

Identity-Linked Monitoring and Portfolio Choice*

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Abstract

Identity-linked portfolio tilts in delegated management can reflect taste-based affinity or a comparative advantage in monitoring. Using gender alignment between U.S. mutual fund managers and CEOs, we show female-managed funds overweight female-CEO firms by 0.13 percentage points of TNA (about 5% of mean exposure), a tilt that rises after female-manager appointments. The taste-based channel predicts ESG co-tilts and return sacrifice; we find neither. Instead, the tilt is strongest for geographically proximate firms and is accompanied by fewer SEC filing downloads despite larger positions, consistent with substitution away from public-information acquisition toward a monitoring-based comparative advantage.

Keywords: Information Costs, Portfolio Management, Identity, Monitoring, Gender, Mutual Funds

JEL classification: G11, G23

*AI tools were used to help clarify the exposition. All analysis, interpretation, and conclusions are the authors' own.

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1 Introduction

Delegated portfolio managers must allocate scarce monitoring capacity across a large universe of firms. When the cost of producing and maintaining firm-specific information varies across manager–firm pairs, optimal portfolio weights will tilt toward firms for which the manager’s monitoring technology is relatively efficient (Grossman and Stiglitz, 1980; Merton, 1987; Van Nieuwerburgh and Veldkamp, 2010). A large empirical literature confirms that dimensions of “closeness” between investors and firms—geography, social networks, shared professional backgrounds—shape both portfolio weights and information advantages (Coval and Moskowitz, 1999, 2001; Hong, Kubik, and Stein, 2005; Cohen, Frazzini, and Malloy, 2008; Pool, Stoffman, and Yonker, 2012). Yet an observationally similar portfolio tilt can also arise from taste-based preferences: if managers derive non-pecuniary utility from holding certain assets, equilibrium portfolio weights will shift even absent any information advantage (Heinkel, Kraus, and Zechner, 2001; Hong and Kacperczyk, 2009; Pástor, Stambaugh, and Taylor, 2021). Distinguishing between these two forces is difficult in practice, because holdings data alone cannot reveal whether an overweight reflects lower monitoring costs or a consumption motive.

This paper develops and tests predictions that separate information-cost-based comparative advantage from taste-based affinity in delegated portfolios. We exploit a dimension of manager–firm similarity that has clear implications under both channels: gender alignment between mutual fund managers and corporate CEOs. If female managers face lower costs of engaging with, interpreting signals from, and monitoring female CEOs through lower communication frictions, more natural access, or more efficient processing of qualitative in-

formation, then portfolio weights will tilt toward female-led firms even without differences in stated mandates or benchmark exposures. Alternatively, if the tilt reflects taste-based affinity or homophily, it represents a non-pecuniary portfolio choice that need not be associated with information advantages and may come at the cost of risk-adjusted performance.

Gender alignment offers three advantages as an empirical setting. First, gender is observable on both sides of the fund–firm pair, allowing clean measurement of manager–CEO similarity across a broad panel. Second, within-fund manager turnover provides quasi-experimental variation: we observe how the same fund’s portfolio changes when its management team transitions from all-male to mixed-gender. Third, we can directly measure one channel of information acquisition. By linking mutual fund organizations to activity in the SEC’s EDGAR filing system, we observe how managers’ public-information acquisition varies across firms, providing a revealed-preference measure of monitoring technology that goes beyond portfolio weights.

Our analysis proceeds in two stages. First, we establish a robust and economically meaningful identity-linked portfolio tilt. In the cross section, female-managed funds allocate approximately 0.13 percentage points more of fund TNA to female-CEO firms—roughly 5% relative to the unconditional mean exposure of about 2.5% of TNA.¹ Using within-fund manager turnover in a matched difference-in-differences design, we show that exposure to female-CEO firms rises by about 0.31 percentage points after a fund appoints a female manager, with effects concentrated in funds hiring their first female manager. These within-fund changes are difficult to attribute to time-invariant fund mandates, styles, or clienteles

¹Because male CEOs constitute the large majority of the investable universe, a symmetric “male-CEO tilt” is mechanically less informative. Our tests therefore focus on the incremental demand for the relatively small set of female-led firms.

(Niessen-Ruenzi and Ruenzi, 2019).

Second, we exploit the divergent predictions of the two mechanisms to determine which channel drives the tilt. Under taste-based affinity, the tilt reflects non-pecuniary utility and therefore should be accompanied by lower subsequent risk-adjusted fund returns if it pushes portfolios away from mean–variance efficiency (Hong and Kacperczyk, 2009; Pástor et al., 2021; Renneboog, Ter Horst, and Zhang, 2008). In addition, it should be accompanied by ESG co-tilts if gender-linked preferences correlate with broader pro-social investment motives (Di Giuli, Garel, and Petit-Romec, 2022). Under comparative advantage, the tilt reflects lower monitoring costs and therefore should be amplified by geographic proximity, which further reduces interaction and monitoring frictions, and also accompanied by reduced reliance on costly public-information sources when covering firms for which the manager’s monitoring technology is more efficient.

Our results support the comparative advantage mechanism. The portfolio tilt is significantly stronger when female-managed funds are geographically close to female-led firms. Specifically, co-location in the same state accounts for roughly one-third of the baseline tilt, which is consistent with proximity amplifying access and lowering monitoring frictions. More distinctively, we use unmasked mutual fund activity in the SEC’s EDGAR server logs to show that female managers download fewer regulatory filings for female-led firms despite holding larger positions in these firms. This combination of larger holdings and lower filing-based information acquisition is a substitution pattern: managers shift away from standardized public disclosures toward other channels of learning and monitoring that become relatively more efficient under identity alignment. On the other side of the ledger, we find no evidence that the tilt is accompanied by ESG co-tilts or by lower subsequent fund

performance, as a taste-based channel would predict.

Our results make three contributions. First, we bring revealed measures of information acquisition to the study of identity-linked portfolio choice. A recent literature uses EDGAR server logs to measure the attention and information demand of sophisticated market participants (Drake, Roulstone, and Thornock, 2015; Gibbons, Iliev, and Kalodimos, 2021; Crane, Crotty, and Umar, 2023); we extend this approach to the fund–firm level. Our key innovation is to show that the comparative-advantage mechanism operates not only through *what* managers hold but also through *how* they acquire information: the joint finding of larger positions and fewer filing downloads is direct evidence of heterogeneous monitoring costs that holdings alone cannot reveal.

Second, we add to work on portfolio specialization under information frictions by identifying a new dimension along which monitoring costs vary. Prior evidence shows that investors concentrate in “closer” securities—geographically, socially, or culturally proximate (Coval and Moskowitz, 1999; Ivković and Weisbenner, 2005; Grinblatt and Keloharju, 2001; Hong and Xu, 2019). We show that identity-based similarity between a delegated investor and a firm’s CEO operates through the same channel: the tilt is strongest where monitoring is most feasible and coincides with measurable shifts in how information is produced.

Third, our results caution against reading identity-linked portfolio patterns as evidence of taste-based bias. A growing literature shows that investor preferences shape capital allocation and how funds are marketed and rewarded (Bollen, 2007; Riedl and Smeets, 2017; Hartzmark and Sussman, 2019). Because our central finding could easily be read as affinity-driven investing, it matters that the data reject that interpretation: the tilt carries no ESG co-tilt and no return sacrifice. Observationally similar overweighting patterns can thus arise

from fundamentally different economic forces—here, differences in the cost of producing information rather than in taste.

The remainder of the paper proceeds as follows. Section 2 develops hypotheses from the taste-based and comparative-advantage frameworks. Section 3 describes the data and variable construction. Section 4 presents the allocation evidence and the quasi-experimental results around manager appointments. Section 5 uses geographic proximity, EDGAR-based information acquisition, ESG co-tilts, and fund performance to distinguish between mechanisms. Section 6 concludes.

