows remain strongly associated with bonus compensation even after controlling for their impact on AUM. The compensation system therefore rewards not only the asset base a manager oversees and the returns earned on that base, but also the ability to attract and retain investor capital.

We also show that fund flows are a central determinant of career outcomes, in ways that return performance is not. When managers move across jobs, compensation in the new position is positively related to prior fund flows, whereas prior return performance has little comparable effect. Likewise, past outflows substantially raise the likelihood of turnover associated with a large pay cut, while strong inflows, and to a lesser extent strong past returns over longer horizons, increase the likelihood of turnover accompanied by a large pay increase.

Taken together, our evidence clarifies how compensation contracts and career incentives are shaped in active asset management, and highlights that investor fund flows play a distinct and powerful role in governing both the income risk and the career dynamics of fund managers. This, in turn, has important asset pricing implications in capital markets (e.g., Dou, Kogan and Wu, 2023).

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