Gender Disparities in the Mutual Fund Industry: Investor Flows, Selection Bias, and Managerial Skill

Li-Ting Chiu* **Hsuan Fu†** **Mattia Landoni‡**

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*Bentley University, E-mail: lchiu@bentley.edu (L. Chiu).
†Université Laval, E-mail: hsuan.fu@fsa.ulaval.ca (H. Fu).
‡China Europe International Business School, E-mail: mattia.landoni@ceibs.edu (M. Landoni).

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Abstract

This paper examines the structural barriers behind the underrepresentation of women in the money management industry. Using US mutual fund data from 1992 to 2022, we document a Glass Cliff in appointments: female managers are disproportionately assigned to funds with poor historical performance. We also document a demand-side friction that we argue produces it: investors translate a female manager's performance into capital less strongly than a male manager's. The flow-performance relation flattens after a woman is appointed, and flattens most when she replaces a departing man, while pre-appointment sensitivity does not predict who is appointed. This muted response is not the efficient discounting of a noisier signal: past performance forecasts future performance equally well regardless of manager gender. Post-appointment performance is likewise indistinguishable across genders, leaving no skill gap for the pattern to reflect. A small modification of the Berk–Green (2004) model of delegated portfolio management adds a gender-dependent slope to the flow-performance relation. It rationalizes these facts jointly and shows why they are connected. Because a flatter response forfeits inflows at strong funds and cushions redemptions at weak ones, the model gives fund families an incentive to assign women to weaker funds. Taken together, our model and evidence support a view of the Glass Cliff as fund families' response to gendered information processing by investors, rather than an independent supply-side friction.

Keywords: mutual funds; flow-performance sensitivity; gender bias; belief formation; glass cliff; women in finance
JEL Classification: G23, G40, G16, J71, M51, D83

1 Introduction

Women remain underrepresented in investment management across the world. In India, for example, women accounted for only about 9% of mutual fund managers in January 2024 (Santarita, 2024). In the United States, female representation among active equity mutual fund managers has stagnated, hovering between 8% and 10% for nearly three decades (see Figures 1 and 2). While the absolute number of newly appointed female managers has seen marginal growth, women seem to remain underrepresented in capital allocation roles. This disparity could be superficially rationalized by an apparent gap in managerial skill, inferred from the readily observable difference in unconditional average performance.[1] In this paper, we demonstrate that career outcomes for these managers are heavily influenced by the funds they are assigned to, and that this pattern can arise as the fund family's response to a subtler demand-side friction: investors do not translate a female manager's performance into capital as strongly as they translate a male manager's. We therefore investigate two structural barriers that are linked: a supply-side Glass Cliff, in which newly appointed female managers are concentrated in underperforming funds, and a demand-side underreaction to female managers' performance that gives fund families an incentive to place women at weaker funds.

The persistence of this disparity is particularly puzzling because the mutual fund industry should, in principle, be where gender gaps are hardest to sustain. Unlike most professional settings, fund management produces a homogeneous output (a managed portfolio) evaluated by a standardized, objective metric (risk-adjusted alpha), which ought to let talent surface regardless of gender. Moreover, managerial appointments, investor responses through fund flows, and subsequent investment performance are all observable, making the industry a particularly transparent setting for studying gender discrimination. Yet the gap not only persists but appears robust to formal interventions.[2] The puzzle deepens once one looks at human capital: female managers in our sample are similarly credentialed to their male peers across many observed dimensions, yet their tenure in fund management is markedly shorter. Equal or stronger human capital inputs, paired with truncated career trajectories, suggest that the unconditional performance gap reflects something other than skill. The remainder of this paper explores what.

This paper investigates three structural mechanisms that may jointly explain the puzzle. First,

[1] See Patel and Sarkissian (2017), Csiky and Pichler (2025) and our Appendix Figure A.1, that all document lower average performance for female managers in unconditional models.

[2] The stagnation persists despite federal affirmative action policies in place since 1970 and more recent state-level mandates such as California's 2019 board-diversity requirement.

on the *supply side*, what types of funds do fund families assign to female managers, and is this assignment driven by performance, risk profile, or gendered preferences? Second, on the *demand side*, how do investors *process* fund performance when the manager is female: do they simply commit less capital at every level of performance, or do they respond less to performance itself? Third, once these structural frictions are properly accounted for, does any measurable gender gap in managerial skill remain? A central methodological challenge we explicitly address is that past performance influences both female assignment and subsequently observed performance, rendering unconditional performance comparisons uninformative about skill. A second challenge is that a muted flow response is not by itself discriminatory: a rational investor should respond less to a less informative signal. Distinguishing bias from good Bayesian updating requires showing that the signal is not, in fact, less informative.

Our analysis yields four interrelated findings. *First*, on the supply side, we document the Glass Cliff, a phenomenon introduced by Ryan and Haslam (2005, 2007): fund families systematically assign female managers to funds with deteriorating historical performance and low within-style rankings. *Second*, on the demand side, the flow–performance relation is flatter for female-managed funds. This is a statement about the *slope*, not merely the level documented by Niessen-Ruenzi and Ruenzi (2019), and the flattening is a consequence of the appointment rather than a property of the funds women inherit: a fund's pre-appointment flow sensitivity carries no predictive power for the gender of the incoming manager, yet sensitivity falls after a woman is appointed, and falls most sharply when she replaces a departing man. *Third*, the muted response is not justified by the information it responds to. Past performance predicts future performance equally well regardless of the manager's gender, so investors are under-reacting to a signal that is no less informative—the piece of evidence that separates bias from Bayesian updating. *Fourth*, once endogenous assignment is accounted for in a difference-in-differences design, post-appointment performance is statistically indistinguishable across genders, so there is no skill gap for the flow pattern to reflect. Taken together, the four findings locate the friction on the demand side and, more precisely, in how investors read performance rather than in how much they like the manager who produced it.

To organize these findings we embed them in a familiar model, adding two ingredients to Berk and Green (2004) (hereafter B&G): a gender-dependent flow rule and persistent fund-specific shocks to strategy profitability. B&G is the natural host because its central mechanism—performance-sensitive flows that compete alpha to zero and capitalize skill into fund size—is precisely the channel through which investor bias would have to operate in this industry. The flow rule is general enough to accommodate four candidate explanations of the patterns we document: employer discrimination, a gender skill gap, investors who commit less capital to a female-managed fund at any level of

performance, and investors who respond less strongly to that performance—the mechanism we call gendered processing of performance. All four make female appointments relatively less costly at weaker funds, thereby generating Glass Cliff sorting through different margins. However, they differ in the shape of the flow–performance relation, the level of steady-state alpha, and conditional performance at appointment. Investor behavior that changes with manager gender inside the same fund is inconsistent with the first two explanations, both of which leave investors gender-blind; equal conditional alpha is inconsistent with a skill gap; and a change in the slope of the flow–performance relation rather than in its level separates gendered processing from a simple reluctance to invest. Section 2 presents the framework, treating the four explanations as separate cases for tractability, and the appendix develops it fully.

Why call a flatter flow–performance relation a *penalty* when it also means smaller outflows after poor performance? Two observations clarify why. The first is that in delegated asset management this relation is not a nuisance parameter but the reward schedule itself. A manager is paid a fee proportional to assets, and assets are allocated by investors in response to observed performance, so the slope of that response is the rate at which a track record is converted into scale and compensation. A flatter slope is, quite literally, a flatter pay-for-performance schedule for the same output. The second is that this slope creates an assignment wedge for the fund family. When investors respond less strongly to performance, appointing a woman forfeits inflows at a fund that is doing well and cushions redemptions at a fund that is doing badly, and both effects scale with the assets at stake. A gender-dependent slope is thus a tax at the top of the performance distribution and a subsidy at the bottom, making a female appointment relatively more costly at a strong fund and less costly at a weak one. A family concerned with AUM therefore has an incentive to place women at weaker funds. The flatter slope is not merely a second, parallel symptom of investor bias; it is the economic mechanism that induces the Glass Cliff. A corollary is that a large assignment distortion need not imply a large primitive bias: because appointments are discrete, even a modest difference in flow sensitivity can tip the marginal appointment.

Nor is a flatter response by itself evidence of bias. A Bayesian investor moves capital in proportion to how much observed performance shifts her belief about future performance, so if a female manager's track record were genuinely a noisier signal—because her latent ability is drawn from a tighter distribution, or because the funds she inherits are more turbulent—then a smaller flow response would be efficient rather than discriminatory. This null is unusually testable here, because performance is measured on a standardized, objective, and continuously observed scale, and it makes a sharp prediction: past performance should forecast future performance less well under a female manager. It does not. Persistence is statistically indistinguishable across manager gender at

every horizon we examine. Investors respond less to a signal that carries just as much information, which is what it means for a response to be non-Bayesian. The exercise is Becker's (1957) outcome test applied to the slope rather than to the level: instead of asking whether the marginal dollar earns the same return across groups, we ask whether the marginal signal carries the same information. The setting therefore reduces the usual identification problem in two complementary ways. On the allocation margin, the B&G mechanism supplies an equilibrium benchmark: gender-blind flows compete alpha to zero regardless of skill. On the information margin, forecast calibration supplies a second benchmark: if past performance is equally informative about future performance across manager gender, rational investors should place the same weight on it. We need not observe managerial ability directly; we can test the two observable implications of gender-neutral capital allocation.

The psychology of evaluation predicts this asymmetry. A meta-analysis finds support for gendered expectations shaping observers' attributions of success and failure in masculine tasks (Swim and Sanna, 1996). In mixed-gender teams, ambiguous information about individual contribution to a successful joint outcome can lead evaluators to give women less credit for it (Heilman and Haynes, 2005). Treating an outcome as luck is, in the language of our model, treating it as less diagnostic of skill. Related work documents stricter standards for inferring women's competence (Foschi, 2000), stereotype-driven beliefs about ability (Bordalo et al., 2016, 2019), and discrimination through differential attention to information (Bartoš et al., 2016). These mechanisms differ but share the same implication for our purposes: investors place less weight on a manager's own performance record. That weight is the single parameter our framework needs; we do not try to determine why investors respond differently.

By exposing these structural frictions, this research builds upon a growing literature exploring the intersection of gender, corporate governance, institutional structure, and financial markets. While recent studies emphasize the importance of robust managerial structures (Patel and Sarkissian, 2017, 2021) and debate policy approaches to enhancing diversity (Edmans, 2023), entrenched structural inequities persist (see, e.g., Sherman and Tookes, 2022). Evidence of these inequities extends across the broader financial ecosystem, with emerging literature documenting precarious leadership appointments for women in adjacent sectors, from the selection of government Finance Ministers (Armstrong et al., 2024) to promotions among mortgage lenders (Huang et al., 2024). Narrowing the focus to the asset management industry, the mutual fund literature establishes that gender significantly influences career outcomes and tenure (Barber et al., 2018), as well as systemic capital constraints by investors (Niessen-Ruenzi and Ruenzi, 2019).

Niessen-Ruenzi and Ruenzi (2019) show that investors place less money in female-managed funds; their specification, estimated on single-managed funds, permits a nonlinear flow–performance relation but constrains it to be common across manager gender. If slopes differ, its female-manager coefficient can absorb part of the average flow gap generated by that slope heterogeneity. Using investor-level data from a Chinese fintech platform, Rau and Wang (2022) find that flows respond less strongly to past performance for female-managed funds, despite no gender difference in the predictive ability of past performance for future performance. They also note that this weaker sensitivity can cushion outflows after poor performance. We examine this pattern in the U.S. active equity mutual fund market and use manager turnovers to track changes in flow sensitivity within the same fund. A level penalty is a preference over managers that the Berk–Green mechanism partially disciplines, since it raises the equilibrium alpha a female-managed fund must deliver in order to hold its assets; a slope difference is a distortion in inference, which the same mechanism does not discipline but instead transmits into the assignment decision. Related evidence of gender-based differences in interpreting the same information appears in referrals to surgeons (Sarsons, 2022) and punishment of misconduct among financial advisers (Egan et al., 2022). This demand-side friction reflects a broader, cross-market pattern of bias; for instance, in venture capital and entrepreneurship, female founders similarly raise substantially less equity financing than their male peers (Guzman and Kacperczyk, 2019; Hebert, 2025; Hebert et al., 2026). We extend this literature by jointly examining both supply-side assignment mechanisms and demand-side investor behaviors to explain the persistent performance gaps observed in unconditional settings.

To unpack these dynamics, we focus on actively managed equity funds, where managerial skill is more readily observable through risk-adjusted performance, and compensation is among the highest in the mutual fund industry, making gender disparities particularly consequential. We first present summary statistics for our sample at both the manager and fund levels (Table 1 and 2). Notably, female managers possess highly competitive credentials, often holding slightly higher rates of advanced degrees and Ivy League education than their male counterparts. Despite these qualifications, their career trajectories within fund families are markedly different from the outset, such as shorter tenure in the funds they managed and in the whole industry. Table 3 completes the descriptive picture by breaking the sample down by investment objective, showing that female-managed funds are distributed across styles rather than concentrated in a few.

We then uncover strong evidence of the Glass Cliff phenomenon in the assignment of mutual fund managers. In Tables 4 and 5, we analyze the appointment mechanism and find that funds experiencing deteriorating historical performance, up to twelve months prior to a managerial transition, are significantly more likely to appoint a female manager. In Table 5, performance is measured as

within-investment-objective rankings, so the comparison is between funds pursuing the same style and cannot reflect gendered style preferences. Because these estimates condition on an appointment or replacement taking place, we further verify in Table 6 that the pattern is not an artifact of selection into the conditional samples: Heckman-corrected estimates (Heckman, 1979; Van de Ven and Van Praag, 1981) remain negative and statistically significant across outcome definitions and selection margins. Furthermore, we rule out the alternative explanation that women are simply matched with different risk profile portfolios due to gendered risk-aversion stereotypes (Croson and Gneezy, 2009). As shown in Table 7, a fund's past risk loading does not influence the probability of a female manager's assignment. The primary fund-level predictor of female appointment is poor past performance, not risk profile.

Once appointed to these funds, female managers encounter the demand-side friction. In Figure 3 and Table 8 we document asymmetries in flow-to-performance sensitivity between male- and female-managed funds. Male managers enjoy a highly convex flow-performance relationship, reaping outsized inflows for top performance; female managers face a significantly flatter curve. In the full sample the gap is concentrated where it is most costly: an outperforming female-managed fund attracts significantly smaller additional inflows for an improvement in performance than an otherwise comparable male-managed fund. Team- and single-managed funds differ in where the response weakens: female representation is associated with a significantly flatter slope in the top quartile among team-managed funds and in the bottom quartile among single-managed funds.

A cross-sectional slope gap, however, could be a composition effect. If funds with a chronically weak flow-performance relation are also the funds that receive female appointments, the gap would say nothing about how investors treat women. Table 9 settles this with an event-time design centered on the appointment. Pre-appointment flow sensitivity has no predictive power for the gender of the incoming manager, which rules out reverse causality; sensitivity is nonetheless lower after a female appointment, and the within-fund change from before to after is negative throughout, largest in the subsample where a woman replaces a departing man. The same fund and the same strategy elicit a different response to performance once the manager's gender changes.

Table 10 then examines the Bayesian alternative directly. Past performance exhibits statistically detectable persistence in our measures, but that relationship does not differ detectably by female representation, at either horizon or with fund fixed effects. We therefore find no evidence that performance produced by female-managed funds is a less informative signal of subsequent performance. The flatter flow response cannot, on this evidence, be rationalized as the efficient discounting of a less precise signal.

The structural frictions documented above, rather than differences in skill, may account for the raw performance deficit associated with female managers (Table 11 and Appendix Figure A.1). Building on the longstanding debate on gender and mutual fund performance initiated by Bliss and Potter (2002), we disentangle the effects of fund assignment from managerial skill by conducting a difference-in-differences analysis that compares post-appointment performance between female- and male-appointed managers, as reported in Table 12.

Given that female managers are systematically assigned to worse-performing funds (the *Glass Cliff*) and cannot count on capital to follow whatever performance they deliver (the *demand-side friction*), one would expect their subsequent performance to deteriorate significantly. However, the result in Table 12 shows that although these portfolios were already underperforming prior to the female manager's arrival, post-appointment alphas are statistically indistinguishable from those of male peers in the difference-in-difference framework.[3]

A natural alternative, that male managers benefit from stronger informal networks ("the old boys' club"), is unlikely to be the primary driver of our findings. Although educational and social networks have been shown to generate higher returns on connected holdings in mutual funds (Cohen et al., 2008; Pool et al., 2015), our difference-in-differences estimates show that post-appointment alpha is statistically indistinguishable across genders. Whatever role networks play in shaping connected-stock returns, they do not appear to translate into a gender gap in fund-level managerial skill once endogenous assignment is accounted for.

These findings make three contributions. *First*, we extend the investor-level evidence from China in Rau and Wang (2022) by tracing the flow–performance slope around manager turnovers in U.S. active equity mutual funds. The slope flattens within a fund after a woman's appointment, most clearly when she replaces a man. In our U.S. sample, past performance predicts future performance equally well across manager gender. *Second*, we identify the flow-performance slope as the economic link between demand- and supply-side discrimination. Our model shows how a gender-dependent flow response gives fund families an incentive to assign women to weaker funds. A flatter slope limits inflows after strong performance and cushions redemptions after weak performance, making a female appointment relatively more costly at a stronger fund. To our knowledge we are also the first to document the Glass Cliff within the mutual fund industry, extending the Glass Cliff literature (Ryan and Haslam, 2005; Cook and Glass, 2014) to a setting where the assignment cost

[3]This resilience may also reflect governance and stability benefits, consistent with Li and Zeng (2019), who find that firms with female CFOs exhibit lower subsequent stock-price crash risk, and may be supported by stronger liquidity management among female managers (Sehrish et al., 2024), which helps mitigate the payoff complementarities and financial fragility underlying run-like outflows (Chen et al., 2010).

can be priced. *Third*, to the literature on managerial characteristics and fund performance (Patel and Sarkissian, 2017; Csiky and Pichler, 2025; Barber et al., 2018), we show that the unconditional gender performance gap is a composition effect of endogenous assignment rather than evidence of a skill deficit, using an expanded sample that accommodates female-only, mixed-gender, and male-only teams and therefore identifies more cleanly than designs restricted to single managers. Together these results map the leadership inequities documented in adjacent settings (Armstrong et al., 2024; Huang et al., 2024) onto the mechanism by which capital is actually allocated.