2 Hypothesis Development

Portfolio choices of delegated investors reflect not only risk–return tradeoffs but also the information sets and constraints under which those investors operate. When information acquisition and processing are costly, capacity-constrained managers optimally specialize in securities for which their monitoring technology is relatively efficient ([Grossman and Stiglitz, 1980](#); [Merton, 1987](#); [Van Nieuwerburgh and Veldkamp, 2010](#)). Consistent with this framework, prior research shows that dimensions of closeness between investors and firms—geography, social connections, shared professional backgrounds—shape both portfolio weights and information advantages ([Coval and Moskowitz, 1999, 2001](#); [Malloy, 2005](#); [Cohen et al., 2008](#); [Pool et al., 2012](#)).

Theory also allows delegated investors to derive non-pecuniary utility from holding particular assets. When investors favor or disfavor securities for reasons unrelated to expected cash flows, equilibrium prices and expected returns reflect these tastes ([Heinkel et al., 2001](#);

Hong and Kacperczyk, 2009; Pástor et al., 2021). Because such preferences distort portfolio weights away from risk-adjusted return maximization, they generate predictable return patterns, including lower expected returns on disproportionately favored assets and lower risk-adjusted performance for investors whose portfolios tilt to satisfy non-pecuniary objectives (Hong and Kacperczyk, 2009; Pástor et al., 2021; Renneboog et al., 2008).

These two strands of the literature—specialization driven by heterogeneous monitoring costs and portfolio distortion driven by non-pecuniary preferences—offer competing interpretations for any portfolio pattern in which delegated investors systematically overweight securities linked to a shared identity trait. We study this identification problem using gender alignment between mutual fund managers and corporate CEOs. Both channels predict the same first-order outcome: female managers should allocate larger portfolio weights to female-led firms than male managers do. The channels diverge, however, in their auxiliary predictions regarding performance consequences, co-tilts with other preference-linked characteristics, geographic variation, and information-production behavior. We summarize the shared first-order prediction as Hypothesis 1.

Hypothesis 1 (Overweighting). *Female mutual fund managers allocate larger portfolio weights to female-led firms than do male mutual fund managers.*

The remainder of this section develops the auxiliary predictions that separate the two mechanisms. We present the taste-based channel first, then the comparative-advantage channel, highlighting where each generates unique and testable implications.

2.1 Taste-based affinity and homophily

Under a taste-based mechanism, female fund managers derive non-pecuniary utility from allocating capital to female-led firms. The manager’s objective function includes not only risk-adjusted returns but also an identity-linked preference component, consistent with homophily—a pervasive tendency to favor in-group counterparts (McPherson, Smith-Lovin, and Cook, 2001). Such preferences are analogous to values-based investing, in which investors accept financial costs to align holdings with social or ideological objectives (Heinkel et al., 2001; Hong and Kacperczyk, 2009; Pástor et al., 2021).

This channel yields two testable implications. First, because portfolio weights are tilted for non-pecuniary reasons, greater exposure to identity-aligned firms can be followed by lower subsequent risk-adjusted fund returns if the tilt pushes the portfolio away from mean–variance efficiency or toward assets that command a taste premium (Hong and Kacperczyk, 2009; Pástor et al., 2021; Renneboog et al., 2008). Second, if identity-linked preferences correlate with broader pro-social tastes, the gender-aligned tilt should be accompanied by stronger ESG-oriented investing. This prediction is motivated by experimental evidence of gender differences in social preferences² and by evidence that female-led mutual funds are more supportive of environmental and social shareholder proposals (Di Giuli et al., 2022).³

Hypothesis 2a (Taste-based performance). *If female managers’ overweighting in female-led firms reflects taste-based affinity, then female-managed funds with a larger gender-aligned tilt earn lower subsequent risk-adjusted performance (alpha).*

²See, e.g., Croson and Gneezy (2009) and Andreoni and Vesterlund (2001).

³Related evidence links female representation in corporate leadership to stronger corporate social performance; see Byron and Post (2016).

Hypothesis 2b (Taste-based ESG co-tilt). *If female managers’ overweighting in female-led firms reflects pro-social tastes, then a larger gender-aligned tilt is associated with a higher tilt toward ESG characteristics.*

2.2 Comparative advantage in monitoring

An alternative mechanism attributes the portfolio tilt to heterogeneous monitoring costs. This channel does not require female managers to possess superior private information *ex ante*; rather, it posits that producing and maintaining firm-specific information is less costly when manager–firm similarity reduces frictions in learning and ongoing oversight. Gender similarity may lower the cost of accessing management, interpreting qualitative information, and sustaining engagement—each of which contributes to the total cost of monitoring a given firm.

This interpretation connects to a large literature documenting that closeness along observable dimensions shapes information sets and portfolio allocations. Investors overweight geographically proximate firms (Coval and Moskowitz, 1999; Pool et al., 2012), and proximity has been linked to information advantages in both trading and information intermediation (Coval and Moskowitz, 2001; Malloy, 2005). Social and professional networks facilitate information transfer and influence institutional holdings (Hong et al., 2005; Cohen et al., 2008). Cultural and language proximity affect which stocks investors hold and trade (Grinblatt and Keloharju, 2001). Our contribution is to show that identity-based similarity between a delegated manager and a firm’s CEO operates through the same economic channel, and to provide direct evidence on the information-production mechanism that prior closeness-based

studies have lacked.

To formalize the intuition, consider a capacity-constrained manager choosing research intensity a_i and portfolio weight w_i for each stock i . Research improves the precision of the manager’s signal about stock i but is costly, and the manager faces a finite attention budget (Kacperczyk, Van Nieuwerburgh, and Veldkamp, 2016). If gender alignment reduces the marginal cost of achieving a given signal precision for a subset of firms—that is, $c_F(a_i) < c_M(a_i)$ for female-CEO firms when the manager is female—then optimality implies larger portfolio weights on those firms, because the manager can attain a given monitoring quality at lower cost. Critically, the resulting portfolio tilt need not be accompanied by abnormal performance: if the tilt reflects cost minimization rather than superior private signals, the manager earns competitive risk-adjusted returns while holding a portfolio that is tilted relative to a benchmark that does not condition on monitoring costs.

This comparative-advantage channel yields three testable implications. First, because the tilt reflects lower monitoring costs rather than non-pecuniary preferences, it has no necessary implication for abnormal fund performance—in contrast to the return sacrifice predicted by the taste-based channel. Second, any factor that further reduces monitoring frictions, such as geographic proximity between the fund and the firm, should amplify the identity-aligned tilt. Third—and this is the prediction most distinctive to our paper—if identity alignment lowers monitoring costs, managers should substitute away from costly standardized information sources when covering identity-aligned firms. Specifically, we predict that female managers download fewer SEC filings for female-led firms despite holding larger positions, a substitution pattern consistent with shifting toward lower-cost monitoring

channels that are relatively more efficient under gender alignment.⁴

Hypothesis 3a (No necessary performance implication). *If female managers’ overweighting in female-led firms reflects comparative advantage in monitoring costs rather than tastes, then a fund’s gender-aligned tilt has no necessary implication for subsequent risk-adjusted fund performance.*⁵

Hypothesis 3b (Proximity amplification). *If female managers’ overweighting in female-led firms reflects a comparative advantage in monitoring, then the gender-aligned tilt is stronger when the manager is geographically proximate to the firm.*

Hypothesis 3c (Information-production substitution). *If female managers’ overweighting in female-led firms reflects a comparative advantage in monitoring, then female managers acquire less public information for female-led firms, consistent with substitution toward lower-cost monitoring channels.*

Taken together, Hypotheses 2a–2b and Hypotheses 3a–3c provide discriminating predictions that portfolio weights alone cannot adjudicate. The taste-based channel uniquely predicts return sacrifice and ESG co-tilts; the comparative-advantage channel uniquely predicts proximity amplification and information-production substitution. In the empirical analysis that follows, we first establish the baseline overweighting (Hypothesis 1) and then evaluate the competing mechanisms by testing each of these auxiliary predictions.

⁴We proxy for public information acquisition using downloads from the SEC’s EDGAR filing system, following [Drake et al. \(2015\)](#) and [Crane et al. \(2023\)](#). This allows us to observe a revealed-preference measure of information production that goes beyond portfolio weights.

⁵Because male CEOs constitute the large majority of the investable universe, a symmetric “male-CEO tilt” is mechanically less informative. Our tests therefore focus on the incremental demand for the relatively small set of female-led firms.

3 Data and Measures

Our analysis combines five data sources. We obtain mutual fund returns and characteristics from the CRSP Survivor-Bias-Free Mutual Fund Database and quarterly fund holdings from the Thomson Reuters S12 mutual fund holdings database. We obtain manager identities and gender from Morningstar Direct, supplementing missing gender assignments as described in the appendix.⁶ We identify CEO gender using ExecuComp and merge in standard firm-level data from CRSP and Compustat. Finally, we use SEC EDGAR server logs to measure fund-level public-information acquisition directed at individual firms.

We focus on actively managed U.S. equity mutual funds. Following standard practice, we exclude index funds, sector funds, and funds that hold on average less than 80% in common stocks. Our final sample spans 2002–2023 and contains 3,383 distinct U.S. equity funds, of which 22.23% are female-managed, where a female-managed fund is one whose management team includes at least one female manager. Full details on the data merges, share-class aggregation, manager-gender coding, and sample screens are provided in the appendix.

3.1 Key Variables

Our main explanatory variable is *Female Fund*, an indicator equal to one if a fund’s management team includes at least one female manager. We define a *female-led firm* as a firm with a female chief executive officer.

Our main outcome variables measure a fund’s exposure to female-led firms. We use three complementary measures. The first, *Female Holdings* > 0 , is an indicator equal to one

⁶A full description of the data sources is provided in Internet Appendix A.

if a fund holds at least one female-led firm in a given quarter. The second, *%Female Holdings (over Fund TNA)*, measures the percentage of a fund’s total net assets invested in female-led firms. The third, *%Female Holdings (over Total Holdings)*, measures the percentage of a fund’s equity portfolio invested in female-led firms. These measures allow us to examine both the extensive and intensive margins of the female-CEO tilt.

1. *Female Holdings > 0*: an indicator equal to one if the fund holds at least one female-led firm in a given quarter;
2. *%Female Holdings (over Fund TNA)*: the percentage of a fund’s total net assets invested in female-led firms;
3. *%Female Holdings (over Total Holdings)*: the percentage of a fund’s total equity holdings invested in female-led firms.

Over our sample from 2002 to 2023, 17.56% of fund-quarter observations do not hold any female-led firms and the remaining 82.44% observations have positive exposures to female-led firms. Among those funds with positive holdings in female-led firms, 3.07% of a fund’s total net assets are invested in female-led firms and 4.43% of a fund’s total equity holdings are invested in female-led firms on average.

For the mechanism tests to distinguish between the taste-based affinity and comparative advantage channels we construct two additional sets of variables. First, we measure geographic proximity between a fund and a firm using headquarters location data and identify whether a female-managed fund and a female-led firm are located in the same state. Second, we use EDGAR logs to measure fund-level public-information acquisition for female-led firms. Our main EDGAR variables capture (i) the share of a fund’s filing-download activity

directed to female-led firms and (ii) search intensity for female-led firms relative to male-led firms. Throughout the paper, we also control for standard fund characteristics, including fund size, age, flows, turnover, expense ratios, recent returns, risk, team size, manager experience, and manager tenure.

3.2 Summary Statistics

Figure 1 illustrates the time-series evolution of female representation in the mutual fund industry and in the U.S. stock market from 2002 to 2023. In Panel A, although the percentage of female funds based on fund counts remains consistent at around 22%, the percentage of female funds based on fund total net assets increases substantially over time from 20% in 2002 to about 36% by 2023. In Panel B, female representation among publicly traded firms also rises over time. The proportion of female-led firms based on both firm counts and firm sizes increases from less than 2% in 2002 to over 7% by 2023.

The simultaneous trends of female representation in both sectors highlight a steady increase in female leadership both in corporate management and in institutional asset management. Motivated by these trends, our paper examines whether female-managed funds allocate capital differently across female-led and male-led firms.

Table 1 reports summary statistics for the main variables. Female-led firms are a small proportion that accounts for only 4.14% in our sample, but an economically meaningful part of the investable universe. The average fund holds 3.70 female-led firms, allocates 2.49% of total net assets to female-led firms, which is equivalent to 3.59% of total equity holdings, in a given quarter. Female-managed funds represent a minority of the sample, but they hold

systematically more female-led firms than male-managed funds.

Figure 2 reports estimated mean differences between female-managed and male-managed funds across measures of portfolio exposure to female-led firms in Panel A and fund characteristics in Panel B. The figure reports that female-managed funds exhibit significantly greater exposure to female-led firms along multiple dimensions. For example, female-managed funds hold \$17.22 million more in female-led firms and allocate 0.17% more of their fund total net assets⁷ and 0.22% more of their total equity holdings to female-led firms than male-managed funds. In addition, female-managed funds hold 1.20 more female-led firms in their equity portfolios. All these differences are statistically significant and thus motivate the paper’s central question: whether this female-CEO tilt reflects taste-based affinity or a comparative advantage in learning and monitoring.

4 Female Managers’ Allocation to Female-Led Firms

This section tests Hypothesis 1 and establishes the paper’s main fact: female-managed mutual funds allocate more capital to firms led by female CEOs. We begin with panel regressions comparing female- and male-managed funds in the cross-section. We then turn to within-fund changes in portfolio allocation around manager appointments to address the concern that the cross-sectional relation simply reflects persistent differences in mandates, styles, or clienteles.

⁷Detailed mean statistics for female-managed and male-managed funds can be found in Appendix Table B1. For example, female-managed funds allocate 2.62% of fund TNA to female-led firms, compared with 2.45% for male-managed funds.

4.1 Fund Allocation

We begin by testing whether female-managed funds hold more female-led firms than otherwise similar male-managed funds. Specifically, we estimate the following fund-quarter panel regression:

$$\text{FemaleExposure}_{i,t} = \alpha + \beta_1 \text{FemaleFund}_{i,t-1} + \beta_2' \text{Controls}_{i,t-1} + \lambda_{t-1} + \varepsilon_{i,t-1}, \quad (1)$$

where $\text{FemaleFund}_{i,t-1}$ is an indicator equal to one if fund i is managed by at least one female portfolio manager in quarter $t - 1$. The vector $\text{Controls}_{i,t-1}$ includes lagged fund characteristics: the number of managers, manager experience and tenure, fund size (and its square), fund age, turnover, recent performance, total risk, and fund flows. We include time fixed effects in all specifications and fund-style fixed effects in selected specifications. Standard errors are clustered at the fund level.

The dependent variable, $\text{FemaleExposure}_{i,t}$, captures a fund's exposure to female-led firms and is measured in three ways. In Panel A of Table 2, it is an indicator equal to one if the fund holds at least one female-led firm in quarter t , capturing the extensive margin. In Panels B and C, it measures the fraction of the fund's portfolio invested in female-led firms, scaled by fund TNA and by total equity holdings. This captures the intensive margin.