The remainder of the paper is organized as follows. Section 2 develops a parsimonious conceptual framework that organizes these mechanisms and derives the hypotheses we test. Section 3 describes the data and provides summary statistics. Section 4 explores the supply-side appointment bias by establishing the Glass Cliff effect and ruling out risk-loading channels. Section 5 examines demand-side investor behavior: the flow-performance slope, its within-fund change around appointments, and whether the performance signal it responds to is equally informative across manager gender. Section 6 presents the evaluation of post-appointment managerial skill. Section 7 concludes.

2 A Conceptual Framework: Gendered Investor Responses and the Glass Cliff

Our framework is a deliberately small extension of the B&G model of delegated portfolio management. We retain its basic logic: investors direct capital toward alpha until decreasing returns eliminate it. We add only a fund family's manager-assignment decision, persistent differences in strategy profitability, and reduced-form gender wedges in either that decision or investor flows. These additions create an endogenous assignment margin: persistent strategy differences make funds economically distinct, and the family decides which managers run them. The framework can therefore connect gendered investor responses or family preferences to the Glass Cliff, while generating predictions that distinguish their possible sources. Full derivations and proofs appear in Internet Appendices A and B.

2.1 Setup

A fund family operates many funds. Fund i has assets under management q_i and a persistent profitability shock ε_i, with $1+\varepsilon_i > 0$, that captures how favorable its investment strategy currently

is. We treat ε_i as a persistent fund state, not a source of permanently predictable alpha. Its persistence gives the family an economically meaningful reason to sort managers across funds: a strategy that is currently more (less) profitable remains so long enough for an appointment and fund size to adjust. As in B&G, decreasing returns can then compete realized alpha back toward zero even while the underlying state persists. A manager of gender $g \in \{M, F\}$ has skill a_g.[4] We parameterize a potential gender skill gap by $a_M = a$ and $a_F = a - \theta$, where $\theta \geq 0$. Gross alpha is

$$\alpha_i = a_g(1 + \varepsilon_i) - cq_i, \tag{1}$$

where $c > 0$ captures decreasing returns to scale. Because skill and strategy profitability are complements, a more skilled manager creates more value at a better strategy.

Let F_i equal one when fund i is female-managed. Net investor flows per dollar of AUM satisfy

$$\frac{f_i}{q_i} = (\phi - \kappa F_i)\alpha_i - \delta(1 + \varepsilon_i)F_i, \tag{2}$$

where $\phi > 0$, $0 \leq \kappa < \phi$, and $\delta \geq 0$. The parameter δ shifts the flow curve downward for a female-managed fund. The parameter κ flattens it: otherwise identical performance is translated less strongly into capital allocation under a female manager. At a vacancy, the family compares the AUM implications of feasible manager assignments, taking the gender composition of its manager pool as given. A female assignment entails a potential perceived cost $d(1 + \varepsilon_i)q_i^*$, where $d \geq 0$ and q_i^* is the fund's gender-blind steady-state size. The cost is active only when $d > 0$; its formulation makes it larger at more valuable strategies.

The encompassing framework defines four hypotheses:

- (E) **Employer discrimination:** $d > 0$, $a_F = a_M = a$, and $\delta = \kappa = 0$.
- (S) **Skill gap:** $\theta > 0$, and $d = \delta = \kappa = 0$. Female managers have lower skill by θ, while families and investors are otherwise gender-blind.
- (I_δ) **Investor flow-level discrimination:** $\delta > 0$, $a_F = a_M = a$, and $d = \kappa = 0$. Managers are equally skilled, but investors impose a downward flow shift $\delta(1 + \varepsilon_i)$ on a female-managed fund at any given alpha.

[4] To isolate the assignment effects of interest, we abstract from manager-level skill heterogeneity within gender. Such heterogeneity would introduce an additional assortative-matching margin beyond the scope of this deliberately parsimonious extension.

(I_ϕ) **Gendered processing of performance:** $\kappa > 0$, $a_F = a_M = a$, and $d = \delta = 0$. Managers are equally skilled, but investors translate a female manager's observed performance into flows less strongly. Internet Appendix A.4 considers whether this reduced form reflects differential attribution, attention, or signal precision, and discusses the implications of treating κ as persistent over a manager's tenure.

2.2 Predictions

H1. Glass Cliff. All four hypotheses predict that women are assigned disproportionately to weaker funds. Under I_ϕ, define $\phi_M = \phi$ and $\phi_F = \phi - \kappa$. Holding current fund size and alpha fixed, the slope component of the male–female difference in dollar flows is

$$f_i^M - f_i^F = q_i \kappa \alpha_i. \tag{3}$$

When alpha is positive, appointing a woman sacrifices performance-sensitive inflows; when alpha is negative, the flatter response attenuates redemptions. Over the adjustment path this has the same sign. A female appointment slows the fund's return to its steady-state size q_i^* by the factor $(\phi - \kappa)/\phi$, in both directions. An oversized fund ($\alpha_i < 0$) stays oversized, and so keeps generating fees on excess AUM, for longer under a woman; an undersized fund ($\alpha_i > 0$) grows more slowly. A family that values fee income over the adjustment path, not terminal AUM (which is the same for both genders), therefore prefers a female assignment at the lower-alpha fund. The gain depends on the fund's distance from its steady-state size, $q_i/q_i^* = 1 - \alpha_i/[a(1+\varepsilon_i)]$; with no discounting and an infinite horizon it equals the fee rate times $\ln(q_i/q_i^*)\,\kappa/[c\phi(\phi-\kappa)]$. Over short horizons or at high discount rates it approaches the instantaneous dollar wedge in equation (3), which is larger at large funds; over long horizons fund size matters only through q_i/q_i^*. Here AUM is measured net of common market returns; otherwise the steady-state alpha under I_ϕ in H4 would not be zero. Because an appointment is discrete, any $\kappa > 0$ strictly ranks otherwise comparable vacancies, so even a modest difference in flow sensitivity can change the marginal assignment. The other hypotheses produce the same assignment pattern through different channels. Under I_δ, the female-assignment flow cost is $q_i\delta(1+\varepsilon_i)$; under S, the steady-state AUM loss is $\theta(1+\varepsilon_i)/c$; and under E, the perceived employer cost is $da(1+\varepsilon_i)^2/c$. Each cost is lower at a worse strategy. H1 is therefore the stylized fact the model is designed to explain, not a prediction that discriminates among the four hypotheses.

H2. The flow–performance relation. Under E and S, investor behavior is gender-blind. Under I_δ, a female appointment shifts the flow curve downward without changing its slope. Under I_ϕ, a female appointment reduces the slope by κ. The last case implies less reward following good performance and, symmetrically, less punishment following bad performance. A change in manager gender within the same fund therefore changes flow sensitivity only under I_ϕ.

H3. Signal informativeness. A flatter response under I_ϕ can reflect biased processing: investors may attribute female-manager performance more readily to luck or act on it less strongly. It can also reflect a genuine difference in signal informativeness. The two interpretations have different implications. Biased processing permits current performance to predict future outcomes equally well across manager gender; genuinely less informative signals imply weaker performance persistence under a female manager. This is the slope outcome test: if past performance has the same predictive content for future performance across manager gender, rational investors should place the same weight on it; a weaker female flow slope then reveals differential processing.

H4. Conditional performance. Holding the inherited fund state (q_i, ε_i) fixed, E, I_δ, and I_ϕ imply equal alpha at appointment because managers are equally skilled. Under S, assigning a woman instead lowers alpha by $\theta(1+\varepsilon_i)$. In the flow steady state, equation (2) gives

$$\alpha_i^* = \frac{\delta(1+\varepsilon_i)F_i}{\phi - \kappa F_i}. \tag{4}$$

This is the level outcome test: under gender-blind investor flows, the B&G benchmark is zero alpha regardless of skill; a gender-specific departure identifies a flow-level wedge. Thus E, S, and I_ϕ share the B&G target $\alpha^* = 0$, whereas I_δ produces positive steady-state alpha for a female-managed fund. Under I_ϕ, gender changes the speed of adjustment rather than the target: because $\phi_F < \phi_M$, female-managed funds converge more slowly. The sign of the differential post-appointment alpha path depends on whether the inherited fund is initially over- or undersized, so this hypothesis does not imply a robust signed conditional alpha gap.

H5. Unconditional performance. Even when male and female managers are equally skilled and share the same long-run alpha target, Glass Cliff selection can produce lower unconditional alpha among female-managed funds. Women inherit adverse fund states whose size has not yet adjusted to the profitability shock. Under I_ϕ, the flatter flow response can prolong this adjustment. The unconditional gap is therefore a statement about assignment and composition, not necessarily about managerial skill.

The Glass Cliff alone cannot reveal which mechanism is at work. The remaining predictions shift attention to the shape of the flow–performance relation, the information contained in performance, and the difference between conditional and unconditional outcomes. These margins allow the hypotheses to be distinguished without treating the assignment pattern itself as evidence for any particular one.

3 Data and preliminary findings

3.1 Sources and variable definition

Our data comes from several sources. First, the manager's characteristics are sourced from Morningstar Direct, including their names, gender, tenures, among others. Although gender is a variable provided by the database, there are many missing values in this variable. In this case, we use given names (first and middle) to *manually* identify the genders. If a name is identified by other managers as female, we treat the whole group of managers who share this name as female, regardless of their surname. In some cases, the manager's gender is not immediately obvious from their given names; we also verify their gender using LinkedIn and/or their fund family website.

We also scrape the short biography of each fund manager from the Morningstar's website, which contains educational and professional background. From the educational background, we can quantify different levels of education based on the type of degrees, including BA, MBA, PhD, etc. The professional background includes the certificates such as CFA, CPA, among others. Since Morningstar removes webpages for inactive funds, we cannot directly scrape data for those funds. We instead assign manager biographical information from active funds managed by the same managers to their inactive funds, allowing the sample to include both active and inactive funds and thereby mitigating survivorship bias.

Throughout our analysis, we measure female representation using $Female_{i,t}$, defined as the percentage of female managers in fund i at month t, rather than restricting the sample to single-managed funds. Unlike studies that impose that restriction, we retain team-managed funds. Teams account for approximately 65% of fund observations in our sample, so excluding them would change the population under study rather than merely simplify measurement. Our continuous measure preserves the full fund population and captures the degree of female representation within teams. A binary *Has Female* indicator records whether at least one manager is female, but cannot distin-

guish a fund with one female manager out of five from one with four. Because attribution and investor responses may nevertheless differ by managerial structure, we report results separately for team-managed and single-managed funds.

To map the manager's characteristics with the fund's data, we rely on the International Securities Identification Number (ISIN) from Morningstar and extract the CUSIP by removing the first two-letter country code and the last digit of verification code. Then, we use the link table by CRSP Mutual Fund dataset to link fund CUSIP to Wharton Financial Institution Center Number (WFICN). The fund return, total net asset, investment objective category, expense ratio, age, family size, and other fund- and fund family- characteristics are sourced from the CRSP Mutual Fund dataset.

Flow is calculated by the total asset under management (TNA) and the fund's return (ret) in the following equation

$$Flow_t = \frac{TNA_t - TNA_{t-1}(1 + ret_t)}{TNA_{t-1}}. \tag{5}$$

Flow sensitivity is the beta constructed by regressing flow on the past returns after fees for the past 36 months.

The risk adjusted returns (Alphas) are estimated based on the four-factor model in Carhart (1997) or the three-factor model in Fama and French (1993). We source the time series of four factors: Market (MKT), Size (SMB), Value (HML), and Momentum (UMD) from Kenneth R. French's Data Library. The factor loading, reported as betas, of all four factors are estimated based on the same model. Our sample spans January 1992 to December 2022.

3.2 Summary statistics

Table 1 reports summary statistics at the fund-manager level. The sample comprises 325,370 female and 2,733,275 male manager-month observations over the period 1992–2022.

TABLE 1 ABOUT HERE

Panel A shows that educational attainment is broadly comparable across gender. Approximately 4–5% of managers hold a PhD, while female managers are slightly less likely to hold an MBA

(42% versus 48%). Professional certifications (e.g., CFA, CPA) are similarly distributed across genders, indicating comparable formal qualifications. Notably, female managers are more likely to have attended Ivy League institutions (26% versus 22%), suggesting comparable, if not higher, educational quality.

In contrast, female managers exhibit shorter tenure than their male peers, both at the current fund (4.51 versus 5.28 years, a 0.77-year gap) and across the industry as a whole (7.48 versus 8.94 years, a 1.46-year gap), a pattern consistent with Barber et al. (2018). The fraction of managers with experience at funds that became inactive during the sample is similar across gender (42% versus 41%). Overall, the evidence suggests that observable qualifications are broadly comparable across gender, while tenure differences likely reflect disparities in career progression rather than managerial ability.

A further feature of the industry that bears on managerial structure is the prevalence of multi-fund assignments. Managers in our sample run an average of 5 funds simultaneously, with no significant gender difference (mean of 5.15 for females and 5.06 for males; median of 3 funds in both groups). The most prolific male and female managers oversee 63 and 45 funds, respectively. This pattern, combined with team management in roughly 65% of funds, reflects the industry's standardized, process-driven nature, in which a manager applies a common investment framework across many mandates. This contrasts with venture capital or private equity, where each portfolio company typically requires individualized, board-level engagement.

Table 2 reports the summary statistics at the fund level. Consistent with prior studies Niessen-Ruenzi and Ruenzi (2019); Csiky and Pichler (2025), female managers' representation (*Female Per.*) in our sample averages 9.68% across observations in each fund. As shown in Figure 1, this representation has remained remarkably stable between 8% and 10% throughout the 1992–2022 sample period, despite a more than tenfold increase in the number of active funds and the introduction of federal and state-level diversity policies in the past decades.[5] When measured instead as a binary indicator for the presence of any female manager (*Has Female*), approximately 21% of fund-month observations contain at least one female manager. The gap between these two statistics underscores the importance of distinguishing degree from incidence: while one in five funds has a woman on the management team, women on average account for less than one in ten manager seats, reflecting their concentration in mixed-gender teams rather than equal representation across the industry.

[5] For example, California's 2019 board-diversity mandate.

Table 2 and Figure 1 about here

The appointment analyses below use two event indicators constructed from month-to-month manager identities in Table 2, including an ID-based female appointment and the narrower female-replaces-male appointment. Such events are rare: ID-based female appointments occur in only 0.38% of fund-month observations, compared with 2.62% for male appointments. As for the second indicator constructed from a further restricted subsample, the female-replace-male appointment occurs in only 0.06% of fund-month observations, while the male-replace-male counterpart is at 0.39%. The female shares in the appointment subsample are approximately 13%, which is slightly higher but still comparable to the full-sample female share (*Female Per.*) at 9.68%. Section 4.1 explicitly defines the two indicators and their conditional estimation samples.

Consistent with Patel and Sarkissian (2017), team management is prevalent in our sample, with approximately 65% of funds managed by multiple managers. Figure 2 decomposes the team structure further, distinguishing all-male, mixed-gender, and all-female teams over the sample period. The vast majority of team-managed funds are all-male, while all-female teams remain rare throughout the sample. Mixed-gender teams have grown in absolute numbers, reflecting the broader expansion of the industry, but their share has not meaningfully increased over time. This decomposition underscores the importance of accounting for team composition when evaluating managerial outcomes, and motivates our empirical strategy of treating female representation as a continuous measure that captures all four configurations: female single managers, female-only teams, mixed-gender teams, and male-only configurations.

Figure 2 about here

The average fund size is $1,714 million, with substantial dispersion (standard deviation of $6,600 million), reflecting the presence of both small and very large funds. The average fund family size is $ 141 trillion. Other fund-level characteristics remain comparable to the broader mutual fund universe. For instance, the average monthly gross return is 0.75%, and the mean expense ratio is 1.19%, both in line with existing datasets. In terms of performance, the average Carhart alpha (-0.02%) and Fama-French alpha (-0.03%) are slightly negative, consistent with the mutual fund literature documenting limited evidence of abnormal performance.

Table 3 reports the distribution of female managers across investment styles based on Lipper investment objective codes. Female representation exhibits substantial cross-category variation in

our sample, which we exploit to sort investment styles by the share of female managers. In natural resources funds (code: NR), the share of female managers is as low as 1%, whereas in utility funds (code: UT) it reaches 22%. This pattern is not systematically related to fund size. Similarly, among team-managed funds, there is no clear relationship between team management and female representation. Overall, female representation varies markedly across styles, motivating our empirical design, which relies on within-category comparisons throughout the paper.

TABLE 3 ABOUT HERE

4 Manager Appointment: The Glass Cliff Effect

4.1 Underperforming Funds and Female Appointments

We begin by examining the supply-side determinants of female manager appointments from the perspective of fund families. Specifically, we ask: what factors drive the decision to appoint a female manager? To answer this, we estimate the following panel regression:

$$\text{Appointed Female}_{i,t} = \alpha + \beta \text{PastPerformance}_{i,t-j} + \gamma' X_{i,t-1} + \lambda_j + \theta_t + \varepsilon_{i,t}, \tag{6}$$

where $\text{Appointed Female}_{i,t}$ is an indicator of female manager appointments. We consider two types of female appointments. The first is an ID-based appointment measure constructed by comparing the names of managers listed in each fund's management team across consecutive months. A female-appointment event occurs when a female manager's name is absent in the preceding month. The second type is restricted to the replacement of a male manager, where the departure of a male manager prior to the appointment is observed. Both outcomes are estimated on conditional samples rather than the full fund-month panel: the ID-based outcome on the sample of fund-months in which an appointment occurs, and the female-replace-male outcome on the sample of replacement events in which a male manager departs and the team size is unchanged. The estimates are conditional composition effects. For the ID-based outcome, they ask whether a fund that is filling a position is more likely to appoint a woman when its performance is poor. For the female-replace-male outcome, they ask the same question within the narrower set of male-departure events. $X_{i,t-1}$ is a vector of fund-level controls, including lagged return, fund size, expense ratio, age, family size, and aggregated manager characteristics (industry tenure, CFA credentials, graduate-level degrees, and

Ivy League education). λ_j denotes fixed effects for investment objective categories. θ_t represents year-month fixed effects. Standard errors are two-way clustered by year-month and investment category.

We measure PastPerformance$_{i,t-j}$ using multiple specifications. First, we employ risk-adjusted returns (alphas) estimated using the Carhart (1997) four-factor model, calculated on gross returns. Second, we examine average performance over rolling windows of 3, 6, and 12 months prior to the appointment decision. The use of multiple horizons reflects the notion that managerial replacement decisions are unlikely to respond to short-term performance fluctuations.