Table 2 shows a consistent female-CEO tilt across all three measures. On the extensive margin (Panel A), female-managed funds are up to 5.3 percentage points more likely to hold at least one female-led firm compared to similar male-led funds. On the intensive margin, female-managed funds allocate 0.12 to 0.16 percentage points more of fund TNA to female-led firms (Panel B) and 0.13 to 0.17 percentage points more when holdings are scaled by

total equity value (Panel C). Taking Panel B as a benchmark, the coefficient of roughly 0.12 percentage points implies an increase of about 5% relative to the sample mean allocation of 2.5% of TNA. Thus, this baseline panel evidence indicates that female managers tilt their portfolios toward female-led firms both by entering more such positions and by allocating more capital to them once held⁸.

Figure 3 shows that this pattern persists throughout the sample period. Female-managed funds consistently maintain greater exposure to female-led firms than male-managed funds, whether exposure is measured relative to total net assets or total equity holdings. This tilt is also economically meaningful in dollar terms. As shown in Panel A of Figure 4, female-managed funds collectively allocate, on average, \$1.4 billion more to female-led firms over time, and this difference reaches as high as \$6.37 billion.

4.2 Manager Appointments and Difference-in-Differences Evidence

While the previous tests document that female-managed funds allocate more capital to female-led firms, cross-sectional differences in holdings could still reflect unobserved fund characteristics correlated with manager gender. To address this concern, we examine within-fund changes in portfolio allocation around manager hires using a difference-in-differences design. Specifically, we compare funds that hire a female manager to funds that hire a male manager and examine how their exposure to female-CEO firms changes around the manager

⁸Our results are not driven by industry concentration. As Figure B2 shows, the female-managed funds invest across all SIC 3-digit industries without concentrating in any specific industry relative to male-managed funds. Figure B3 presents a scatter plot at the SIC 3-digit industry level, showing that the female-manager tilt toward female-led firms is not affected by the share of female firm representations within a given industry.

appointment:

$$\begin{aligned}
\text{FemaleExposure}_{i,t} = & \alpha + \beta_1 \text{FemaleHire}_{i,t} + \beta_2 \text{Post}_{i,t} \\
& + \beta_3 \text{FemaleHire}_i \times \text{Post}_{i,t} \\
& + \beta'_4 \text{Controls}_{i,t-1} + \lambda_{t-1} + \varepsilon_{i,t-1},
\end{aligned} \tag{2}$$

where FemaleHire_i equals one for treated funds that appoint at least one female manager and zero for matched control funds that appoint a male manager during the same period. $\text{Post}_{i,t}$ equals one in the hire quarter and in the four quarters that follow, and zero in the four quarters before the hire. Matching is performed within fund style and on lagged team size, fund size, flows, returns, and initial female-led holdings. The coefficient of interest, β_3 , captures the change in exposure to female-led firms following a female-manager appointment, relative both to the fund's own pre-hire exposure and to matched funds that hire a male manager.

Table 3 shows that the female-CEO tilt rises sharply after female-manager appointments. On the extensive margin, treated funds become almost 5 percentage points more likely to hold at least one female-led firm. On the intensive margin, the share of fund TNA allocated to female-led firms rises by roughly up to 0.33 percentage points, while the share scaled by total equity holdings rises by 0.38 percentage points. Relative to the unconditional mean exposure of 2.5%, the TNA-scaled effect is economically large, amounting to roughly a 12% increase. These within-fund changes are difficult to reconcile with an explanation based solely on time-invariant fund mandates or clienteles.

Figure 5 complements the difference-in-differences estimates by plotting event-time dy-

namics around the hire. The treated and control funds display broadly similar pre-trends in the quarters leading up to the appointment. After the hire, exposure to female-led firms rises for treated funds and remains elevated over the subsequent quarters, whereas matched control funds show no comparable increase. The event-time pattern therefore reinforces the interpretation that the appointment of a female manager leads funds to allocate more capital to female-led firms.⁹ Together, the results in this section document our main empirical fact and support Hypothesis 1, developed earlier.

4.2.1 First-Time versus Incremental Female Manager Appointments

A useful refinement is to distinguish between first female-manager appointments and additional female hires by funds that already employ at least one female manager. Table 4 shows that the DID effect is concentrated in funds hiring their first female manager. For those funds, the post-hire increase in female-led holdings is economically larger, over 0.40 percentage points of TNA and around 0.45 percentage points of total holdings, and statistically significant across the intensive-margin specifications. By contrast, the corresponding estimates for additional female hires are small and statistically insignificant. This pattern suggests that the main allocation response occurs when a previously all-male team first acquires female representation, rather than when an already mixed-gender team adds another female manager.

⁹Event time 0 is defined as the hiring quarter. See appendix Figure B1 for distribution of hires over the hiring quarter. Specifically, the hiring occurs throughout the quarter, with only 18.69% of the manager hires occurring within 20 days before the quarter-end date, reinforcing that female managers can start making investment decisions from quarter 0.

5 Affinity versus Comparative Advantage

The results in Section 4 establish that female-managed funds tilt toward female-led firms, but they do not reveal why. This section evaluates the competing mechanisms developed in Section 2. We first examine whether the tilt is stronger where interaction and monitoring are more feasible. We then study public-information acquisition using EDGAR logs. Finally, we test whether the female-CEO tilt is accompanied by ESG-oriented portfolio choices and lower returns, as predicted by a taste-based affinity channel.

5.1 Geographic Proximity and Allocation

The comparative-advantage view implies that the female-CEO tilt should be strongest when opportunities for interaction and monitoring are most feasible. We test this idea by focusing on local female-led firms, that is, female-led firms headquartered in the same state as the fund. Specifically, we estimate:

$$\text{LocalFemaleExposure}_{i,t} = \alpha + \beta_1 \text{FemaleFund}_{i,t-1} + \beta'_2 \text{Controls}_{i,t-1} + \lambda_{t-1} + \varepsilon_{i,t-1}, \quad (3)$$

where the dependent variable is the fund’s exposure to *local* female-led firms, measured analogously to the main holdings tests. If gender alignment lowers the cost of engaging with and monitoring female-led firms, then the overweighting documented earlier should be amplified when the fund and firm are geographically proximate.

The results in Table 5, especially results on the intensive margin, support this prediction and are economically meaningful. Female-managed funds allocate around 0.04 percentage

points more of fund TNA (or total equity holdings) to local female-led firms. Relative to the baseline female-CEO tilt of roughly 0.13 percentage points of TNA, the local component accounts for roughly one-third of the overall tilt. This is exactly the pattern we would expect if the comparative advantage is strongest where access and monitoring are easiest. Further, these results are strong support for Hypothesis 3b.

5.2 Public Information Acquisition and Substitution

We next test whether female managers acquire public information differently when investing in female-led firms. The logic is straightforward. If gender alignment lowers the cost of understanding and monitoring female-led firms, then female managers should need to rely less on standardized, filing-based public information when covering those firms. We estimate:

$$\text{FemaleSearch}_{i,t} = \alpha + \beta_1 \text{FemaleFund}_{i,t-1} + \beta_2' \text{Controls}_{i,t-1} + \lambda_{t-1} + \lambda_{s-1} + \varepsilon_{i,t-1}, \quad (4)$$

where $\text{FemaleSearch}_{i,t}$ is measured in two ways. In Panel A of Table 6, it is the percentage of a fund's total EDGAR searches directed toward female-led firms. In Panel B, it is *Female Search Intensity*, defined as the average number of searches per female-led firm scaled by the average number of searches per male-led firm within the same fund and quarter. We include the same lagged fund controls as in the allocation regressions, along with time and fund-style fixed effects.

The results reported in Table 6 provide evidence of lower reliance on public filings by female-managed funds when investing in female-led firms. In Panel A, female-managed

funds devote around 0.27 percentage points less of their total EDGAR search activity to female-led firms. In Panel B, female-managed funds also exhibit lower search intensity for female-led firms, with coefficients ranging from about -0.060 to -0.073. The combination of larger holdings and lower filing-based search is difficult to reconcile with a simple attention or affinity story, and instead supports the comparative advantage channel and Hypothesis 3c. Indeed, these results suggest that female managers are substituting away from standardized public disclosures toward other channels of information processing and monitoring.

We test this substitution logic further by focusing on *local* female-led firms. If alternative information channels are especially useful when the fund and firm are geographically close, then the reduction in filing-based search should be strongest in precisely that setting. Table 7 confirms this. Female-managed funds devote 3.9 to 5.4 percentage points less of their total EDGAR search activity to local female-led firms than otherwise similar male-managed funds. The fact that both the holdings tilt and the reduction in filing-based search are strongest in local female-led firms is hard to explain with a taste-based mechanism alone and instead fits naturally with a comparative-advantage channel.

5.3 ESG Co-Tilts

Having found evidence supporting the comparative-advantage channel, we next evaluate the predictions from the taste-based affinity channel. First, if female managers overweight female-led firms for non-pecuniary reasons, the selected female-led firms may also tilt toward ESG-related characteristics. Also, if female managers overweight for non-pecuniary reasons, their funds may underperform. To test the first idea we aggregate firm-level ESG scores

to the fund-quarter level using the subset of female-led firms in each fund’s portfolio and estimate the following regression:

$$\text{FemaleESG}_{i,t} = \alpha + \beta_1 \text{FemaleFund}_{i,t-1} + \beta_2' \text{Controls}_{i,t-1} + \lambda_{t-1} + \lambda_{s-1} + \varepsilon_{i,t-1}, \quad (5)$$

where $\text{FemaleESG}_{i,t}$ denotes one of three fund-quarter ESG measures constructed from the female-led stocks held by fund i in quarter t . We aggregate firm-level ESG scores to the fund-quarter level using the portfolio weights of female-led stocks in the fund’s equity holdings. To avoid look-ahead bias, for holdings observed in a given calendar year, we match firm-level ESG scores from the previous calendar year. Because ESG ratings are correlated with firm size, we size-adjust firm-level ESG scores before aggregation.¹⁰ We then calculate $\text{FemaleESG}_{i,t}$ as the value-weighted average of these size-adjusted ESG scores across female-led stocks held by the fund. Table 8 reports results for three versions of this dependent variable: the value-weighted Social ESG score, the value-weighted overall ESG score across all ESG categories, and the value-weighted ESG score across all categories excluding corporate governance.

Across all six specifications, the coefficient on *Female Fund* is positive but economically small, and none of the estimates approaches conventional levels of significance. Thus, female-managed funds do not systematically select female-led firms with stronger ESG profiles than male-managed funds. This null result is important because it weakens a values-based explanation for the female-CEO tilt (no support for Hypothesis 2b).

¹⁰In each quarter, we sort all stocks into ten deciles based on quarter-end market capitalization and define a firm’s size-adjusted ESG score as its raw ESG score minus the average ESG score of firms in the same size decile.

5.4 Fund Performance

We next examine fund performance. This test helps distinguish between the competing predictions in Hypotheses 2a and 3a. Under the taste-based affinity channel (Hypothesis 2a), the female-CEO tilt may come at the expense of risk-adjusted performance if female managers overweight female-led firms for non-pecuniary reasons rather than because those firms are more attractive on risk-adjusted grounds. In contrast, under the comparative-advantage channel (Hypothesis 3a), the female-CEO tilt has no necessary implication for fund performance: lower information-processing and monitoring costs can rationalize overweighting in female-led firms without implying either superior or inferior subsequent returns. To test these competing predictions, we estimate regressions of subsequent fund performance on indicators for female-managed funds, measures of exposure to female-led firms, and their interaction. Our primary performance measure is quarterly DGTW excess return, which captures fund returns adjusted for characteristic-based benchmarks.

Table 9 reports the fund return results. Consistent with Hypothesis 3a and contrary to Hypothesis 2a, we find no evidence that female managers' greater exposure to female-led firms is associated with lower subsequent returns. In Panel A, the dependent variable is the fund's next-quarter DGTW excess return. We sort funds into terciles based on their holdings of female-led stocks and define `%hold_FemStock_Q3` as an indicator for funds in the top tercile. The interaction between $\text{FemaleFund}_{i,t-1}$ and $\text{\%hold_FemStock_Q3}_{i,t-1}$ captures whether female-managed funds with high exposure to female-led firms outperform other funds. The coefficient on this interaction is positive but not statistically significant in either specification. The estimates of 0.024 and 0.031 imply that female-managed funds with

high exposure to female-led firms earn about 2.4 to 3.1 basis points higher next-quarter DGTW-adjusted returns than comparable funds, though this difference is not statistically distinguishable from zero. In Panel B, when we replace the dependent variable with market-adjusted alpha, the interaction term remains positive but insignificant. Overall, we do not find evidence that female managers have superior information about female-led firms, consistent with the comparative advantage mechanism operating through lower monitoring costs rather than better signals.

Overall, the return evidence does not support the return-sacrifice prediction implied by Hypothesis 2a. At the same time, it is fully consistent with Hypothesis 3a, which does not require the comparative-advantage channel to generate large abnormal fund-level returns. Combined with the absence of ESG co-tilts in Table 8, these results provide little support for an affinity-based explanation of the female-CEO tilt.

6 Conclusion

This paper develops and tests predictions that separate two competing explanations for identity-linked portfolio tilts in delegated management: taste-based affinity and comparative advantage in monitoring. Using gender alignment between mutual fund managers and corporate CEOs as the empirical setting, we document an economically meaningful portfolio tilt toward female-led firms that rises after female-manager appointments and is concentrated in funds appointing their first female manager.

The evidence clearly favors comparative advantage over taste-based affinity. The portfolio tilt is amplified by geographic proximity—consistent with lower monitoring frictions

facilitating the information advantage—and is accompanied by reduced public-information acquisition: female managers download fewer SEC filings for female-led firms despite holding larger positions, a substitution pattern consistent with shifting toward monitoring channels that are relatively less costly under gender alignment. In contrast, we find no evidence of the ESG co-tilts or return sacrifice that a taste-based channel would predict.

More broadly, our results demonstrate that identity-linked portfolio patterns—often readily labeled as bias—can instead reflect heterogeneous costs of producing and maintaining firm-specific information. The framework we develop applies beyond gender: any dimension of manager–firm similarity that could plausibly affect both preferences and monitoring efficiency poses the same identification challenge. Our approach—combining portfolio tilts, geographic amplification, information-production substitution, and performance tests—provides a template for adjudicating between these channels in other settings where closeness-based allocation patterns emerge.

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Figure 1: Time-Series Female Trend in Mutual Funds and Stocks

This figure plots quarterly female representation among domestic equity mutual funds and CRSP common stocks. Panel A reports the percentage of female-managed funds among domestic equity funds. A female-managed fund is a fund whose management team includes at least one female manager in a given quarter. The solid blue line shows female-managed funds as a percentage of total fund TNA, while the dashed red line shows female-managed funds as a percentage of the total number of funds. Panel B reports the percentage of female-led firms among CRSP common stocks. A female-led firm is a firm with a female CEO in a given quarter. The solid blue line shows female-led firms as a percentage of total market capitalization, while the dashed red line shows female-led firms as a percentage of the total number of stocks. The sample period is from Q1/2002 to Q1/2023.