TABLE 4 ABOUT HERE - APPOINTED FEMALE

The results are reported in Table 4. The coefficients on past performance are consistently negative across all specifications and are often statistically significant, indicating that female managers are significantly more likely to be appointed to funds experiencing poor relative performance. The results are stronger in the female-replace-male appointments, where the 3- and 12-month windows show significant results. Importantly, the Glass Cliff effect persists across most performance windows examined, suggesting that fund families systematically assign female managers to underperforming funds regardless of the time horizon used to assess historical performance.

However, one might worry that female managers are simply being matched to particular investment styles that happen to perform worse. To rule out this alternative explanation, we further re-examine the selection mechanism within investment styles in the following section.

4.2 Style-Adjusted Performance and Female Appointments

A natural concern is that the selection effect documented in Section 4.1 could be driven by a "style" or "preference" effect rather than deliberate assignment to underperforming funds. Female representation varies substantially across investment objectives, ranging from 1% in natural resources funds to 35% in industrials (Table 3), with female managers more concentrated in larger funds and industry-specific categories. If certain styles systematically underperform and also attract more female managers, the appointment-performance relationship could reflect style sorting rather than within-style selection bias.

We address this concern by restricting comparisons within investment objectives. Within-category identification rests on three sources of comparability. First, funds within a category share similar characteristics, including size, past flows, and performance. Second, all regressions absorb investment-style heterogeneity through Lipper Class fixed effects. Third, time fixed effects ensure that comparisons are made across funds at the same point in the business cycle. Together, these restrictions isolate variation in female appointment that cannot be attributed to systematic differences across investment styles.

Within each investment objective, we rank funds into performance quintiles, where Group 1 represents the worst-performing funds and Group 5 represents the best-performing funds within each style. This approach is similar to Morningstar ratings but is based on monthly fund returns.[6] We then substitute the style-relative performance quintiles for the continuous past-performance measure in Equation (6) and re-estimate the regression on the same conditional samples—appointment months for the ID-based outcome and male-replacement events for the female-replace-male outcome. Under the null hypothesis that female appointments are driven only by performance differences across investment styles, a manager's past-performance rank relative to managers with the same style should not predict the probability of appointing a woman. Furthermore, if the Glass Cliff effect is present, female managers should be disproportionately appointed to the lowest-performing funds within each investment style.

Table 5 reports the results. Consistent with the previous analysis, we examine performance quintiles over the past 3, 6, and 12 months. The coefficients are uniformly negative and statistically significant, indicating that female managers are more likely to be appointed to funds in the lowest performance quintile within a given investment objective. These findings are robust to alternative measures, such as performance-based fractional ranks computed within each investment category.[7]

TABLE 5 ABOUT HERE - APPOINTED FEMALE STYLE ADJUSTED

This exercise also addresses the concern that female appointments may reflect heterogeneous skill requirements across investment styles. Since all rankings are constructed within investment objec-

[6] Morningstar ratings incorporate performance over 1-, 3-, and 5-year horizons. As a result, they are slow-moving measures of fund performance: their average autocorrelation across funds is approximately 0.84. By contrast, quintile rankings are less persistent and have a negative but statistically insignificant autocorrelation.

[7] To obtain a more granular measure of relative performance, we follow Patel and Sarkissian (2021) to construct a continuous performance rank ranging from 0 to 1, defined as the fund's fractional rank relative to peers within the same investment objective. Untabulated results yield conclusions consistent with those based on performance quintiles and Morningstar ratings.

tives, our results cannot be driven by cross-style differences in skill demand. Female managers are appointed to the worst-performing funds within each style, not to particular styles that happen to require different skills.

4.3 Selection into the Conditional Samples: A Heckman Correction

The baseline regressions in Table 5 condition on the relevant event by construction: the ID-based outcome is estimated on the appointment-only sample, and the female-replaces-male outcome on the male-departure sample. The coefficients therefore measure the composition margin directly. Specifically, we ask: given that an appointment occurs, or that a male incumbent departs, is the position more likely to go to a woman at a poorly performing fund? A natural concern with this design is that the months in which a fund enters the estimation sample are not a random draw of fund-months: entry itself may depend on unobservables that are correlated with past performance, so that the conditional sample is selected on the very forces we seek to measure.

To see how such selection could masquerade as a Glass Cliff effect, consider a troubled fund family with weak performance and high turnover that also—for reasons unrelated to any individual fund's condition, say a diversity initiative—appoints disproportionately many women to its vacancies. That family's funds enter the appointment sample often, and underperforming funds and female appointments then co-occur within the conditional sample. The women in this example are not being assigned to precarious positions; the correlation is a composition effect, not a Glass Cliff, but left uncorrected it would masquerade as one.

We address this concern by estimating a probit model with sample selection (Heckman, 1979; Van de Ven and Van Praag, 1981). The selection equation models entry into the conditional sample,

$$\text{Event}_{i,t} \;=\; \mathbf{1}\big\{\, \delta' Z_{i,t-1} \;+\; \beta_s \,\text{PastPerformance}_{i,t-j} \;+\; \gamma_s' X_{i,t-1} \;+\; \lambda_j \;+\; \theta_t \;+\; u_{i,t} \;>\; 0 \,\big\}, \quad (7)$$

and the outcome equation models, conditional on entry, whether the position goes to a woman,

$$\text{Appointed Female}_{i,t} \;=\; \mathbf{1}\big\{\, \beta_o \,\text{PastPerformance}_{i,t-j} \;+\; \gamma_o' X_{i,t-1} \;+\; \lambda_j \;+\; \theta_t \;+\; v_{i,t} \;>\; 0 \,\big\}, \quad (8)$$

where $Z_{i,t-1}$ is a vector of excluded predictors of the event, $X_{i,t-1}$ contains the fund-level controls of Equation (4), λ_j denotes fixed effects for investment objective categories, and θ_t represents time fixed effects. We report the results in Table 6 using the ID-based appointment outcome and the female-replaces-male appointment outcome.

TABLE 6 ABOUT HERE - HECKMAN MODEL

The selection equation in columns (1)–(4) models the occurrence of an appointment, and identification comes from two variables that enter only the selection equation: the lagged number of managers on the team, and the number of months since the fund's last appointment. Larger teams mechanically create more scope for turnover—the variable strongly predicts appointment incidence—while the number of seats as of the previous month has no natural bearing on the gender of the person hired to fill one. The tenure variable enters negatively: a team that has remained unchanged for longer is less likely to change now, reflecting the persistence of stable management team–fund matches rather than any property of the eventual appointee.

The male-replacement design of columns (5)–(6) addresses the sharpest version of the selection concern. Even within the appointment sample, poor performance could increase departures of male incumbents specifically, so that female-replace-male appointments would track male exits rather than the choice of successor. Following the previous section, we restrict the sample to replacement events—months in which a male manager is replaced and the team size is unchanged, so that the successor is either female (a female-replace-male appointment) or male (a male-replacement appointment)—and ask whether the successor is female. In these columns the selection equation models the occurrence of a replacement event, and identification comes from the mean and maximum tenure of the fund's male incumbents: long-tenured male incumbents face elevated retirement and rotation hazards, so these variables strongly predict that a male seat opens, while the tenure of the departing generation has no natural bearing on the gender of the successor chosen to fill the position.[8]

The Heckman-corrected coefficients on past performance in the outcome equation are negative and statistically significant across all specifications. For the ID-based appointment outcome, the estimates are -5.43 for alpha and -0.056 for ranking (columns (1)–(2)); for the female-replace-male outcome under the same selection equation, -11.70 and -0.214 (columns (3)–(4)). The male-replacement design yields similar estimates in columns (5)–(6): conditional on a male seat being filled, a fund one past-performance quintile lower is more likely to hand the seat to a woman (alpha -12.34, ranking -0.252).

The estimates of ρ are informative about where selection operates. For the broadest outcome, ρ is negative and significant (columns (1)–(2)), and the correction matters. For our sharpest

[8] We verify the exclusion restrictions directly by including each candidate instrument in the outcome equation; the male-tenure instruments of columns (5)–(6) are indistinguishable from zero there ($t = -0.10$ and -0.89).

outcome, female-replace-male, $\rho \approx 0$ (columns (3)–(4)): the corrected and uncorrected estimates coincide, indicating that this definition is essentially free of selection on unobservables. In the male-replacement design of columns (5)–(6), ρ is statistically insignificant, reflecting the smaller event sample ($\approx$ 1,400 replacements); the Glass Cliff coefficient nevertheless survives at the five percent level.

Two caveats define what the correction accomplishes. First, the correction addresses how funds enter the estimation sample, taking the performance measure itself as given; because performance is measured over months $t-6$ through $t-1$ and ranked within investment styles, it is predetermined with respect to the appointment and unaffected by style-level shocks. Second, ρ absorbs all common unobservables indiscriminately: genuine confounds such as the composition effect above, but also appointments responding to distress our performance measures do not capture—for example, a fund replacing its manager after an unobserved operational failure and appointing a woman as a visible signal of change—which would themselves reflect the Glass Cliff mechanism. Thus, our Heckman-corrected estimates are, if anything, conservative: they isolate the component of the pattern attributable to measured past performance. Across instrument sets, outcome definitions, and selection margins, the estimates consistently indicate that poor past performance is associated with a higher probability that a new fund manager appointment goes to a female manager.

4.4 Risk-Aversion Stereotype

A common stereotype, supported by some experimental evidence (Croson and Gneezy, 2009), is that women are more risk-averse than men. If fund families internalize this stereotype, they may systematically assign female managers to lower-risk portfolios, potentially confounding our interpretation of the Glass Cliff effect. Under this alternative explanation, female appointments would be predicted by a fund's risk profile rather than its past performance. We test this by replacing past performance with the fund's lagged risk loadings and re-estimating the appointment regression:

$$\text{Appointed Female}_{i,t} = \alpha + \beta \text{FactorLoading}_{i,t-1} + \gamma' X_{i,t-1} + \lambda_j + \theta_t + \varepsilon_{i,t}, \tag{9}$$

where $\text{FactorLoading}_{i,t-1}$ denotes the loading on each of the four factors used in Carhart (1997): Market, Size, Value, and Momentum. By maintaining within-category comparisons, year-month fixed effects further absorb time-varying risk characteristics, isolating the selection effect from style-specific risk profiles. The regression includes year-month and investment-category fixed effects. The

controls from the previous tables are also included in this regression, although their coefficients are not tabulated in Table 7 to conserve space. Standard errors are two-way clustered by time and investment category.

TABLE 7 ABOUT HERE - RISK LOADING

The results are presented in Table 7. In most cases, none of the four risk factors significantly predicts female appointments in either the univariate or multivariate models. The estimated coefficients are small in magnitude and statistically indistinguishable from zero, with t-statistics ranging from -0.40 to 1.58, except for the univariate regression for the SMB factor, with a t-statistic of 2.54. However, this significance vanishes when we pool all four factors in the panel regression, in which all coefficients are insignificant. This result is robust to alternative definitions of female appointments, including those in which a female manager replaces a male manager. Taken together, these findings indicate that portfolio risk profiles do not explain the appointment gender gap. The primary predictor of female appointment is poor past performance, not risk profile, ruling out the risk-aversion stereotype as the mechanism driving the Glass Cliff effect documented in Sections 4.1 and 4.2.

In summary, we document a key supply-side finding: fund families are significantly more likely to appoint female managers to funds with poor performance relative to peers within the same investment objective.

5 Demand Side Bias: Investors' Flows

5.1 Flow Sensitivity: Convexity Gap

To rationalize the Glass Cliff pattern discovered in Section 4, we examine whether investors respond differently to female managers' performance. We hypothesize that if investors systematically fail to reward female managers' superior performance through proportional capital inflows, fund families face a perverse incentive: assigning female managers to high-performing funds yields diminishing profits. This provides an economic explanation for the Glass Cliff.

To visualize this relationship, we present Figure 3, which plots flows against past Carhart alpha

rankings, where rankings are computed strictly within each fund's investment category. The figure presents four panels: the whole sample (with versus without female managers), single-manager funds (male versus female), and funds with varying degrees of female representation in teams on the right-hand side.

FIGURE 3 ABOUT HERE - FLOW-SENSITIVITY BY GENDER

The unconditional plots show that the full-sample difference in average flows is largest in the top performance quintile. Among single-managed funds, female-managed funds receive lower average flows in four of the five quintiles. These comparisons describe average flow levels within rank bins. The regressions below estimate conditional slopes within performance segments, allowing us to distinguish differences in flow levels from differences in the response to performance.

To formally test this asymmetry, we estimate the following equation using both Fama–MacBeth (Fama and MacBeth, 1973) and cross-sectional regressions.

$$\text{Flow Sensitivity}_{i,t+36} = \alpha + \beta \text{Female}_{i,t} + \gamma' X_{i,t-1} + \lambda_j + \varepsilon_{i,t}, \tag{10}$$

where $Female_{i,t}$ is our variable of interest, denoting female representation in fund i at month t. We compute *Flow Sensitivity* 36 months ahead to avoid overlapping windows, since the measure is constructed using a 36-month rolling regression of flows on past returns.

Second, to identify where in the performance distribution the gender penalty appears, we directly regress monthly flows on female representation interacted with relative performance, following the piecewise specification of Sirri and Tufano (1998):

$$\text{Flow}_{i,t} = \alpha + \sum_k (a_k + \beta_k \, \text{Female}_{i,t-1}) \, \text{Perf}^k_{i,t-1} + \delta \text{Female}_{i,t-1} + \gamma' X_{i,t-1} + \lambda_j + \varepsilon_{i,t}, \tag{11}$$

where $\text{Female}_{i,t}$ is an indicator of funds with at least one female manager and $\text{Perf}^k_{i,t-1}$ denotes performance segments at the bottom (LowPerf), middle (MidPerf), and top (HighPerf) of the fractional rank distribution. We estimate this specification separately for team-managed and single-managed funds to test whether the penalty operates differently across managerial structures.

Table 8 reports the results. Columns (1) to (3), which estimate Equation 10, show a flow–performance slope gap: the coefficient on *Female* is negative and statistically significant in both

panel (-0.0187, $t = -2.90$) and Fama-MacBeth (-0.0251, $t = -6.77$) specifications, indicating that female-managed funds exhibit a flatter flow-to-performance curve than male-managed funds. In the controlled panel specification, a one-percentage-point higher monthly net return is associated with a monthly net-flow response that is 0.0187 percentage points of AUM smaller for funds with at least one female manager. For scale, the average sensitivity among funds with no female managers in the same estimation sample is 0.0689, corresponding to 0.0689 percentage points of AUM per one-percentage-point higher monthly return. The estimated difference is approximately 27% of this baseline. This comparison uses the unadjusted male-group mean as a scale benchmark for the conditional regression coefficient.

TABLE 8 ABOUT HERE - FLOW SENSITIVITY

Columns (4) to (6) show that the location of the flow-response difference varies with managerial structure. Among team-managed funds (column 5), the interaction *HighPerf* $\times$ *Female* is negative and significant (-0.0123, $t = -3.29$), whereas the bottom interaction ($+0.0018$, $t = 0.42$) and the middle interaction ($+0.0006$, $t = 0.47$) are statistically insignificant. Among single-managed funds (column 6), the bottom interaction is negative and significant (-0.0126, $t = -2.46$), while the middle and top interactions are statistically insignificant. The full-sample estimates show a negative and significant top interaction (-0.0112, $t = -3.86$) and insignificant bottom and middle interactions.

These interactions measure gender differences in the flow–rank slope within each segment. They indicate a weaker response in the top quartile among teams and in the bottom quartile among single-managed funds. For single-managed funds, the female interaction is -0.0126.

The weaker responses at the top among teams and at the bottom among single-managed funds are consistent with the attenuation mechanism in the model. The model predicts a smaller positive response to alpha under female management on both sides of zero, while the piecewise estimates show that the location of the response difference varies with managerial structure. Having established an overall sensitivity gap and identified where it appears in the rank distribution, we next ask whether flow sensitivity changes within a fund when a woman is appointed, or instead reflects the kinds of funds women inherit.

5.2 Flow-Performance Sensitivity Around Manager Appointments

Section 5.1 documents that female-managed funds face a flatter flow-performance relation on average, but a cross-sectional comparison cannot distinguish two very different stories. The gap could reflect a genuine change in how investors respond to a fund's performance once a woman is appointed, consistent with the gendered-processing mechanism (I_ϕ) of Section 2. Alternatively, funds with a chronically flatter flow-performance relation, for reasons unrelated to the manager's gender, could simply be more likely to receive a female appointment, in which case the cross-sectional gap would be a composition effect rather than a consequence of the appointment itself.

We distinguish these explanations with an event-time design centered on the manager appointment. For each fund with an appointment, we compute flow sensitivity, the slope from a monthly regression of fund flow on the one-month-lagged within-style performance quintile, separately over a pre-appointment window ($t-24$ to $t-1$, or $t-36$ to $t-1$) and a post-appointment window ($t+1$ to $t+24$, or $t+1$ to $t+36$). Panel A of Table 9 regresses the female-appointment indicator on pre-appointment sensitivity; Panel B regresses post-appointment sensitivity on the appointment indicator; Panel C uses the post-minus-pre change in sensitivity as the dependent variable. As in Section 4.1, we report results separately for ID-based female appointments and for the subset in which a woman replaces a departing male manager, with the standard fund controls, category fixed effects, and year-month fixed effects throughout; the two definitions are estimated on all appointment events and on the male-replacement events, respectively.

Table 9 about here - flow sensitivity around appointments

Panel A shows that pre-appointment flow sensitivity carries no predictive power for the gender of the incoming manager: the coefficient is close to zero and statistically insignificant at both horizons and for both appointment definitions (t-statistics ranging from -0.02 to 0.79). Funds that already had a flatter flow-performance relation before the vacancy are no more or less likely to have that vacancy filled by a woman. This rules out reverse causality as an explanation for the cross-sectional convexity gap of Section 5.1.

Panel B shows that sensitivity is instead lower after a female appointment. The effect is modest for ID-based appointments, significant only at the 36-month horizon (-0.0004, $t=-3.36$), but considerably sharper when a woman replaces a departing man (-0.0014, $t=-1.90$ at 24 months;

-0.0012, $t = -2.19$ at 36 months). Panel C confirms that the within-fund change in sensitivity from before to after the appointment is negative throughout, reaching significance at the 36-month horizon for ID-based appointments (-0.0004, $t = -2.11$) and at both horizons for female-replaces-male appointments (-0.0020, $t = -2.46$ at 24 months; -0.0022, $t = -2.28$ at 36 months).

Taken together, the three panels provide the sharper timing test motivated by H2 in Section 2.2: the flow-performance slope does not predict who is appointed, but it falls after a woman is appointed, and it falls the most when she replaces a man. This pattern is specific to a change in slope rather than a change in level, which distinguishes the gendered-processing mechanism (I_ϕ) from employer discrimination (E) and the skill-gap hypothesis (S), both of which leave investor behavior gender-blind, and from investor flow-level discrimination (I_δ), which would shift the flow curve without changing its slope.

5.3 Performance Persistence by Manager Gender

The muted investor response documented in Table 8 and Table 9 would reflect efficient, rather than gendered, processing if female managers' current performance were simply a less informative signal of their future performance. One possible explanation is the "greater male variability" hypothesis: investors may believe that men's latent skill is more dispersed than women's. If so, the same performance observation moves beliefs more about a male manager's skill, making a weaker flow response to a female manager rational even without discrimination. Internet Appendix A.4 discusses this interpretation and the evidence in more detail.

We test this directly by asking whether current performance predicts future performance differentially by manager gender. We regress future performance, measured as average Carhart alpha or within-style performance quintile over $t+1$ through $t+6$ and separately over $t+7$ through $t+12$, on past performance over $t-6$ through $t-1$, an indicator *Has Female* for whether the fund has at least one female manager, and their interaction, together with the standard lagged fund and manager controls; these regressions are estimated on the full fund-month panel, not conditional on an appointment. Panel A of Table 10 reports category and year-month fixed-effects specifications at both horizons; Panel B repeats the shorter-horizon specification with fund fixed effects.

TABLE 10 ABOUT HERE - PERFORMANCE PERSISTENCE

Past performance exhibits statistically detectable persistence in every specification: the coefficient on past alpha is 0.119 ($t = 7.91$) over the first six months and 0.080 ($t = 5.95$) over months seven through twelve, and the coefficient on past rank is 0.126 ($t = 14.28$) and 0.099 ($t = 12.13$) at the same horizons. *Has Female* enters negatively and significantly on its own in every column, anticipating the unconditional performance gap we examine in Section 6. The interaction terms, however, are small and statistically indistinguishable from zero throughout (t-statistics between -0.69 and 1.54 for the alpha- and rank-based measures at both horizons), and the fund fixed-effects specification in Panel B yields the same conclusion at the shorter horizon.

The estimated persistence is therefore no weaker for female-managed funds: we find no evidence that a given past-performance signal is less informative about a fund's future performance when a woman manages it. This exercise is not intended to establish that mutual-fund alpha is persistently exploitable or to reopen that literature; it asks only whether the persistence in these measures differs by manager gender. The evidence is inconsistent with the genuine-signal-precision interpretation of the flatter flow-performance relation and instead supports H3 in Section 2.2: investors respond less to female managers' performance even though that performance is estimated to be no less predictive, consistent with the gendered-processing mechanism (I_ϕ) rather than a rational response to a noisier signal.

6 Managerial skills: The Illusion of the Unconditional Gap

6.1 The Methodological Challenge

We have documented two structural barriers that female managers face: endogenous assignment to underperforming funds and a muted investor response to their performance. These structural frictions raise a fundamental measurement problem: any unconditional comparison of fund performance across genders confounds true managerial skill with the pre-existing portfolio characteristics that female managers inherit at the moment of appointment. We refer to this confounded performance metric as "dirty alpha," a misleading signal generated by two correlated channels: inherited "sinking ship" portfolios (pre-existing underperformance) and the muted flow response to performance that follows female appointments.

Table 11 illustrates the unconditional alpha pattern. In standard panel specifications with category and year-month fixed effects, the coefficient on *Female* is consistently negative and statistically

significant across all columns, suggesting that funds with female managers underperform by 4–5 basis points monthly. This pattern is consistent with prior studies, including Patel and Sarkissian (2017) and Csiky and Pichler (2025).[9]

TABLE 11 ABOUT HERE - UNCONDITIONAL PERFORMANCE

We next examine how fund performance evolve with the tenure of female managers. To capture these dynamics, we augment the specifications with variables measuring managers' experience at their current fund, which increases over time even in the absence of new appointments. We use two groups of measures: the maximum (mean) tenure of female managers within a fund and the gender gap between the maximum (mean) tenure of female and male managers. We also have gender-blind tenure measures, which are statistically insignificant (columns 2 and 5 of Table 11) if used alone. In columns (3), (4), (6) and (7), all measures enter positively and three out of four significantly, while the coefficient on the female-manager indicator remains negative and significant. These results suggest that although funds with female managers initially exhibit lower performance, this performance gap narrows as female managers remain with the same fund.

These unconditional estimates of improving performance indirectly indicates that newly arrived female managers are often positioned in the underperforming funds, consistent with a Glass Cliff uncovered by Table 4 and 5. However, they are not informative about managerial skill. Because female assignment is systematically endogenous to poor past performance (Reuben et al., 2014; Armstrong et al., 2024), unconditional models cannot disentangle skill from inherited disadvantage. To recover a clean estimate of managerial skill, we must isolate the differential effect of female appointment from the pre-existing trajectory of the funds to which female managers are assigned.

[9]This result is also consistent with descriptive statistics in Sehrish et al. (2024). Earlier work yielded mixed results. Bliss and Potter (2002) report a modest positive relationship between female representation and performance in a sample of equity mutual funds during the 1990s, while Niessen-Ruenzi and Ruenzi (2019) find no significant performance difference in their sample restricted to single-managed funds. Barber et al. (2018) similarly find no significant performance difference between male and female managers, although they document that female managers, particularly those co-managing in teams, face worse career outcomes in terms of promotion and tenure. Our unconditional results, which use a broader sample including both single- and team-managed funds, align with more recent findings of an apparent negative performance gap.

6.2 Difference-in-Differences Framework

Female appointments are endogenous because women are disproportionately assigned to funds with weak pre-appointment performance. To separate this inherited trajectory from the effect of manager gender, we adopt a quasi-Difference-in-Differences (DiD) design that compares post-appointment performance and flows between female- and male-appointed managers, using male-appointed funds as a control group for the inherited portfolio trajectory. Figure 4 illustrates the event structure. For each manager appointment, we define a 12-month pre-appointment window ($t-12$ to $t-1$) that captures baseline performance and flows, an event window ($t-3$ to $t+3$) that brackets the appointment month, and a 12-month post-appointment window ($t+1$ to $t+12$) over which treatment effects are observed.

FIGURE 4 ABOUT HERE - DID TIMELINE

Several sample restrictions are implemented to ensure clean identification. We drop the female-replace-female type of female appointment in the treated group. As for the control group, we keep only the male-replace-male type of male appointment. As a result, the male-replace-female type of male appointment will not be in our control group to ensure our comparison is made conditional on departure of male managers. If we observe both female and male appointments within the outer event window, we drop both events because the gender-specific effect cannot be isolated. If we observe multiple same-gender appointments in the inner window, we combine them by relabeling the average month as the event date. We also exclude any events occurring in the outer windows ($t\pm4$ to $t\pm9$) to avoid staggered treatment.[10] After trimming, we obtain 2,479 appointment events, of which 670 (approximately 27.03%) involve female appointments.

We estimate the following standard 2×2 DiD specification:

$$\begin{aligned} Y_{i,t} = \alpha + \beta_1 \text{Post}_{i,t} + \beta_2 \text{FemaleAppoint}_i + \beta_3 \, \text{Post}_{i,t} \times \text{FemaleAppoint}_i \\ + \gamma' X_{i,t-1} + \lambda_j + \theta_t + \varepsilon_{i,t}, \end{aligned} \tag{12}$$

where $Y_{i,t}$ is either monthly fund performance (Carhart alpha) or monthly fund flow, $Post_{i,t}$ equals one for the 12-month post-appointment window, and $FemaleAppoint_i$ equals one if the appointment involves at least one female manager. Furthermore, $FemaleAppoint_i$ contains two types of female

[10] The maximum number of appointments observed within any inner window in our sample is three.

appointment: ID-based female appointment, and a more restricted measure that identifies only the female-replace-male appointment among the ID-based measure.

6.3 Post-Appointment Performance: Indistinguishable Skill

Our coefficient of interest is β_3 in Equation (12), which captures the differential change in performance for female-appointed funds relative to male-appointed funds after the event. A statistically insignificant β_3 for performance would imply that, once endogenous assignment is properly controlled for, female and male managers exhibit equal skill.

Table 12 reports the DiD results for post-appointment performance. With the ID-based Female appointment (column 1), the interaction term Post $\times$ Female is statistically insignificant (-0.0158, $t = -0.34$), indicating that the apparent gender performance gap from unconditional models disappears once selection is properly accounted for. Similar results are found with the female-replace-male appointment (column 2), where the interaction term is also insignificant (-0.0178, $t = -0.16$).

Table 12 about here - post-appointment performance

In contrast to the unconditional performance gap documented in Table 11, the post-appointment performance of newly appointed female managers is comparable to that of newly appointed male managers, conditional on the departing manager being male. This evidence helps rule out gender gap in managerial skill as an alternative explanation and therefore further weakens the case for statistical discrimination.

6.4 Robustness and Discussion

The gender literature (Sehrish et al., 2024) documents differences in risk-taking behavior between female and male decision makers. To examine whether such differences extend to managers' asset allocations, we collect fund-level portfolio composition data from Morningstar, including the shares of equity, bonds, cash, and other asset classes. Given that equity allocations are the most consistently reported, we use the equity share as a proxy for portfolio risk and test whether female managers hold less risky portfolios than their male counterparts. We further examine liquidity risk by constructing the Amihud (2002) measure and incorporating fund turnover as an additional

proxy. We find no evidence that risk-taking behavior or liquidity risk differs in our analysis of female manager appointments.[11]

A separate concern is whether male managers' superior unconditional performance and capital flows reflect access to informal professional networks, such as connections with CEOs, sell-side analysts, or institutional brokers, rather than the structural frictions we document. We do not argue that networks are irrelevant in mutual funds. (Cohen et al., 2008) shows that managers earn higher returns on holdings of firms whose board members share their educational background, and (Pool et al., 2015) finds that information is transmitted through neighborhood-based peer networks. What our analysis shows is more specific: while such network channels may operate at the level of individual holdings, they do not produce a measurable gender gap in fund-level post-appointment alpha after accounting for the funds managers inherit.[12]

Two features of the industry may further moderate the role of individual relationships in driving gender disparities. First, active equity mutual funds hold diversified portfolios of 50 to 150+ stocks, which mechanically dilutes the contribution of any single connection to overall fund returns. This contrasts with more concentrated vehicles such as venture capital, where networks have been shown to substantially shape fund-level performance (Hochberg et al., 2007). Second, fund families typically separate portfolio management from capital-raising through dedicated internal sales divisions, limiting the extent to which a manager's personal broker relationships translate into fund-level flows.

7 Conclusion

This paper provides a comprehensive analysis of the systemic barriers faced by female managers in the US equity mutual fund industry from 1992 to 2022. While raw performance data might initially suggest a gender gap in managerial ability, our study reveals that this gap can be accounted for by two significant structural frictions: a supply-side appointment bias and a demand-side investor penalty.

First, we document a persistent Glass Cliff phenomenon, in which female managers are systematically assigned to funds with deteriorating historical performance and poor relative rankings. We rule out the possibility that this reflects matching women to less risky portfolios; it is the "sinking

[11] See results in Appendix Table A.2.
[12] See the difference-in-difference results in Table 12.

ship" status of the fund that predicts a female appointment. Second, we uncover a demand-side barrier that operates on the slope rather than the level of capital allocation. Female managers face a significantly flatter flow-performance relationship than their male counterparts; the relation flattens within a fund after a woman is appointed rather than characterizing the funds she is given; and the attenuated response is not warranted by the signal, since past performance forecasts future performance equally well irrespective of manager gender. Third, our analysis of post-assignment performance reveals that despite inheriting underperforming funds, female managers demonstrate skill levels indistinguishable from their male peers. Because a gender-dependent slope makes a female appointment costly at a strong fund and cheap at a weak one, the first finding is best read as the fund family's response to the second rather than as an independent friction.

These findings have significant implications for fund families and regulators. For fund families, the systematic assignment of women to high-failure-risk roles may inadvertently shorten their career tenures and reinforce unfounded stereotypes regarding female performance. For investors and regulators, our results highlight the need for greater transparency and a reassessment of how managerial transitions are communicated to mitigate the "gender penalty" in capital flows.

By disentangling selection effects from ability, we show that the female performance gap is a product of structural factors that the market's own flow mechanism fails to discipline. The mechanism can disadvantage any group whose performance investors discount. On the demand side, capital responds less strongly to that group's performance. On the supply side, fund families assign its members to the funds where this distorted response is least costly. The result is a failure to match talent with capital, which harms market efficiency as well as fairness.

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Figure 1. Female managers representation in mutual fund industry

This figure presents the female percentage as mutual fund managers in the US industry. The bars show the numbers of funds, which naturally grow over time. The blue line exhibits the average female percentage over time.

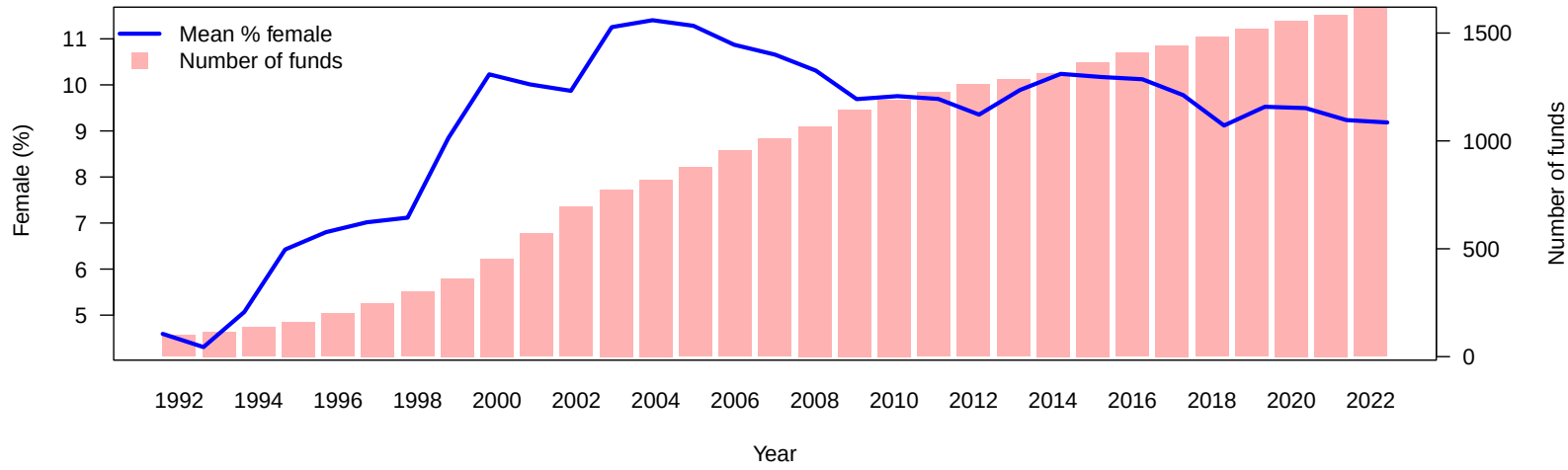


Figure 2. Team composition

This figure depicts the team composition in non single-manager funds from 1992 to 2022. There are three types of team composition: Female only (black bars), Mixed-gender team (dark gray bars), and Male only (light gray bars).

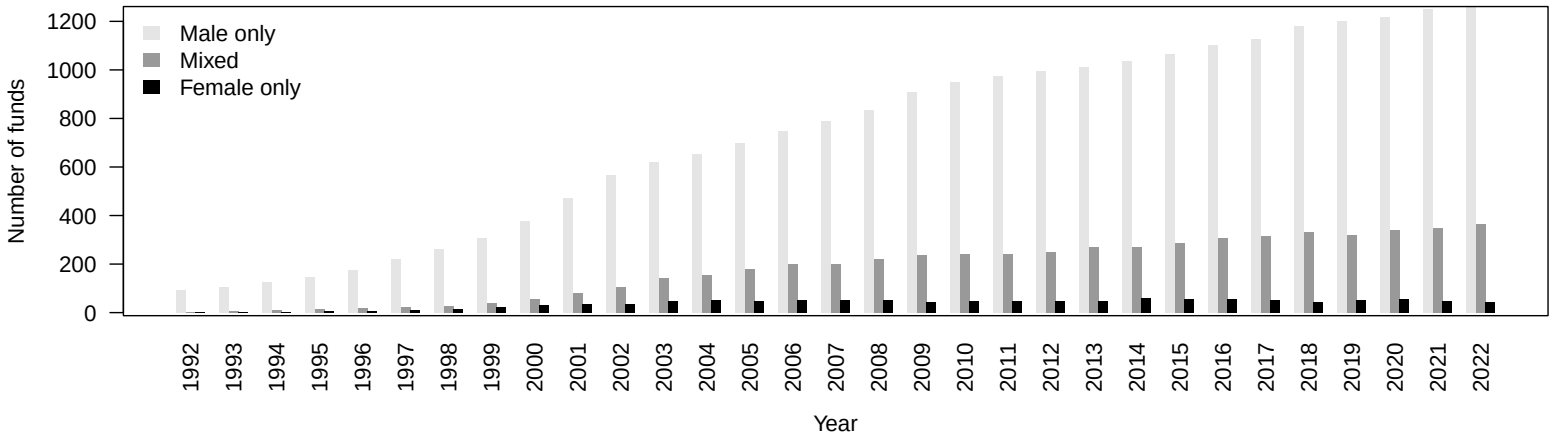


Figure 3. Flow-performance relation by gender

This figure depicts the relation between the flows (expressed in percentage) and the lagged performance based on Carhart alpha ranking within investment objective. The lagged fund performance is sorted into quintiles (1, the worst; 5, the best). The dashed blue lines represent funds with male only managers. The black solid lines in left plots indicate funds with female manager(s). In the upper-right plot, the black solid line represents funds managed by a team of mixed gender managers. In the lower-right plot, the black solid (red dotted) line represents funds managed by a team with less than (larger than or equal to) 25% of female managers. The sample covers the period between January 1992 and December 2022.