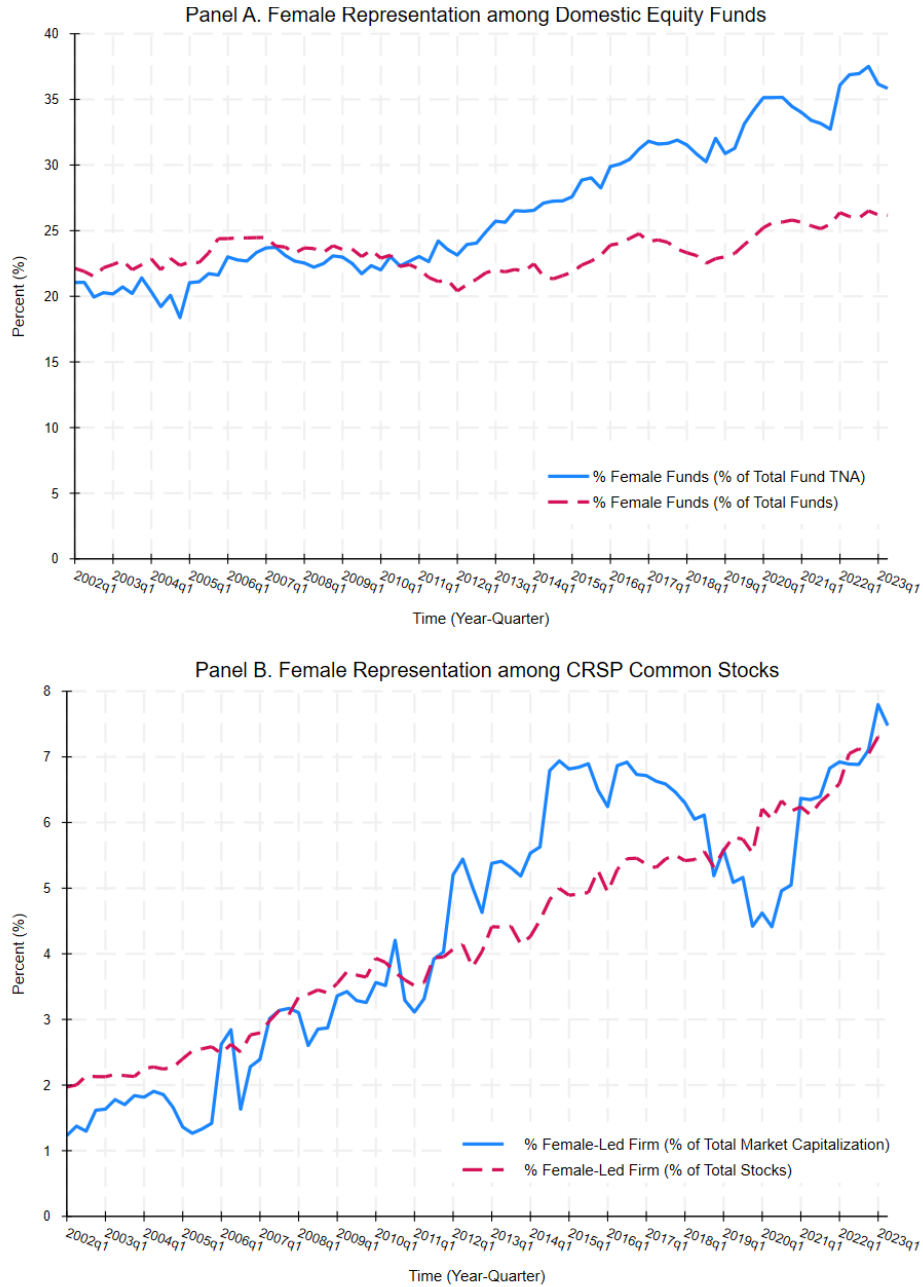


Figure 2: Mean Difference between Female and Male Funds

This figure plots female-minus-male mean differences in exposure measures to female-led firms and fund characteristics for domestic equity mutual funds. A female fund is a fund whose management team includes at least one female manager, and a female-led firm is a firm with a female CEO in a given quarter. Panel A on the left side reports differences in variables measuring exposure to female-led firms, and Panel B on the right side reports differences in fund characteristics. For each variable, dots represent estimated differences, horizontal bars indicate 95% confidence intervals, and labels above dots report estimates with significance stars. The y -axis scales vary across variables. Intervals that do not cross zero correspond to statistically significant differences. *, **, and *** correspond to significance at the 10%, 5%, and 1% levels, respectively. Variable definitions are provided in Appendix A.6 and detailed mean numbers are reported in Appendix Table B1. The sample period is from Q1/2002 to Q1/2023.

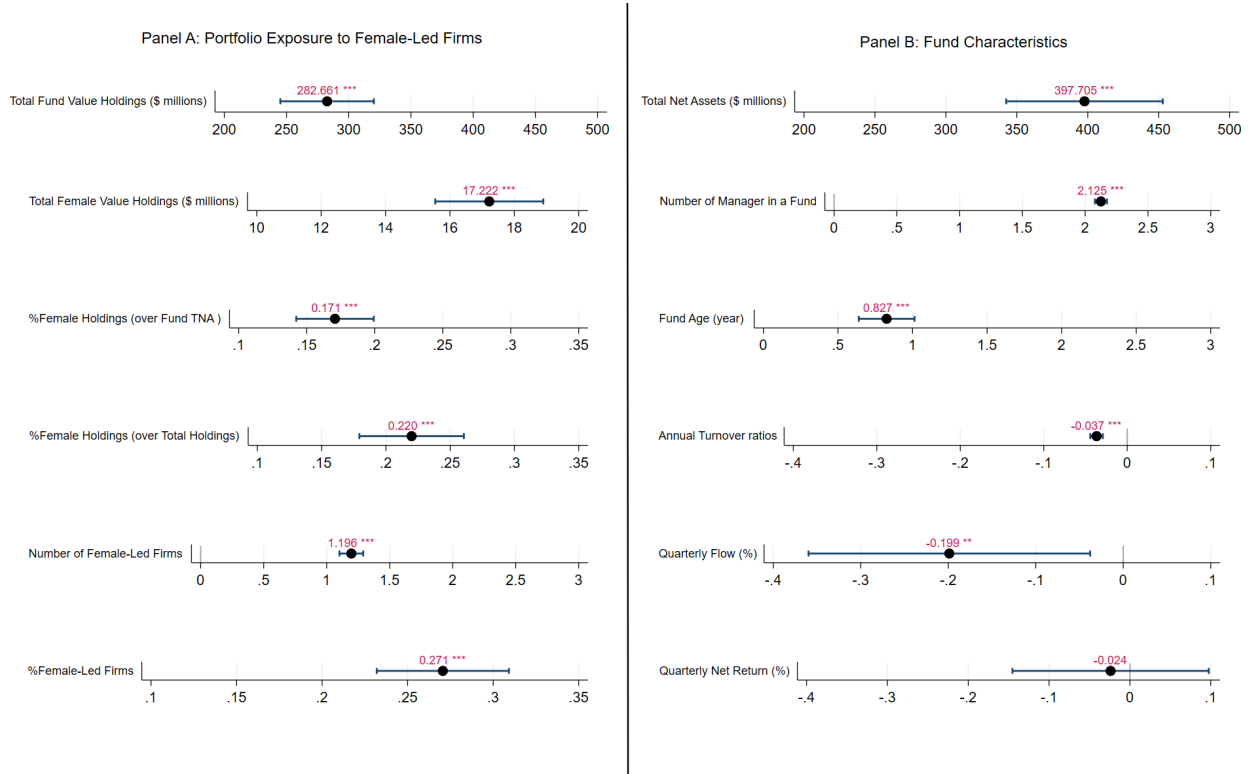


Figure 3: Time-Series Holdings in Female-Led Firms by Female and Male Funds

This figure plots quarterly percentage holdings in female-led firms by female and male mutual funds under two scaling definitions. A female fund is a fund whose management team includes at least one female manager, and a female-led firm is a firm with a female CEO in a given quarter. In both panels, the solid blue line reports female funds and the dashed red line reports male funds. Panel A measures holdings in female-led firms as a percentage of fund total net assets (TNA). Panel B measures holdings in female-led firms as a percentage of the fund's total equity holdings. The sample period is from Q1/2002 to Q1/2023.