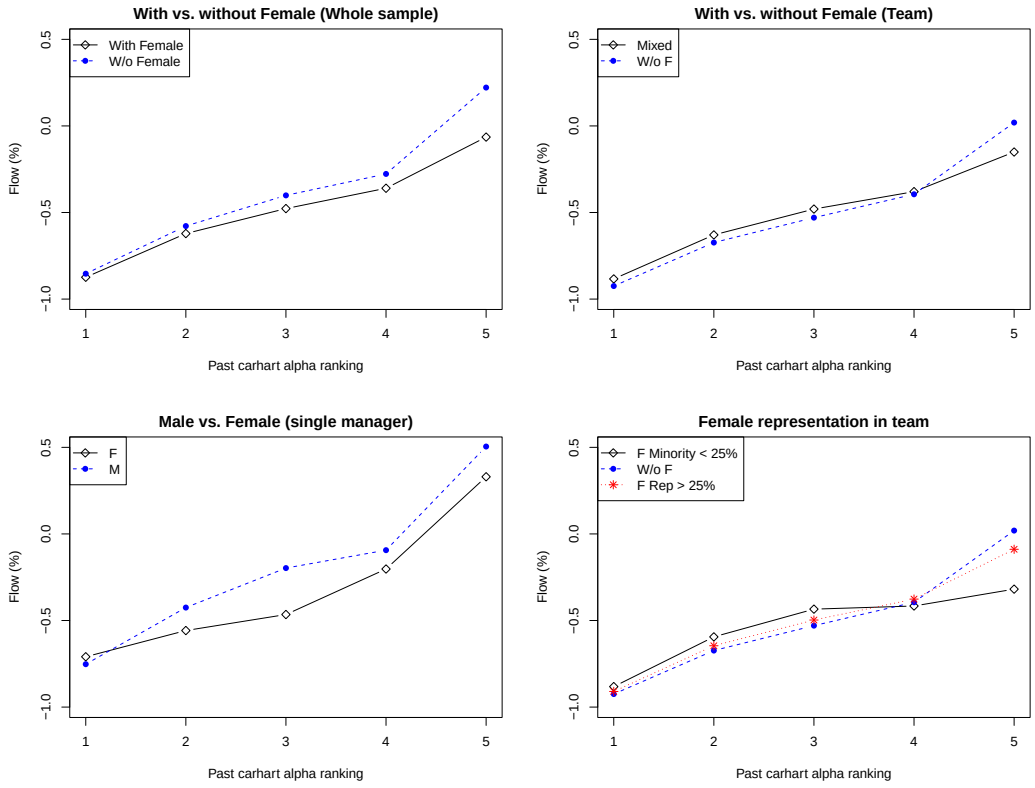


Figure 4. Event study timeline

This figure demonstrates the sample constructions of Difference-in-Differences design.

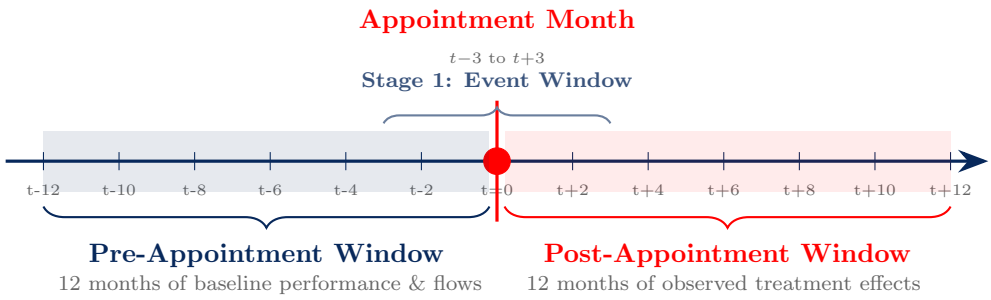


Table 1. Summary Statistics at Manager Level

This table presents summary statistics at the manager level for actively managed equity funds from January 1992 to December 2022.

	Female (obs. = 325,370)				Male (obs. = 2,733,275)			
Variable	Mean	Std	Median	Max	Mean	Std	Median	Max
Panel A: Education & certificates								
PhD	0.05	0.22	0	1	0.04	0.21	0	1
MBA	0.42	0.49	0	1	0.48	0.50	0	1
MA	0.14	0.35	0	1	0.17	0.37	0	1
BAA	0.66	0.47	1	1	0.68	0.47	1	1
CFA	0.32	0.47	0	1	0.33	0.47	0	1
CPA	0.01	0.11	0	1	0.01	0.12	0	1
FRM	0	0	0	0	0.00	0.05	0	1
Foreign education	0.17	0.37	0	1	0.13	0.34	0	1
Ivy league	0.26	0.44	0	1	0.22	0.41	0	1
Panel B: Industry experiences								
Tenure in fund (years)	4.51	4.41	3.20	30	5.28	5.16	3.70	55.70
Tenure in industry (years)	7.48	5.77	6.25	33.52	8.94	6.96	7.36	55.78
Inactive Funds Exp.	0.42	0.49	0	1	0.41	0.49	0	1
Num Funds Managed	5.15	6.69	3	45	5.06	7.14	3	63

Table 2. Summary Statistics at Fund Level

This table presents the summary statistics for actively managed equity funds during the period from January 1992 to December 2022. Female Per. represents the female share in a fund. Has Female is a dummy variable indicating any female in each fund. ID-based Female (Male) Appoint. is a dummy variable that indicates the newly arrived female (male) managers in the fund. Female-replace-male (Male-replace-male) Appoint. is a subset of the ID-based measures that identify only the appointment event where male managers are replaced. Fund size is the monthly asset under management ($MTNA$). Age is the number of months since find initiation. Monthly Gross Return ($Rret$) is before fees. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1 + Rret_t)]/MTNA_{t-1}$. # of CFA is the number of managers who hold a CFA certificate, and # of MBA is the number of managers who has an MBA degree or above. Team is an indicator for funds managed by a team of managers. MKT, SMB, HML, and UMD Betas are factor loadings recorded from the Carhart 4-factor model.

	N	Mean	Std	Min	p25	Median	p75	Max
Female Per.	537,972	9.68	22.71	0	0	0	0	100
Has Female	537,972	0.21	0.41	0	0	0	0	1
Monthly Flow (%)	533,347	−0.39	4.70	−48.06	−1.65	−0.59	0.58	54.07
Flow Sensitivity	537,972	69.79	249.44	−1133.67	−35.44	25.90	120.67	3011.95
ID-based Female Appoint. (%)	534,142	0.38	6.17	0	0	0	0	100
Female-replace-male Appoint. (%)	534,142	0.06	2.42	0	0	0	0	100
ID-based Male Appoint. (%)	534,142	2.62	15.97	0	0	0	0	100
Male-replace-male Appoint. (%)	534,142	0.39	6.20	0	0	0	0	100
Carhart Alpha (%)	537,972	−0.02	1.73	−12.68	−0.82	−0.02	0.78	13.27
FF Alpha (%)	537,972	−0.03	1.85	−13.59	−0.88	−0.03	0.81	13.87
Fund size (millions)	537,972	1714.56	6600.50	5	86.6	312.2	1119.8	301870
Monthly Gross Return (%)	537,972	0.75	5.31	−26.47	−1.96	1.16	3.81	26.21
Expense Ratio (%)	537,584	1.19	0.44	0	0.93	1.14	1.41	8.89
Age	537,972	202.10	162.90	25	92	158	255	1181
Family size (trillions)	537,972	141.13	452.22	0.01	2.22	16.64	69.92	7260.56
# of CFA	468,866	0.90	1.38	0	0	0	1	19
# of MBA	468,866	1.31	1.53	0	0	1	2	21
# of IVY	468,866	0.63	0.98	0	0	0	1	12
Team	537,972	0.65	0.48	0	0	1	1	1
MKT Beta	537,972	0.99	0.32	−31.86	0.89	0.99	1.08	14.27
SMB Beta	537,972	0.20	0.52	−28.07	−0.09	0.10	0.47	51.65
HML Beta	537,972	0.01	0.66	−61.81	−0.22	0.01	0.23	78.66
UMD Beta	537,972	0.00	0.36	−50.63	−0.10	0.00	0.10	18.86

Table 3. Summary statistics by style

This table presents the demography of female manager(s) by investment style according to Lipper objective codes, during the period from January 1992 to December 2022. The column 'Female' shows the female percentage based on which this table is sorted. 'Team' indicates the fraction of team-managed funds. 'Size' is the average of the funds' total net asset in trillion dollars.

Code	Objective class name	Female	Team	Size	# of funds
NR	Natural Resources	0.01	0.49	0.90	3159
TK	Science & Technology	0.07	0.49	1.13	6612
TL	Telecommunication	0.07	0.46	0.24	913
MLVE	Multi-Cap Value	0.08	0.69	2.71	20512
MLCE	Multi-Cap Core	0.08	0.70	2.20	17744
LCGE	Large-Cap Growth	0.08	0.62	2.15	19033
SCVE	Small-Cap Value	0.09	0.68	1.18	15785
MCCE	Mid-Cap Core	0.09	0.62	1.59	8900
LCVE	Large-Cap Value	0.09	0.67	4.32	13901
SCGE	Small-Cap Growth	0.10	0.76	0.79	15706
MLGE	Multi-Cap Growth	0.10	0.61	1.97	14413
MCVE	Mid-Cap Value	0.10	0.66	1.03	8649
SCCE	Small-Cap Core	0.10	0.74	0.69	15088
EIEI	Equity Income	0.11	0.70	2.41	12802
LCCE	Large-Cap Core	0.11	0.59	3.31	15876
MCGE	Mid-Cap Growth	0.13	0.71	0.83	10971
FS	Financial Services	0.15	0.33	0.34	3561
H	Health/Biotechnology	0.16	0.41	2.01	4447
S	Specialty/Miscellaneous	0.19	0.18	0.59	3052
UT	Utility	0.22	0.51	0.46	3090
ID	Industrials	0.35	0.68	0.08	231

Table 4. Selection

This table reports the regressions of female appointments on trailing past performance. ID-based female appointment is an indicator constructed by comparing managers' names over time and it is estimated on the Appointment-only sample. Female-replace-male appointment is an indicator of the female appointments in which a former male manager was replaced, and is estimated on the male-departure sample only. The past 3-, 6- and 12-month performance is calculated by the average of the Carhart alpha in the past. MTNA is monthly total net assets under management, measured in trillions of U.S. dollars. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1 + Rret_t)]/MTNA_{t-1}$. MRET is monthly gross return, in percent. Age is the number of decades since fund initiation. Tenure is the industry experience in number of decades of the fund's managers. Expense is the fund's annual expense ratio. FamilySize is the natural log of total asset under management in billion U.S. dollars for the fund family to which the equity fund belongs. CFA, MBA, Ivy is the number of female managers who hold a CFA certificate, an MBA degree, and had education from an Ivy league institution. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

	Dependent Variable					
	ID-based Female Appt.			Female-replace-male Appt.		
	(1)	(2)	(3)	(4)	(5)	(6)
Past 3m alpha	−0.5750			−2.4059**		
	(−1.04)			(−2.51)		
Past 6m alpha		−1.1044*			−2.5121	
		(−1.89)			(−1.70)	
Past 12m alpha			−1.1524			−3.8689*
			(−1.57)			(−1.96)
$MTNA_{t-1}$	−0.7134	−0.6606	−0.5765	−1.5106*	−1.4690*	−1.4659**
	(−1.72)	(−1.55)	(−1.28)	(−2.09)	(−2.08)	(−2.15)
$MRET_{t-1}$	−0.4305**	−0.3821*	−0.5252**	0.5613	0.3149	0.0860
	(−2.36)	(−1.82)	(−2.42)	(1.07)	(0.61)	(0.19)
$Flow_{t-1}$	0.0412	0.0508	0.0140	−0.0426	−0.0459	−0.1735
	(0.31)	(0.37)	(0.11)	(−0.14)	(−0.16)	(−0.59)
$Expense_{t-1}$	1.2851	1.5328	1.5081	−2.8118	−2.7564	−3.6602
	(0.71)	(0.81)	(0.82)	(−0.78)	(−0.74)	(−1.00)
Age_{t-1}	0.0069	0.0072	0.0074	0.0057	0.0052	0.0069
	(1.72)	(1.70)	(1.68)	(0.83)	(0.72)	(0.90)
$FamilySize_{t-1}$	0.0045*	0.0046*	0.0039	−0.0007	−0.0005	−0.0016
	(1.81)	(1.80)	(1.53)	(−0.12)	(−0.07)	(−0.24)
$Tenure_{t-1}$	−0.0215**	−0.0227**	−0.0235***	0.0030	0.0025	0.0050
	(−2.84)	(−2.78)	(−3.00)	(0.12)	(0.10)	(0.22)
CFA_{t-1}	0.0064	0.0060	0.0053	0.0123	0.0082	0.0074
	(1.25)	(1.14)	(1.04)	(1.03)	(0.60)	(0.57)
MBA_{t-1}	−0.0034	−0.0036	−0.0042	0.0111	0.0152	0.0175
	(−0.63)	(−0.66)	(−0.78)	(0.91)	(1.20)	(1.35)
Ivy_{t-1}	0.0188**	0.0184**	0.0182**	0.0040	−0.0005	−0.0032
	(2.25)	(2.19)	(2.10)	(0.23)	(−0.03)	(−0.19)
Constant	0.1287***	0.1277***	0.1338***	0.1232**	0.1280**	0.1324**
	(4.30)	(4.13)	(4.61)	(2.27)	(2.32)	(2.26)
Observations	6,473	6,361	6,164	1,392	1,367	1,319
R-squared	0.100	0.101	0.103	0.268	0.267	0.263
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes

Table 5. Selection within style

This table reports the regressions of female appointments on the past within-style ranking. ID-based female appointment is an indicator constructed by comparing managers' names over time and it is estimated on the Appointment-only sample. Female-replace-male appointment is an indicator of the female appointments in which a former male manager was replaced, and is estimated on the male-departure sample only. The past ranking is the within-style quintile, estimated based on the fund's performance within investment style. The past 3-, 6- and 12-month rankings are calculated by the average of the within-style quintile in the past. MTNA is monthly total net assets under management, measured in trillions of U.S. dollars. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1 + Rret_t)]/MTNA_{t-1}$. MRET is monthly gross return, in percent. Age is the number of months since fund initiation. Tenure is the industry experience in number of years of the fund's managers. Expense is the fund's annual expense ratio. FamilySize is the natural log of total asset under management in billion U.S. dollars for the fund family to which the equity fund belongs. CFA, MBA, Ivy is the number of female managers who hold a CFA certificate, an MBA degree, and had education from an Ivy league institution. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

	Dependent Variable					
	ID-based Female Appt.			Female-replace-male Appt.		
	(1)	(2)	(3)	(4)	(5)	(6)
Past 3m ranking	−0.0129**			−0.0524***		
	(−2.12)			(−4.77)		
Past 6m ranking		−0.0220***			−0.0533***	
		(−3.00)			(−3.10)	
Past 12m ranking			−0.0270**			−0.0862***
			(−2.67)			(−3.55)
$MTNA_{t-1}$	−0.6891	−0.5963	−0.4870	−1.2234	−1.3476*	−1.2603*
	(−1.68)	(−1.43)	(−1.09)	(−1.58)	(−1.81)	(−1.75)
$MRET_{t-1}$	−0.4024*	−0.3700*	−0.4803**	0.6432	0.3490	0.2375
	(−2.07)	(−1.76)	(−2.36)	(1.34)	(0.74)	(0.52)
$Flow_{t-1}$	0.0453	0.0641	0.0511	0.0221	−0.0047	−0.0217
	(0.33)	(0.47)	(0.38)	(0.07)	(−0.02)	(−0.07)
$Expense_{t-1}$	1.1994	1.4922	1.6368	−2.7161	−2.7513	−3.0790
	(0.67)	(0.80)	(0.88)	(−0.76)	(−0.75)	(−0.83)
Age_{t-1}	0.0069	0.0069	0.0065	0.0065	0.0054	0.0068
	(1.70)	(1.60)	(1.45)	(0.93)	(0.74)	(0.92)
$FamilySize_{t-1}$	0.0044*	0.0044*	0.0042	−0.0011	−0.0004	−0.0008
	(1.73)	(1.77)	(1.66)	(−0.19)	(−0.06)	(−0.13)
$Tenure_{t-1}$	−0.0215***	−0.0218**	−0.0217**	−0.0004	0.0019	0.0032
	(−2.88)	(−2.76)	(−2.85)	(−0.02)	(0.08)	(0.14)
CFA_{t-1}	0.0066	0.0063	0.0054	0.0114	0.0075	0.0071
	(1.29)	(1.17)	(1.08)	(0.95)	(0.55)	(0.55)
MBA_{t-1}	−0.0037	−0.0038	−0.0042	0.0114	0.0150	0.0188
	(−0.67)	(−0.70)	(−0.78)	(0.92)	(1.17)	(1.48)
Ivy_{t-1}	0.0186**	0.0181**	0.0177*	0.0039	0.0003	−0.0025
	(2.24)	(2.18)	(2.06)	(0.23)	(0.02)	(−0.15)
Constant	0.1686***	0.1941***	0.2108***	0.2823***	0.2875***	0.3794***
	(4.63)	(5.16)	(4.82)	(5.63)	(4.32)	(4.55)
Observations	6,465	6,370	6,206	1,392	1,370	1,328
R-squared	0.102	0.102	0.103	0.283	0.279	0.274
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes

Table 6. Heckman Selection Model

This table reports Heckman selection model estimates of fund manager appointment and replacement. ID-based female appointment is an indicator constructed by comparing managers' names over time, Female-replace-male appointment is an indicator of the female appointments in which a former male manager was replaced, and MaleReplacement is an indicator of manager replacements in which a male successor was appointed. Panel A presents the outcome equations in which Past 6m alpha is calculated by the average of the Carhart alpha in the past 6 months, and Past 6m ranking is the within-style quintile, estimated based on the fund's performance within investment style, calculated by the average of the within-style quintile in the past 6 months. Panel B reports the selection equations. Columns (1)-(4) use two exclusion instruments: $\#managers_{t-1}$ is the lagged number of managers in the fund, and $Tenure^{appt}$ is the number of months since the fund's last manager appointment. Columns (5)-(6) instead use $Mean(TenureMale)$ and $Max(TenureMale)$, the mean and maximum industry tenure of male managers, as exclusion instruments. Past 6m alpha and Past 6m ranking are also included as controls in the selection equation. All columns include the same set of controls from the baseline results in Table 4. Panel C shows diagnostic statistics of the Heckman model: athrho is the parameter directly estimated by the model, capturing how correlated the unexplained parts of the outcome and selection equations are; it is unbounded, which makes it easier to estimate numerically. Rho, the standardized correlation bounded within $(-1, 1)$, is then derived from athrho. Category fixed effects, year fixed effects and controls are included throughout. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

	ID-based Female Appt.		Female-replace-male Appt.			
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Outcome equation						
Past 6m alpha	−5.427**		−11.700**		−12.3388**	
	(−2.04)		(−2.52)		(−2.02)	
Past 6m ranking		−0.056**		−0.214***		−0.2518**
		(−2.00)		(−3.87)		(−2.08)
Panel B. Selection equation						
Past 6m alpha	−3.380***		−3.380***		−4.9550***	
	(−5.02)		(−5.02)		(−3.76)	
Past 6m ranking		−0.056***		−0.056***		−0.0653***
		(−7.91)		(−7.91)		(−4.42)
Panel B.1. Exclusion instruments						
$\#managers_{t-1}$	0.083***	0.083***	0.083***	0.082***		
	(29.98)	(29.89)	(29.83)	(29.76)		
$Tenure^{appt}$	−0.002***	−0.002***	−0.002***	−0.002***		
	(−12.34)	(−12.52)	(−12.77)	(−12.93)		
$Mean(TenureMale)$					0.0000***	0.0000***
					(4.16)	(4.19)
$Max(TenureMale)$					0.0000***	0.0000***
					(4.00)	(3.99)
Panel C. Model diagnosis						
athrho	−0.231**	−0.229**	−0.066	−0.039	0.7710	0.7133
	(−2.05)	(−2.03)	(−0.29)	(−0.17)	(0.47)	(0.52)
Rho	−0.227	−0.225	−0.066	−0.039	0.648	0.613
Style FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	No	No
Observations (total)	375,006	375,871	375,006	375,871	375,006	375,871
Observations (appointments)	10,711	10,706	10,711	10,706	1,417	1,419

Table 7. Risk Loading

This table reports the regressions of the past risk loadings in the appointment-only sample. ID-based female appointment is an indicator constructed by comparing managers' names over time. The risk loading includes the market factor (MKT), the size factor (SMB), the value factor (HML), and the momentum factor (UMD). MTNA is monthly total net assets under management, measured in trillions of U.S. dollars. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1 + Rret_t)]/MTNA_{t-1}$. MRET is monthly gross return, in percent. Age is the number of months since fund initiation. Tenure is the industry experience in number of years of the fund's managers. Expense is the fund's annual expense ratio. FamilySize is the natural log of total asset under management in billion U.S. dollars for the fund family to which the equity fund belongs. CFA, MBA, and Ivy are the number of the fund's managers holding a CFA charter, an MBA, and an Ivy League degree, respectively. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

Dependent variable: ID-based female appointment					
	(1)	(2)	(3)	(4)	(5)
MKT_{t-1}	−1.2875				1.5801
	(−0.40)				(0.54)
SMB_{t-1}		1.6118**			2.3413
		(2.54)			(0.98)
HML_{t-1}			0.6792		−0.2842
			(1.58)		(−0.27)
UMD_{t-1}				−1.8491	−0.4261
				(−0.71)	(−0.17)
$MTNA_{t-1}$	−0.7016*	−0.6811	−0.6870	−0.6895	−0.6679
	(−1.75)	(−1.68)	(−1.69)	(−1.70)	(−1.64)
$MRET_{t-1}$	−54.1360***	−54.0595***	−54.1558***	−53.5793***	−53.6641***
	(−3.27)	(−3.30)	(−3.27)	(−3.25)	(−3.16)
$Flow_{t-1}$	0.0203	0.0234	0.0234	0.0249	0.0272
	(0.17)	(0.19)	(0.19)	(0.20)	(0.22)
$Expense_{t-1}$	1.5029	1.3577	1.4703	1.4946	1.3073
	(0.85)	(0.77)	(0.83)	(0.84)	(0.76)
Age_{t-1}	0.0068	0.0070*	0.0069*	0.0068	0.0070*
	(1.72)	(1.77)	(1.73)	(1.72)	(1.79)
$FamilySize_{t-1}$	0.0049*	0.0047*	0.0048*	0.0048*	0.0046*
	(1.98)	(1.89)	(1.89)	(1.91)	(1.89)
$Tenure_{t-1}$	−0.0224**	−0.0234***	−0.0230**	−0.0225**	−0.0233**
	(−2.75)	(−2.87)	(−2.77)	(−2.75)	(−2.84)
CFA_{t-1}	0.0063	0.0061	0.0062	0.0062	0.0061
	(1.21)	(1.19)	(1.20)	(1.20)	(1.16)
MBA_{t-1}	−0.0036	−0.0034	−0.0036	−0.0036	−0.0033
	(−0.67)	(−0.64)	(−0.67)	(−0.68)	(−0.62)
Ivy_{t-1}	0.0183**	0.0182**	0.0183**	0.0183**	0.0181**
	(2.22)	(2.20)	(2.21)	(2.20)	(2.20)
Constant	0.1410***	0.1271***	0.1292***	0.1291***	0.1105**
	(2.98)	(4.48)	(4.55)	(4.52)	(2.28)
Observations	6,552	6,552	6,552	6,552	6,552
R-squared	0.099	0.100	0.099	0.099	0.100
Category FE	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes

Table 8. Flow sensitivity

This table reports the regressions of flow sensitivity to performance. Flow Sensitivity is the coefficient of the regression of flows on lagged fund net returns over the past 36 months. Female is a dummy variable for the fund with female manager(s). The fund-level controls include lagged MTNA, MRET, flow, Expense, Age, FamilySize, Tenure, CFA, MBA, and Ivy. $LowPerf_{t-1} = \min(0.25, Rank_{t-1})$, $MidPerf_{t-1} = \min(0.5, Rank_{t-1} - LowPerf_{t-1})$, and $HighPerf_{t-1} = Rank_{t-1} - MidPerf_{t-1} - LowPerf_{t-1}$, where, *Rank*, which ranges between 0 and 1, is the fund's fractional performance rank estimated under the same investment objective within the same period. Two subsamples are constructed for analysis. Team indicates funds managed by a group of managers, while Single consists of funds with one single manager. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. *t*-statistics are reported in parentheses. ***, **, and * indicate *p*-values less than 1%, 5%, and 10%, respectively.

Dependent variable:	$Flow\ Sensitivity_{t+36}$			$Flow_t$		
	Panel		Fama-MacBeth	Full sample	Team	Single
	(1)	(2)	(3)	(4)	(5)	(6)
$Female_t$	−0.0165***	−0.0187***	−0.0251***			
	(−2.97)	(−2.90)	(−6.77)			
$HighPerf \times Female_{t-1}$				−0.0112***	−0.0123***	0.0071
				(−3.86)	(−3.29)	(0.93)
$MidPerf \times Female_{t-1}$				0.0005	0.0006	0.0017
				(0.51)	(0.47)	(0.53)
$LowPerf \times Female_{t-1}$				−0.0008	0.0018	−0.0126**
				(−0.21)	(0.42)	(−2.46)
$Female_{t-1}$				0.0001	−0.0002	0.0011
				(0.10)	(−0.24)	(0.89)
HighPerf				0.0238***	0.0221***	0.0251***
				(7.97)	(7.31)	(6.73)
MidPerf				0.0017**	0.0016*	0.0018*
				(2.72)	(2.01)	(2.01)
LowPerf				0.0071***	0.0067***	0.0084**
				(3.41)	(2.88)	(2.24)
Constant	0.0637***	0.0489**	0.3486***	−0.0002	0.0007	−0.0015
	(59.68)	(2.73)	(14.37)	(−0.17)	(0.52)	(−1.05)
Observations	355,785	304,063	304,063	383,645	257,526	126,117
R-squared	0.113	0.124	0.212	0.109	0.102	0.122
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	No	Yes	Yes	Yes
Clustered STD	Yes	Yes	No	Yes	Yes	Yes
Number of groups			336			
Newey-West STD	No	No	Yes	No	No	No

Table 9. Flow-Performance Sensitivity Around Manager Appointments

This table examines whether gender differences in flow-performance sensitivity predate, or arise after, manager appointments. Flow sensitivity is the slope from a monthly regression of fund flow on the one-month-lagged within-style performance quintile. Panel A regresses the indicated female-appointment measure on pre-appointment flow sensitivity. Panel B regresses post-appointment flow sensitivity on the indicated female-appointment measure. Panel C uses the change in sensitivity from the pre- to the post-appointment window as the dependent variable. Pre windows run from $t-24$ to $t-1$ or from $t-36$ to $t-1$; post windows run from $t+1$ to $t+24$ or from $t+1$ to $t+36$. ID-based female appointment identifies a manager newly observed at the fund; Female-replaces-male appointment additionally requires an observed male departure. All regressions include the standard fund controls, the trailing six-month within-style quintile, category fixed effects, and year-month fixed effects. Clustered t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable			
	ID-based female appointment		Female-replaces-male appointment	
	24 months	36 months	24 months	36 months
Panel A. Pre-appointment flow sensitivity and appointment gender				
Pre-appointment flow sensitivity	−0.0059	0.1837	0.5212	1.2688
	(−0.02)	(0.39)	(0.36)	(0.79)
Observations	10,114	9,737	1,286	1,230
R-squared	0.073	0.075	0.274	0.271
Panel B. Post-appointment flow sensitivity				
Female appointment	−0.0003	−0.0004***	−0.0014*	−0.0012**
	(−1.57)	(−3.36)	(−1.90)	(−2.19)
Observations	9,506	8,957	1,216	1,159
R-squared	0.124	0.138	0.356	0.429
Panel C. Change in flow sensitivity: post minus pre				
Female appointment	−0.0002	−0.0004**	−0.0020**	−0.0022**
	(−0.87)	(−2.11)	(−2.46)	(−2.28)
Observations	8,957	8,115	1,135	1,037
R-squared	0.051	0.061	0.238	0.256
Controls	Yes	Yes	Yes	Yes
Category FE	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes
Clustered standard errors	Yes	Yes	Yes	Yes

Table 10. Performance Persistence by Manager Gender

This table tests whether past performance is differentially informative about future performance for funds with female managers. Past performance is the average Carhart alpha or within-style performance quintile from $t-6$ through $t-1$. Future performance is measured over $t+1$ through $t+6$ or $t+7$ through $t+12$. Panel A uses the full fund-month panel with category and year-month fixed effects. Panel B adds fund fixed effects and reports the short-horizon matched-measure specifications. Has Female equals one when a fund has at least one female manager. All regressions include the standard lagged fund and manager controls. Clustered t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Horizon	Future Performance			
	$t+1$ through $t+6$		$t+7$ through $t+12$	
	Future alpha	Future rank	Future alpha	Future rank
	(1)	(2)	(3)	(4)
Panel A. Category and year-month fixed effects				
Past alpha	0.1194***		0.0801***	
	(7.91)		(5.95)	
Past rank		0.1257***		0.0991***
		(14.28)		(12.13)
Has Female	−0.0003***	−0.0240***	−0.0003***	−0.0255***
	(−4.45)	(−3.51)	(−3.80)	(−3.33)
Past alpha × Has Female	−0.0066		−0.0101	
	(−0.53)		(−0.69)	
Past rank × Has Female		0.0075		0.0132
		(0.53)		(1.54)
Observations	358,167	356,938	341,090	342,908
R-squared	0.082	0.020	0.075	0.014
Category FE	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes
Fund FE	No	No	No	No
Panel B. Fund fixed-effects robustness: $t+1$ through $t+6$				
Past alpha	0.0674***			
	(5.00)			
Past rank		0.0614***		
		(7.87)		
Has Female	−0.0004***	−0.0470		
	(−3.84)	(−1.00)		
Past alpha × Has Female	−0.0050			
	(−0.37)			
Past rank × Has Female		0.0059		
		(0.40)		
Observations	358,154	356,931		
R-squared	0.132	0.083		
Category FE	No	No		
Year-Month FE	Yes	Yes		
Fund FE	Yes	Yes		

Table 11. Unconditional performance dynamics

This table reports the unconditional performance dynamics based on manager's tenure in the current fund. Female is a dummy variable for the fund with female-only manager(s). Female max tenure is the maximum tenure among female managers. Max tenure (F−M) is the female-max minus male-max tenure. Female mean tenure is the mean tenure among female managers. Mean tenure (F−M) is the female-mean minus male-mean tenure. Max tenure is the gender-blind team-max tenure: the largest number of years of experience among the acting managers. Mean tenure is the fund's gender-blind mean manager tenure. All the tenure measures are in the current fund. MTNA is monthly total net asset under management. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1 + Rret_t)]/MTNA_{t-1}$. MRET is monthly gross return. Age is the number of months since fund initiation. Expense is the fund's annual expense ratio. FamilySize is the natural log of total asset under management for the fund family to which the equity fund belongs. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

Dependent variable	Carhart alpha						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female	−2.6730***	−2.6875***	−4.0434***	−3.5175***	−2.5830***	−3.9275***	−3.5077***
	(−3.52)	(−3.56)	(−3.75)	(−3.41)	(−3.46)	(−3.51)	(−3.39)
Female max tenure			0.2404**				
			(2.10)				
Max tenure (F−M)				0.1131			
				(1.53)			
Female mean tenure						0.2473*	
						(1.97)	
Mean tenure (F−M)							0.1483*
							(1.74)
Max tenure		0.0777	0.0540	0.1770**			
		(1.28)	(0.83)	(2.26)			
Mean tenure					0.1162	0.0862	0.2434**
					(1.26)	(0.88)	(2.24)
$MTNA_{t-1}$	0.0347	0.0211	0.0173	0.0201	0.0240	0.0207	0.0235
	(0.67)	(0.42)	(0.35)	(0.40)	(0.47)	(0.41)	(0.46)
$MRET_{t-1}$	1.5111	1.5108	1.5104	1.5105	1.5107	1.5103	1.5103
	(1.52)	(1.52)	(1.52)	(1.52)	(1.52)	(1.52)	(1.52)
$Flow_{t-1}$	0.0055***	0.0055***	0.0055***	0.0055***	0.0055***	0.0055***	0.0055***
	(2.91)	(2.91)	(2.91)	(2.91)	(2.90)	(2.90)	(2.90)
$Expense_{t-1}$	−0.0918***	−0.0917***	−0.0918***	−0.0919***	−0.0918***	−0.0919***	−0.0921***
	(−6.84)	(−6.81)	(−6.83)	(−6.82)	(−6.83)	(−6.84)	(−6.84)
Age_{t-1}	−0.0031	−0.0036	−0.0035	−0.0035	−0.0036	−0.0035	−0.0035
	(−1.27)	(−1.54)	(−1.47)	(−1.50)	(−1.50)	(−1.44)	(−1.46)
$FamilySize_{t-1}$	0.1847	0.2157	0.2112	0.2114	0.2255	0.2199	0.2191
	(1.03)	(1.23)	(1.20)	(1.21)	(1.28)	(1.24)	(1.24)
Constant	0.6044	0.0497	0.2427	0.1779	−0.0879	0.1113	0.0719
	(0.38)	(0.03)	(0.14)	(0.10)	(−0.05)	(0.06)	(0.04)
Observations	447,028	447,028	447,028	447,028	447,028	447,028	447,028
R-squared	0.070	0.070	0.070	0.070	0.070	0.070	0.070
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 12. After-selection performance

This table reports the difference-in-differences regressions of performance following fund's appointments of new female managers. ID-based female appointment is an indicator constructed by comparing managers' names over time and it is estimated on the Appointment-only sample. Female-replace-male appointment is an indicator of the female appointments in which a former male manager was replaced, and is estimated on the male-departure sample only. The performance is measured by Carhart 4-factor alpha. Post indicates the 12-month period following a new manager appointment. Female indicates the appointment concerning female manager(s). All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

	Dependent variable: Carhart Alpha	
	ID-based Female Appt.	Female-replace-male Appt.
	(1)	(2)
Post × Female	−0.0158	−0.0178
	(−0.34)	(−0.16)
Post	−0.0275	−0.0304
	(−1.14)	(−1.31)
Female	0.0269	−0.0106
	(1.01)	(−0.14)
Constant	0.0023	−0.0010
	(0.02)	(−0.01)
Observations	37,886	28,886
R-squared	0.074	0.079
Category FE	Yes	Yes
Year-Month FE	Yes	Yes
Clustered STD	Yes	Yes

Internet Appendix to

"Gender Disparities in the Mutual Fund Industry: Investor Flows, Selection Bias, and Managerial Skill"

(not for publication)

Abstract

We present supplementary results not included in the main body of the paper.

A Model

Our model is a deliberately small extension of Berk and Green (2004). We retain its basic logic—investors direct capital toward alpha until decreasing returns eliminate it—and add only a fund family's manager-assignment decision, persistent differences in strategy profitability, and reduced-form gender wedges in either that decision or investor flows. The framework distinguishes four hypotheses: employer discrimination (E), a skill gap (S), investor discrimination through a flow-level penalty (I_δ), and investor discrimination through gendered flow-performance sensitivity (I_ϕ).

A.1 Setup

Funds and managers. A fund family operates N funds indexed by i. Fund i has assets under management q_i and a persistent profitability shock ε_i, with $1 + \varepsilon_i > 0$. A manager of gender $g \in \{M, F\}$ has skill a_g.[13] We parameterize a potential gender skill gap by $a_M = a$ and $a_F = a - \theta$, where $\theta \geq 0$. Gross-of-fee alpha is

$$\alpha_i = a_g(1 + \varepsilon_i) - cq_i, \tag{A.1}$$

where $c > 0$ captures decreasing returns to scale. The multiplicative term produces skill–strategy complementarity: $\partial^2\alpha/\partial a_g \partial\varepsilon = 1 > 0$.

Investors. Let $F_i = 1$ when fund i is female-managed and zero otherwise. Net investor flows satisfy

$$\frac{f_i}{q_i} = (\phi - \kappa F_i)\alpha_i - \delta(1 + \varepsilon_i)F_i, \tag{A.2}$$

or, in dollars,

$$f_i = q_i \left[(\phi - \kappa F_i)\alpha_i - \delta(1 + \varepsilon_i)F_i\right]. \tag{A.3}$$

Here $\phi > 0$, $0 \leq \kappa < \phi$, and $\delta \geq 0$. The parameter δ shifts the flow curve downward for a female-managed fund. The parameter κ flattens that curve: otherwise identical performance is translated less strongly into capital allocation under a female manager.