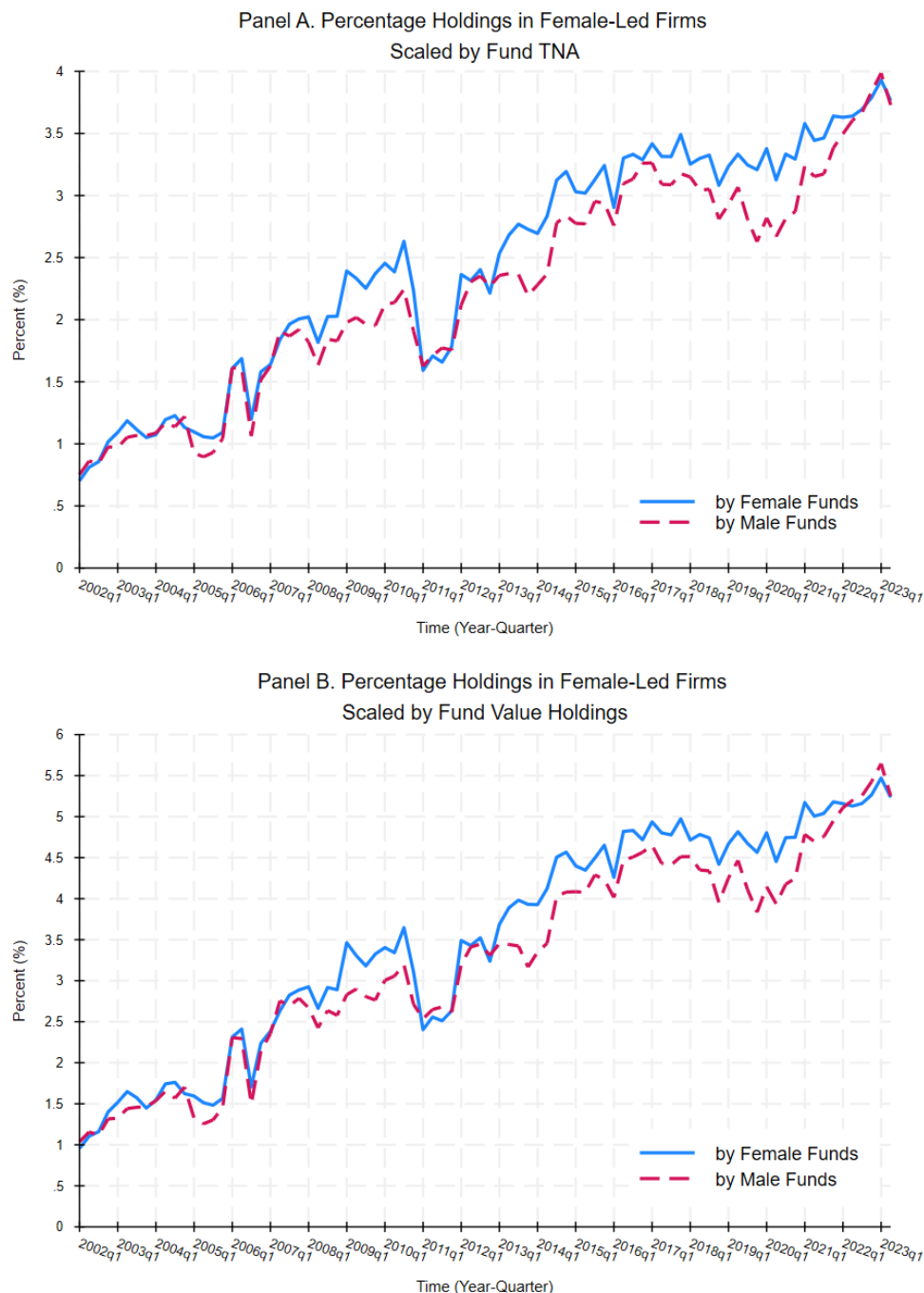
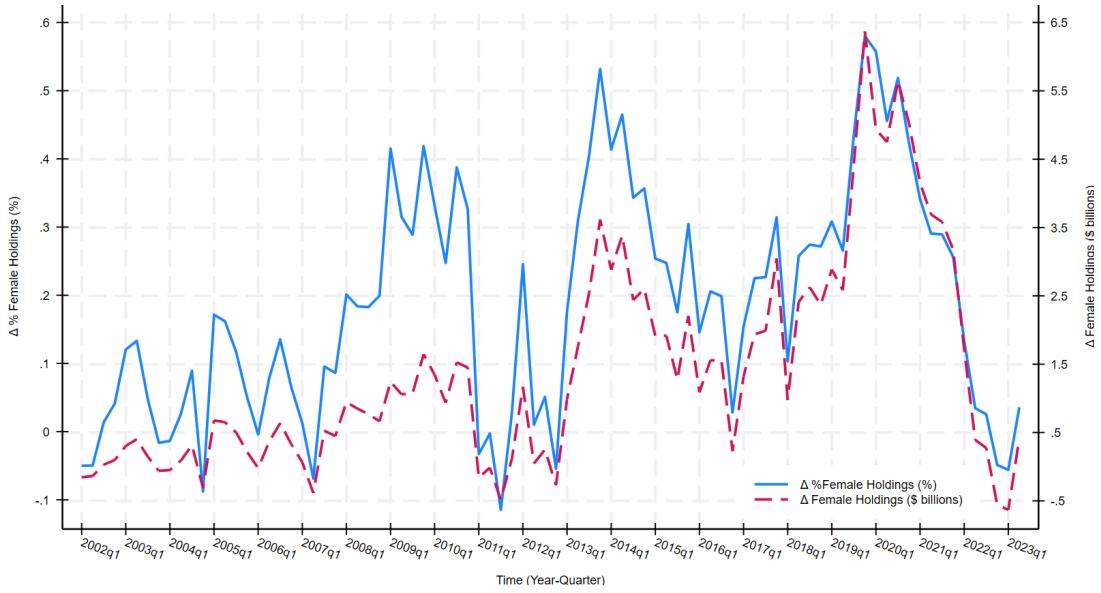


Figure 4: Female-Minus-Male Holdings in Female-Led Firms

This figure plots quarterly female-minus-male differences in mutual fund holdings of female-led firms, measured in percentage points and dollar terms. A female fund is a fund whose management team includes at least one female manager, and a female-led firm is a firm with a female CEO in a given quarter. In both panels, the solid blue line uses the left y -axis and reports the difference in percentage holdings, defined as the percentage holdings in female-led firms by female funds minus that by male funds. The dashed red line uses the right y -axis and reports the corresponding dollar difference, computed as the percentage difference multiplied by the total assets under management of female funds. Panel A scales holdings in female-led firms by fund TNA. Panel B scales holdings in female-led firms by the fund's total equity holdings. The sample period is from Q1/2002 to Q1/2023.