[13] To isolate the assignment effects of interest, we abstract from manager-level skill heterogeneity within gender. Such heterogeneity would introduce an additional assortative-matching margin beyond the scope of this deliberately parsimonious extension.

Fund families. The family earns fees proportional to AUM. At a vacancy, it compares the AUM implications of feasible manager assignments, taking the gender composition of its manager pool as given. A female assignment entails a potential perceived cost $d(1+\varepsilon_i)q_i^*$, where $d \geq 0$ and q_i^* is the fund's gender-blind steady-state size. The cost is active only when $d > 0$; its formulation makes it larger at more valuable strategies.

Four hypotheses. The encompassing equations define the following hypotheses:

- (E) **Employer discrimination:** $d > 0$, $a_F = a_M = a$, and $\delta = \kappa = 0$.
- (S) **Skill gap:** $\theta > 0$, and $d = \delta = \kappa = 0$. Female managers have lower skill by θ, while the family and investors are otherwise gender-blind.
- (I_δ) **Investor flow-level discrimination:** $\delta > 0$, $a_F = a_M = a$, and $d = \kappa = 0$. Managers are equally skilled, but investors impose a downward flow shift $\delta(1+\varepsilon_i)$ on a female-managed fund at any given alpha.
- (I_ϕ) **Gendered processing of performance:** $\kappa > 0$, $a_F = a_M = a$, and $d = \delta = 0$. Managers are equally skilled, but investors translate a female manager's observed performance into flows less strongly; Section A.4 discusses the interpretations of this reduced form.

We treat the four hypotheses as mutually exclusive, nested special cases of the encompassing specification for tractability. In practice, the underlying mechanisms could co-exist; combining them would be straightforward within the model's framework, and we leave that extension for future work.

A.2 Assignment and the Glass Cliff

All four hypotheses generate a Glass Cliff, although through different margins. To isolate the role of gendered flow sensitivity, define $\phi_M = \phi$ and $\phi_F = \phi - \kappa$. Holding the fund state (q_i, α_i) fixed at the appointment decision, the slope component of the male–female flow difference is

$$f_i^M - f_i^F = q_i \kappa \alpha_i. \tag{A.4}$$

This component is nonzero only under I_ϕ, where $\kappa > 0$. When $\alpha_i > 0$, appointing a woman sacrifices inflows, and that sacrifice grows with performance. When $\alpha_i < 0$, the expression is negative: the

flatter response attenuates redemptions. Thus a female appointment is most costly at a strong fund and least costly—potentially AUM-preserving in the short run—at a weak fund.

Because dollar flows scale with q_i, the unrestricted assignment index is $q_i\alpha_i$. Conditional on fund size, however, the ranking is exactly by alpha. This is the relevant comparison for the Glass Cliff tests, which ask whether trailing performance predicts a female appointment after controlling for size and other fund characteristics.

The other hypotheses generate sorting through different channels. Under I_δ, the current dollar flow cost of a female assignment is $q_i\delta(1+\varepsilon_i)$, a downward shift of the flow curve that is more costly at better strategies. Under S, gender-blind flows drive alpha to zero, and the steady-state AUM loss from assigning the lower-skill manager is $\theta(1+\varepsilon_i)/c$. Under E, the perceived employer cost is

$$d(1+\varepsilon_i)q_i^* = \frac{da}{c}(1+\varepsilon_i)^2,$$

which is increasing in ε_i.

Proposition 1 (Glass Cliff)**.** *Each hypothesis produces a Glass Cliff, but through a distinct margin.*

1. *Under I_ϕ, holding current size fixed, the family prefers a female appointment at the lower-alpha fund. More generally, it ranks vacancies by the flow-loss index $q_i\alpha_i$.*
2. *Under I_δ, the female-assignment flow cost is increasing in strategy quality and fund scale.*
3. *Under S, the steady-state AUM loss from the skill gap is increasing in ε_i.*
4. *Under E, the perceived employer cost is increasing in ε_i.*

The proposition explains why the Glass Cliff alone does not identify its source. Its sharper content under I_ϕ is that the family protects high-alpha funds from the loss of performance-sensitive inflows and uses the flatter response at weak funds as a redemption buffer.

A.3 Steady-state alpha

For a positive-size fund, setting flows to zero in equation (A.2) gives

$$\alpha_i^* = \frac{\delta(1+\varepsilon_i)F_i}{\phi - \kappa F_i}. \tag{A.5}$$

Combining this condition with equation (A.1) yields

$$q_i^* = \frac{1+\varepsilon_i}{c}\left(a_g - \frac{\delta F_i}{\phi - \kappa F_i}\right). \tag{A.6}$$

Proposition 2 (Steady-state implications)**.** *In the four cases:*

1. *Under E, S, and I_ϕ, $\alpha_F^* = \alpha_M^* = 0$.*
2. *Under I_δ, $\alpha_F^*(\varepsilon) = \delta(1+\varepsilon)/\phi > 0 = \alpha_M^*$.*
3. *Under I_ϕ, $q_F^*(\varepsilon) = q_M^*(\varepsilon) = a(1+\varepsilon)/c$. Gendered sensitivity changes assignment and adjustment speed, not the long-run Berk–Green target.*

Under I_ϕ, therefore, the model does not generate a positive female steady-state alpha. Nor does it generate a robust differential post-appointment alpha path. Starting from the same (q_0, ε), male and female managers have the same alpha at appointment. Thereafter, the female-managed fund converges more slowly because $\phi_F < \phi_M$. If the inherited fund is oversized and alpha is negative, slower redemptions keep female-managed alpha lower for longer; if it is undersized and alpha is positive, slower inflows keep female-managed alpha higher for longer. Both paths converge to zero (Appendix B.3).

A.4 Interpretation of gendered sensitivity

The parameter $\kappa > 0$ identifies gender-linked differential processing of performance. It does not, by itself, identify animus or a unique cognitive mechanism. It is consistent with discriminatory attribution or attention: investors may treat otherwise comparable female-manager performance as less diagnostic, attribute more of it to luck, or act on it less strongly. It is also consistent with a genuine difference in the informativeness of performance signals.

One possible foundation is that women have, or are perceived to have, a narrower distribution of latent ability. With a tighter prior, the same performance signal moves posterior expected skill less. Summers (2005) invoked a version of this "greater male variability" hypothesis when discussing upper-tail representation in science. The psychometric evidence is mixed and domain-specific. Large international educational assessments find greater male variability in reading, mathematics, and science (Baye and Monseur, 2016), whereas a recent meta-analysis of children's intelligence

tests finds greater male variability in some domains, greater female variability in another, and no difference in others (Giofrè et al., 2024). The model does not take a position on whether any such difference is real or perceived; these possibilities generate the same reduced-form κ.

A caveat about functional form: treating κ as constant over a manager's tenure is most faithful to the attribution/attention foundation, where the wedge reflects a durable feature of how investors process a female manager's performance. The narrower-prior foundation, taken literally, implies instead that κ should decline as the manager's own track record lengthens and the prior is dominated by accumulated evidence, eventually vanishing under standard Bayesian updating. The reduced-form model we take to the data holds κ fixed and is silent on this tenure profile; it should therefore be read as describing average behavior over the sample rather than as strictly agnostic between the two foundations. A tenure-varying $\kappa_i(t)$ is a natural extension once a sufficiently long post-appointment track record is available for testing.

Table 10 provides this test. Current performance strongly predicts future performance, but its predictive content does not differ significantly with manager gender. The flatter investor response is therefore not matched by a less informative female-manager signal. This evidence favors gender-linked differential processing over the genuine-signal-precision interpretation, although it cannot distinguish among biased inference, attention, or animus.

Finally, Glass Cliff assignments may themselves place women in more unsettled environments, making realized performance objectively noisier and amplifying the estimated slope difference. This is a plausible reinforcing feedback, but it cannot explain the initial gendered assignment without presupposing that assignment. The fundamental driver in I_ϕ remains the gender-linked flow response in equation (A.4); we do not introduce a multiple-equilibrium extension.

A.5 Unconditional performance

Proposition 3 (Selection and unconditional alpha)**.** *If female appointments occur disproportionately after adverse profitability shocks, and fund size adjusts gradually, female-managed fund-months can have lower unconditional alpha even when* $a_F = a_M$ *and* $\alpha_F^* = \alpha_M^* = 0$.

The result is an appointment-state composition effect. A fund that inherits size chosen under a better prior shock is temporarily oversized after profitability deteriorates, so equation (A.1) gives negative alpha until flows reduce q. Assigning women disproportionately to such funds loads the

female-managed sample on negative initial conditions. Under I_ϕ, the flatter response can prolong this adjustment, but the model does not claim a permanent conditional alpha gap or a uniform recovery path.

B Model Details and Proofs

The Berk–Green framework explains how performance-sensitive flows convert managerial skill into fund scale. We extend it to study gender differences in assignment and capital allocation by adding discrimination—in investor responses or the fund family's assignment objective—and persistent shocks to fund strategy profitability. Discrimination changes the value of assigning a woman to a fund, while persistent shocks create stronger and weaker fund states across which the family sorts managers.

B.1 The four assignment margins

This appendix derives Proposition 1. All four hypotheses generate a Glass Cliff, although through different margins. The family compares otherwise feasible assignments while taking the number of female managers as given.

Flow-sensitivity margin. Define $\phi_M = \phi$ and $\phi_F = \phi - \kappa$. At the instant of appointment, fund size and the profitability shock are predetermined. Holding alpha fixed, the slope component of the flow difference is

$$f_i^M - f_i^F = q_i \left[\phi\alpha_i - (\phi - \kappa)\alpha_i\right] = q_i\kappa\alpha_i.$$

This component matters under I_ϕ, where $\kappa > 0$ and managers are equally skilled. Under the other hypotheses, $\kappa = 0$. For two equally sized funds H and L, with $\alpha_H > \alpha_L$,

$$(f_H^M - f_H^F) - (f_L^M - f_L^F) = q\kappa(\alpha_H - \alpha_L) > 0.$$

The AUM cost of a female appointment is larger at the high-alpha fund. Hence the family assigns the woman to the low-alpha fund. With heterogeneous sizes, the exact index is $q_i\alpha_i$; conditional on size, the comparative static with respect to alpha is unchanged. If $\alpha_i < 0$, then $f_i^M - f_i^F < 0$, so the female appointment provides short-run redemption insulation.

Remark (static vs. dynamic assignment). The ranking above compares the flow consequence of the two candidate appointments at the instant of assignment, holding the resulting fund state fixed, rather than deriving the family's fully dynamic optimal assignment under discounted future flows. We conjecture, but do not formally show, that the ranking is unchanged once the dynamics of Appendix B.3 are taken into account: slower convergence under I_ϕ raises the cost of a female appointment at $\alpha_i > 0$ and lowers it at $\alpha_i < 0$, reinforcing rather than reversing the static index. We defer the formal dynamic derivation and would supply it if requested in review.

I_δ: flow-level discrimination. Under I_δ, $a_F = a_M = a$, $\kappa = 0$, and $\delta > 0$. Holding the fund state fixed,

$$f_i^M - f_i^F = q_i \delta (1 + \varepsilon_i) > 0.$$

The family minimizes the current flow cost by placing women where scale and strategy quality make the penalty smallest. The flow penalty is a level shift conditional on alpha even though the encompassing specification allows that shift to vary with the profitability shock.

S: skill gap. Under S, flows are gender-blind, $a_M = a$, and $a_F = a - \theta$. Setting flows to zero gives $\alpha_g^* = 0$ and

$$q_g^*(\varepsilon) = \frac{a_g(1+\varepsilon)}{c}.$$

The steady-state AUM loss from assigning a female rather than a male manager is

$$q_M^*(\varepsilon) - q_F^*(\varepsilon) = \frac{\theta(1+\varepsilon)}{c},$$

which is strictly increasing in ε. The family assigns the lower-skill manager to the weaker strategy.

E: employer discrimination. Under E, skill and investor behavior are gender-neutral, so $q_i^* = a(1+\varepsilon_i)/c$. The family perceives a female-assignment cost

$$d(1+\varepsilon_i) q_i^* = \frac{da}{c}(1+\varepsilon_i)^2,$$

which is strictly increasing in ε_i. It therefore assigns women to the weakest strategies. This is a perceived taste cost, not an implication of lower female productivity.

B.2 Steady-state derivation

For a positive-size fund, equation (A.2) equals zero if and only if

$$(\phi - \kappa F_i)\alpha_i^* = \delta(1+\varepsilon_i)F_i.$$

Because $\phi - \kappa F_i > 0$,

$$\alpha_i^* = \frac{\delta(1+\varepsilon_i)F_i}{\phi - \kappa F_i}. \tag{B.7}$$

Substitution into equation (A.1) gives

$$q_i^* = \frac{1+\varepsilon_i}{c}\left(a_g - \frac{\delta F_i}{\phi - \kappa F_i}\right). \tag{B.8}$$

The four cases follow immediately. Under I_ϕ, $\delta = 0$ and equal skill imply

$$\alpha_F^* = \alpha_M^* = 0, \qquad q_F^* = q_M^* = \frac{a(1+\varepsilon)}{c}.$$

Under I_δ, $\kappa = 0$ and

$$\alpha_F^* = \frac{\delta(1+\varepsilon)}{\phi} > 0 = \alpha_M^*, \qquad q_M^* - q_F^* = \frac{\delta(1+\varepsilon)}{\phi c} > 0.$$

Under S and E, investor flows are gender-blind and steady-state alpha is zero for both genders. Under S, skill is capitalized into size; under E, the perceived employer cost affects assignment but not the investor-flow steady state.

B.3 Adjustment dynamics under gendered sensitivity

Let fund size evolve with net investor flows, $dq/dt = f$. Under I_ϕ, for gender g with $\phi_g \in \{\phi, \phi - \kappa\}$,

$$\frac{dq_g}{dt} = q_g \phi_g \left[a(1+\varepsilon) - c q_g\right]. \tag{B.9}$$

The positive steady state is common across genders:

$$q^*(\varepsilon) = \frac{a(1+\varepsilon)}{c}, \qquad \alpha^* = 0.$$

Equation (B.9) is logistic. Starting from $q_0 > 0$, its solution is

$$q_g(t) = \frac{q^*(\varepsilon)}{1 + \left(\frac{q^*(\varepsilon)}{q_0} - 1\right) e^{-\mu_g(\varepsilon)t}}, \qquad \mu_g(\varepsilon) = \phi_g a(1+\varepsilon). \tag{B.10}$$

Since $\phi_F < \phi_M$, $\mu_F(\varepsilon) < \mu_M(\varepsilon)$. Female-managed fund size converges more slowly to the same target.

This slower adjustment has no uniform signed implication for the post-appointment alpha gap. If an adverse shock leaves the inherited fund oversized, $q_0 > q^*$ and $\alpha(0) < 0$. Male-sensitive flows then shrink the fund faster, so for $t > 0$ the female-managed counterfactual remains larger and has lower alpha until both converge to zero. If the inherited fund is undersized, $q_0 < q^*$ and $\alpha(0) > 0$, male-sensitive flows expand it faster, so the female-managed counterfactual retains higher alpha for longer. Thus I_ϕ predicts equal alpha at the appointment instant and a common zero-alpha limit, but not a robust average differential path between them.

B.4 Selection and unconditional alpha

Suppose a fund was near the gender-blind steady state under profitability shock ε_0:

$$q_0 \simeq \frac{a(1+\varepsilon_0)}{c}.$$

After an adverse shock $\varepsilon < \varepsilon_0$, but before size adjusts,

$$\alpha(0) = a(1+\varepsilon) - cq_0 \simeq a(\varepsilon - \varepsilon_0) < 0. \tag{B.11}$$

If women are disproportionately appointed in these states, female-managed observations are disproportionately drawn from the negative-alpha portion of the adjustment path. This composition effect can lower unconditional female alpha even though manager skill and steady-state alpha are equal. Under I_ϕ, the lower sensitivity slows the adjustment described in Appendix B.3; it can amplify the duration of negative alpha after an adverse shock, but it is not a permanent wedge.

B.5 Small bias and reinforcing noise

The reduced form $\phi_F < \phi_M$ can arise either because investors process the same signal differently or because the signal is genuinely less informative. The model does not distinguish these foundations. A direct test would compare the predictive content of current performance for future risk-adjusted outcomes across manager gender, using a design that separates manager gender from the fund states into which managers are assigned.

An important implication is that a large Glass Cliff need not require a large primitive bias. Assignment is discrete: for any $\kappa > 0$, equation (A.4) strictly ranks vacancies by the flow-loss index $q_i\alpha_i$. Absent offsetting assignment frictions, even a small difference in flow sensitivity can therefore tip the woman toward the weaker fund. Moreover, the dollar wedge is $q_i\kappa\alpha_i$, so fund scale can turn a small κ into a meaningful difference in AUM.

Glass Cliff assignment can then magnify the initial wedge. Weak funds may be unusually unsettled, so performance can become objectively noisier after women are assigned to them. Rational investors would respond less to a noisier signal, widening the effective sensitivity gap and reinforcing the sorting that the initial bias produced. This feedback cannot generate the first female assignment: before gender changes, the fund's pre-appointment sensitivity does not predict a female appointment in the data. It is therefore a multiplier, not the primitive source of the Glass Cliff. The broader lesson is that economically large assignment and capital-allocation effects need not imply an economically large initial bias.

Figure A.1. Flow-performance relation by gender

This figure shows the unconditional performance between funds with and without female manager(s). The dark (light) gray bars present the alphas of funds with (without) female manager(s). The alphas are obtained from Fama-French 3-factor and Carhart 4-factor models in the left and right groups, respectively.

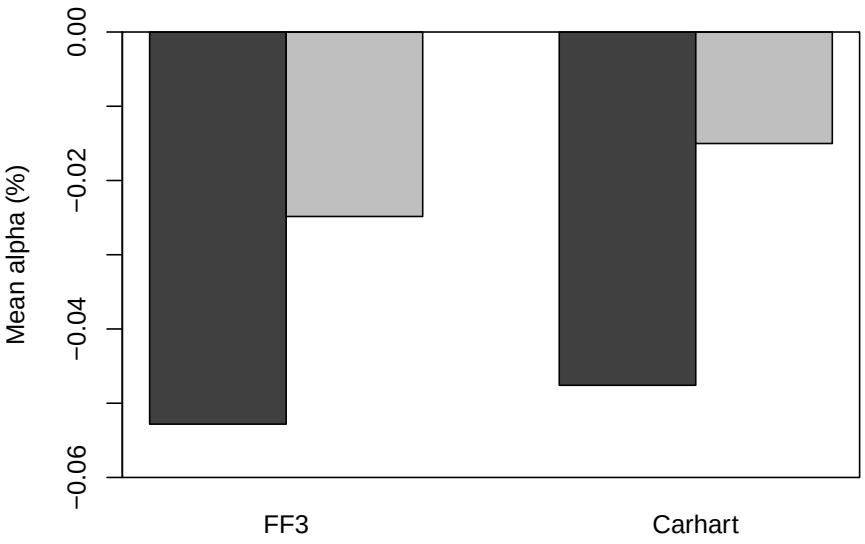


Table A.1. Risk Loading: Female-replace-male subsample

This table reports the regressions of the past risk loadings. The dependent variable is an indicator of female manager appointment where a former male manager is replaced. The sample is restricted to the appointments associated with departure of male managers. The risk loading includes the market factor (MKT), the size factor (SMB), the value factor (HML), and the momentum factor (UMD). MTNA is monthly total net asset under management. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1+Rret_t)]/MTNA_{t-1}$. MRET is monthly gross return. Age is the number of months since fund initiation. Tenure is the industry experience in number of years of the fund's managers. Expense is the fund's annual expense ratio. FamilySize is the natural log of total asset under management for the fund family to which the equity fund belongs. CFA, MBA, and Ivy are the number of the fund's managers holding a CFA charter, an MBA, and an Ivy League degree, respectively. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

Dependent variable: Female-replace-male Appointment					
	(1)	(2)	(3)	(4)	(5)
MKT_{t-1}	16.3538***				14.9526***
	(3.30)				(3.14)
SMB_{t-1}		5.3369			4.5335
		(1.04)			(0.92)
HML_{t-1}			−6.5551**		−5.9771**
			(−2.40)		(−2.14)
UMD_{t-1}				5.4989	4.1446
				(0.99)	(0.77)
$MTNA_{t-1}$	−1.4294*	−1.5178**	−1.5793**	−1.5476**	−1.4561*
	(−1.95)	(−2.12)	(−2.28)	(−2.15)	(−2.03)
$MRET_{t-1}$	27.9520	21.7281	32.0499	26.2850	30.5032
	(0.56)	(0.44)	(0.65)	(0.53)	(0.58)
$Flow_{t-1}$	−0.1014	−0.1331	−0.1231	−0.1456	−0.1106
	(−0.34)	(−0.45)	(−0.42)	(−0.49)	(−0.38)
$Expense_{t-1}$	−2.3518	−2.7249	−2.9302	−2.6207	−2.6413
	(−0.69)	(−0.81)	(−0.89)	(−0.78)	(−0.75)
Age_{t-1}	0.0044	0.0055	0.0047	0.0053	0.0048
	(0.63)	(0.78)	(0.67)	(0.75)	(0.69)
$FamilySize_{t-1}$	−0.0018	−0.0006	−0.0015	−0.0005	−0.0022
	(−0.29)	(−0.10)	(−0.25)	(−0.08)	(−0.37)
$Tenure_{t-1}$	0.0032	0.0036	0.0037	0.0055	0.0011
	(0.13)	(0.14)	(0.14)	(0.21)	(0.05)
CFA_{t-1}	0.0125	0.0128	0.0129	0.0128	0.0119
	(1.11)	(1.15)	(1.18)	(1.17)	(1.07)
MBA_{t-1}	0.0133	0.0138	0.0139	0.0136	0.0152
	(1.14)	(1.18)	(1.20)	(1.17)	(1.32)
Ivy_{t-1}	0.0027	0.0013	0.0008	0.0015	0.0013
	(0.16)	(0.08)	(0.05)	(0.09)	(0.07)
Constant	−0.0376	0.1144**	0.1321**	0.1219**	−0.0294
	(−0.48)	(2.38)	(2.69)	(2.33)	(−0.40)
Observations	1,407	1,407	1,407	1,407	1,407
R-squared	0.275	0.272	0.273	0.271	0.278
Category FE	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes

Table A.2. Liquidity Risk

This table reports the regressions of liquidity risk measures following fund's appointments of female managers. Appointed Female is an indicator of positive change of female percentage in a fund. MTNA is monthly total net asset under management. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1+Rret_t)]/MTNA_{t-1}$. MRET is monthly gross return. Age is the number of months since find initiation. Tenure is the industry experience in number of years of the fund's managers. Expense is the fund's annual expense ratio. FamilySize is the natural log of total asset under management for the fund family to which the equity fund belongs.CFA, MBA, Ivy is the number of female managers who hold a CFA certificate, an MBA degree, and had education from an Ivy league institution. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 1%, 5%, and 10%, respectively.

	Dependent variable: Liquidity risk measures					
	Equity	AR1	Turnover	Equity	AR1	Turnover
	(1)	(2)	(3)	(4)	(5)	(6)
AppointFemale	0.0283	−1.5581	−0.6188	0.0465	−1.6832	−0.0683
	(0.20)	(−1.02)	(−0.40)	(0.39)	(−1.02)	(−0.04)
$MTNA_{t-1}$	−6.5909**	−7.0101*	−28.2469	−5.1578	−8.8344**	−37.8305
	(−2.35)	(−2.07)	(−1.06)	(−1.70)	(−2.37)	(−1.48)
$MRET_{t-1}$	0.0273***	−0.0714	−0.2149	0.0236**	−0.0926*	−0.1375
	(3.04)	(−1.68)	(−1.53)	(2.57)	(−1.99)	(−1.03)
$Flow_{t-1}$	0.0285***	−0.0193	−0.0555	0.0286***	−0.0125	−0.0517
	(5.80)	(−1.25)	(−0.52)	(5.15)	(−0.90)	(−0.38)
$Expense_{t-1}$	0.1357	−0.6597*	−1.4636	0.0132	−0.7579*	−2.5309***
	(1.18)	(−2.06)	(−1.54)	(0.11)	(−2.07)	(−3.03)
Age_{t-1}	0.0204	0.0277	0.4837***	0.0141	0.0296	0.4275**
	(0.88)	(1.38)	(3.33)	(0.59)	(1.23)	(2.39)
$FamilySize_{t-1}$	−0.0274	0.0136	−0.0298	−0.0420	0.0167	−0.0441
	(−1.13)	(0.31)	(−0.25)	(−1.60)	(0.33)	(−0.30)
$Tenure_{t-1}$	−0.0906	−0.2448	1.3540**	−0.0631	−0.2743	1.5645**
	(−1.68)	(−1.24)	(2.19)	(−0.85)	(−1.22)	(2.51)
CFA_{t-1}				−0.0001	−0.0100	−0.8899*
				(−0.01)	(−0.26)	(−2.03)
MBA_{t-1}				−0.0176	0.0316	0.7763**
				(−0.66)	(0.77)	(2.22)
Ivy_{t-1}				−0.0094	0.0043	−0.3442
				(−0.28)	(0.11)	(−1.23)
Constant	−0.2572	0.8205	−1.6680	−0.0908	0.9352	−1.2609
	(−1.45)	(1.61)	(−1.28)	(−0.42)	(1.67)	(−1.11)
Observations	416,825	332,472	119,506	358,682	297,858	97,842
R-squared	0.111	0.005	0.010	0.108	0.005	0.012
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes

Table A.3. Selection with Beta Controls

This table reports the regressions of female appointments on trailing past performance, with lagged Carhart factor loadings (MKT, SMB, HML, UMD) added to the control set. ID-based female appointment is an indicator constructed by comparing managers' names over time and it is estimated on the Appointment-only sample. Female-replace-male appointment is an indicator of the female appointments in which a former male manager was replaced, and is estimated on the male-departure sample only. The past 3-, 6- and 9-month performance is calculated by the average of the Carhart alpha in the past. Same set of controls from Table 4 is included. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 0.1%, 1%, and 5%, respectively.

	Dependent Variable					
	ID-based Female Appt.			Female-replace-male Appt.		
	(1)	(2)	(3)	(4)	(5)	(6)
Past 3m alpha	−0.5138			−2.3223*		
	(−0.96)			(−2.23)		
Past 6m alpha		−1.2157			−1.9754	
		(−1.93)			(−1.15)	
Past 9m alpha			−1.8828*			−3.3052
			(−2.84)			(−1.73)
MKT_{t-1}	1.3595	1.0085	−0.1188	13.8634**	14.4237**	13.9272*
	(0.50)	(0.39)	(−0.05)	(3.11)	(2.95)	(2.50)
SMB_{t-1}	2.4490	2.8255	2.9786	5.4254	5.8567	6.9806
	(1.06)	(1.22)	(1.34)	(1.12)	(1.20)	(1.41)
HML_{t-1}	−0.2512	−0.4186	−0.5765	−5.1464	−5.1249	−5.8251
	(−0.26)	(−0.42)	(−0.59)	(−1.86)	(−1.81)	(−1.81)
UMD_{t-1}	0.2344	0.6880	1.1718	3.9386	4.3502	3.5938
	(0.09)	(0.27)	(0.48)	(0.77)	(0.87)	(0.69)
Constant	0.1135*	0.1152*	0.1282*	−0.0200	−0.0205	−0.0058
	(2.30)	(2.32)	(2.75)	(−0.26)	(−0.26)	(−0.07)
Observations	6,473	6,361	6,272	1,392	1,367	1,341
R-squared	0.101	0.102	0.102	0.274	0.274	0.269
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.4. Selection within style with Beta Controls

This table reports the regressions of female appointments on the past within-style ranking, with lagged Carhart factor loadings (MKT, SMB, HML, UMD) added to the control set. ID-based female appointment is an indicator constructed by comparing managers' names over time and it is estimated on the Appointment-only sample. Female-replace-male appointment is an indicator of the female appointments in which a former male manager was replaced, and is estimated on the male-departure sample only. The past ranking is the within-style quintile, estimated based on the fund's performance within investment style. The past 3-, 6- and 9-month rankings are calculated by the average of the within-style quintile in the past. Same set of controls from Table 4 is included. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 0.1%, 1%, and 5%, respectively.

	Dependent Variable					
	ID-based Female Appt.			Female-replace-male Appt.		
	(1)	(2)	(3)	(4)	(5)	(6)
Past 3m ranking	−0.0120			−0.0480***		
	(−1.92)			(−4.02)		
Past 6m ranking		−0.0213*			−0.0476*	
		(−2.79)			(−2.66)	
Past 9m ranking			−0.0299**			−0.0658**
			(−3.33)			(−3.29)
MKT_{t-1}	1.3620	0.7819	−0.3892	11.8059*	12.0879*	11.1996
	(0.48)	(0.29)	(−0.15)	(2.36)	(2.17)	(1.87)
SMB_{t-1}	2.5466	2.6431	2.7715	4.9436	5.6677	6.9926
	(1.09)	(1.12)	(1.22)	(1.03)	(1.17)	(1.38)
HML_{t-1}	−0.2967	−0.3659	−0.5309	−5.0697	−5.3738	−6.1186
	(−0.29)	(−0.35)	(−0.54)	(−1.87)	(−1.90)	(−1.94)
UMD_{t-1}	0.3150	0.6617	1.0576	3.8484	3.9741	3.7488
	(0.12)	(0.26)	(0.44)	(0.77)	(0.80)	(0.75)
Constant	0.1504*	0.1820**	0.2201**	0.1469	0.1451	0.2092
	(2.61)	(3.04)	(3.69)	(1.68)	(1.35)	(1.85)
Observations	6,465	6,370	6,292	1,392	1,370	1,347
R-squared	0.102	0.103	0.104	0.288	0.285	0.274
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table A.5. After-selection flow: Performance Partition Heterogeneity

This table reports difference-in-differences regressions of post-appointment monthly flow on Female-replace-male appointment, an indicator of the female appointments in which a former male manager was replaced. Post indicates the 12-month period following a new manager appointment. Columns (1)-(3) partition the sample by the mean within-style quintile; columns (4)-(6) partition by the average Morningstar star rating. Both partition criteria are calculated during 1 year prior to the appointment. Within each partition, Full uses the whole sample, Bad restricts to the under-performance (bottom 33%) funds, and Good restricts to the well-performing (top 33%) funds. $MTNA_{t-1}$ is monthly total net assets under management, measured in trillions of U.S. dollars. Monthly Flow is calculated as $[MTNA_t - MTNA_{t-1} \times (1+Rret_t)]/MTNA_{t-1}$. $MRET_{t-1}$ is monthly gross return, in percent. Age_{t-1} is the number of months since fund initiation. $Tenure_{t-1}$ is the industry experience in number of years of the fund's managers. $Expense_{t-1}$ is the fund's annual expense ratio. $FamilySize_{t-1}$ is the natural log of total asset under management in billion U.S. dollars for the fund family to which the equity fund belongs. CFA_{t-1}, MBA_{t-1}, and Ivy_{t-1} are the number of the fund's managers holding a CFA charter, an MBA, and an Ivy League degree, respectively. All regressions incorporate year-month and category fixed effects, and standard errors are clustered at both the category and year-month level. t-statistics are reported in parentheses. ***, **, and * indicate p-values less than 0.1%, 1%, and 5%, respectively.

Partition criterion	Quintile			Star		
	(1)	(2)	(3)	(4)	(5)	(6)
Fund performance	Full	Bad	Good	Full	Bad	Good
Post	−0.0003	0.0022	−0.0043*	−0.0003	0.0011	−0.0010
	(−0.52)	(1.88)	(−2.41)	(−0.53)	(1.23)	(−1.15)
Female	0.0000	0.0032	−0.0103*	0.0000	−0.0024	0.0005
	(0.02)	(1.18)	(−2.24)	(0.01)	(−0.79)	(0.09)
Post × Female	−0.0007	−0.0098**	0.0107	−0.0007	0.0050	−0.0071
	(−0.25)	(−2.86)	(1.45)	(−0.25)	(1.12)	(−1.25)
$MTNA_{t-1}$	0.0118	−0.0992	0.0016	0.0120	0.0091	0.0036
	(0.86)	(−1.18)	(0.02)	(0.87)	(0.17)	(0.16)
$MRET_{t-1}$	0.1931**	0.1972*	0.2788**	0.1937**	0.1416***	0.2213**
	(3.66)	(2.72)	(3.22)	(3.67)	(4.51)	(3.65)
$Flow_{t-1}$	0.2281***	0.1396*	0.3058***	0.2287***	0.2092***	0.2264***
	(8.49)	(2.79)	(5.91)	(8.54)	(6.62)	(9.28)
$Expense_{t-1}$	−0.3559**	−0.1019	0.0414	−0.3525**	−0.3933*	−0.4863*
	(−3.33)	(−0.44)	(0.10)	(−3.31)	(−2.26)	(−2.83)
Age_{t-1}	−0.0006	0.0005	−0.0008	−0.0006	−0.0001	−0.0001
	(−1.72)	(1.03)	(−1.82)	(−1.73)	(−0.23)	(−0.18)
$FamilySize_{t-1}$	0.0006**	0.0004	0.0006	0.0006**	0.0003	0.0011**
	(3.04)	(0.94)	(1.26)	(3.05)	(1.15)	(3.17)
$Tenure_{t-1}$	−0.0016	−0.0020	−0.0021	−0.0016	0.0002	−0.0017
	(−1.74)	(−0.99)	(−1.00)	(−1.74)	(0.15)	(−0.83)
CFA_{t-1}	0.0002	0.0006	−0.0002	0.0002	0.0002	−0.0002
	(0.99)	(0.94)	(−0.31)	(1.00)	(0.29)	(−0.36)
MBA_{t-1}	0.0003	−0.0000	0.0000	0.0003	0.0008	0.0002
	(0.59)	(−0.03)	(0.05)	(0.60)	(1.06)	(0.31)
Ivy_{t-1}	−0.0003	0.0003	−0.0008	−0.0003	−0.0024**	−0.0010
	(−0.46)	(0.21)	(−0.95)	(−0.46)	(−3.15)	(−1.01)
Constant	−0.0077*	−0.0164**	−0.0028	−0.0077*	−0.0105**	−0.0062
	(−2.76)	(−3.12)	(−0.34)	(−2.78)	(−3.08)	(−1.24)
Observations	28,716	9,861	8,940	28,728	6,413	5,393
R-squared	0.116	0.144	0.156	0.117	0.153	0.227
Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered STD	Yes	Yes	Yes	Yes	Yes	Yes

Table A.6. Performance Persistence by Manager Gender: Additional Specifications

This table provides alternative measures of female representation for the performance-persistence regressions. Panel A uses the percentage of female managers in the fund. Panel B estimates the matched alpha-on-alpha and rank-on-rank persistence regressions separately for months with and without a female manager. Past and future performance windows, controls, and fixed effects follow Table 10. Clustered t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	$t+1$ through $t+6$		$t+7$ through $t+12$	
	Future alpha	Future rank	Future alpha	Future rank
Panel A. Percentage female managers				
Past alpha	0.1190***		0.0799***	
	(8.06)		(5.82)	
Past rank		0.1245***		0.0992***
		(14.64)		(12.60)
Percentage female	-0.0000***	-0.0012*	-0.0000**	-0.0012*
	(-4.38)	(-1.84)	(-2.38)	(-2.09)
Past alpha × Percentage female	-0.0000		-0.0001	
	(-0.22)		(-0.61)	
Past rank × Percentage female		0.0003		0.0003
		(1.42)		(1.60)
Observations	358,167	356,938	341,090	342,908
R-squared	0.082	0.019	0.075	0.014
Panel B. Split samples by Has Female				
Has Female = 1	0.1120***	0.1314***	0.0730***	0.1106***
	(5.65)	(8.27)	(3.59)	(8.92)
Has Female = 0	0.1188***	0.1257***	0.0789***	0.0988***
	(7.85)	(14.21)	(5.80)	(12.04)
Observations, Has Female = 1	76,698	76,276	72,834	73,068
Observations, Has Female = 0	281,467	280,661	268,254	269,840
Controls	Yes	Yes	Yes	Yes
Category FE	Yes	Yes	Yes	Yes
Year-Month FE	Yes	Yes	Yes	Yes