Panel A: Holdings Scaled by Fund TNA



Panel B: Holdings Scaled by Fund Total Equity Holdings

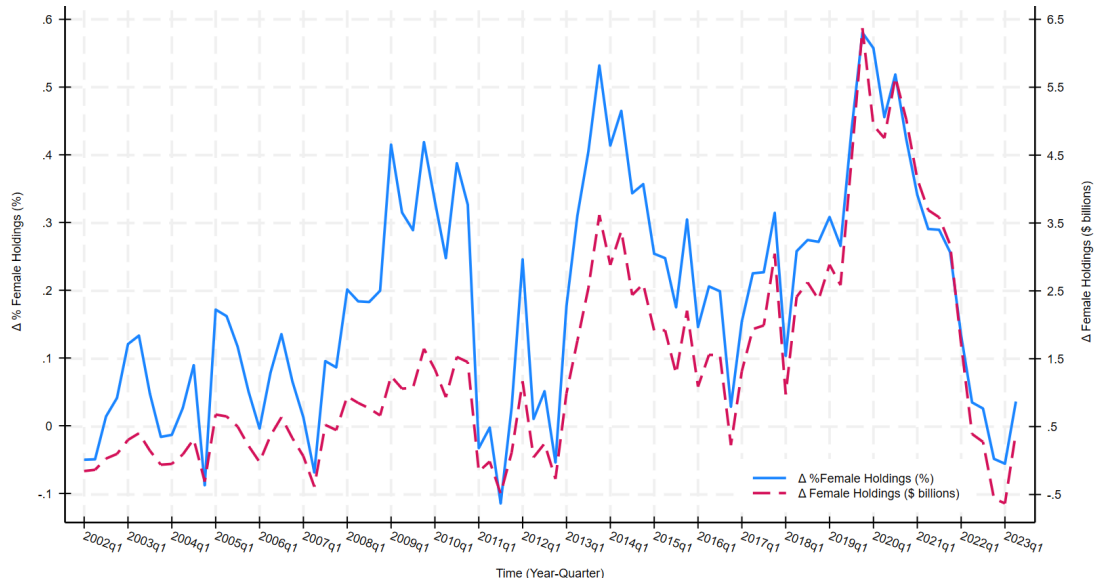


Figure 5: Holdings in Female-Led Firms around the Hiring of Fund Managers

This figure plots percentage holdings in female-led firms for treated funds and matched control funds around the event-time in the DID design. A female-led firm is a firm with a female CEO in a given quarter. Treated funds hire at least one female manager between quarter ends -1 and 0 , while matched control funds hire at least one male manager over the same window. The event window spans quarters -4 to $+4$, with the post-hire period beginning in quarter 0 . In both panels, the solid blue line reports treated funds and the dashed red line reports control funds, and the gray-shaded area marks the hiring window. Panel A scales holdings in female-led firms by fund TNA, and Panel B scales holdings in female-led firms by total equity holdings. Details on the matching procedure and variable definitions are provided in Appendix A.6. The sample period of hire events is from Q1/2002 to Q2/2023.

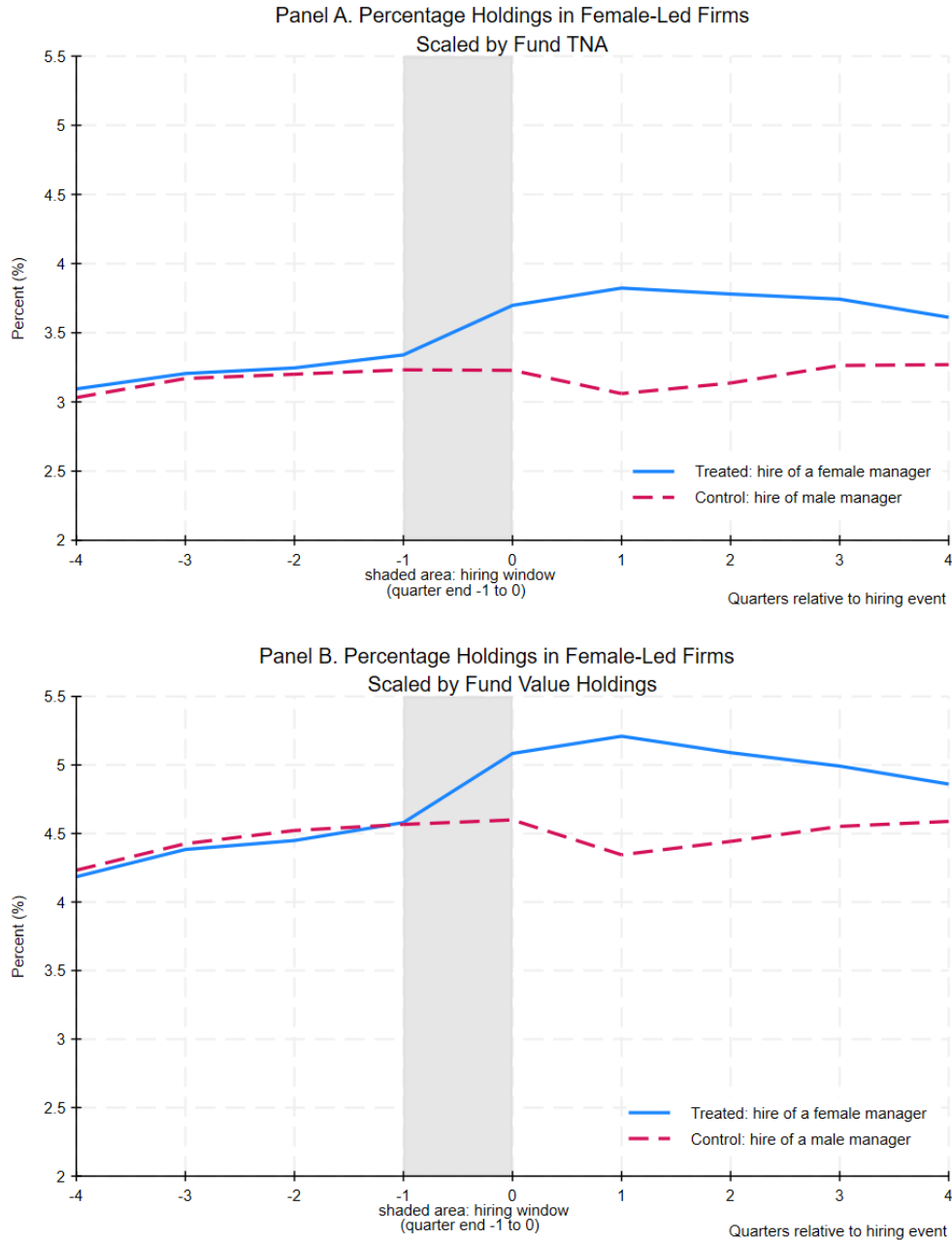


Table 1: **Summary Statistics**

Table 1 reports the summary statistics for the variables used in our main analysis. Panel A reports summary statistics for portfolio exposure to female-led firms by a fund. A female-led firm is defined as a firm with a female CEO in a given quarter. Panel B reports summary statistics for fund-level variables about manager characteristics. Panel C reports summary statistics for fund-level variables about fund characteristics. The total number of quarterly observations is reported in the last column. All continuous variables are winsorized at the 1st and 99th percentiles. The sample period is Q1/2002 to Q2/2023. A complete list of definitions for these variables is provided in the Appendix A.6.

Panel A: Portfolio Exposure to Female-Led Firms						
	Mean	S.D.	P25	P50	P75	Obs.
Total Equity Holdings (\$ millions)	1078.33	2625.08	46.85	196.33	813.26	130,584
Total Female Equity Holdings (\$ millions)	38.99	110.51	0.36	3.93	22.59	130,584
%Female Holdings (over Fund TNA)	2.49	2.28	0.68	2.01	3.70	130,584
%Female Holdings (over Total Holdings)	3.59	3.28	1.00	2.94	5.32	130,584
Number of Female-Led Firms	3.70	7.03	1.00	2.00	4.00	130,584
%Female-Led Firms	3.87	3.10	1.64	3.41	5.63	130,584
Panel B: Manager Characteristics						
	Mean	S.D.	P25	P50	P75	Obs.
Number of Managers	2.87	2.66	1.00	2.00	3.00	130,584
Number of Female Managers	0.30	0.63	0.00	0.00	0.00	130,584
%Female Managers	9.82	21.95	0.00	0.00	0.00	130,584
Manager Experience (year)	11.18	5.93	6.92	10.42	14.54	130,584
Manager Tenure (year)	6.54	5.04	2.88	5.33	8.83	130,584
Panel C: Fund Characteristics						
	Mean	S.D.	P25	P50	P75	Obs.
Annual Expense Ratio	0.01	0.00	0.01	0.01	0.01	125,607
Annual Turnover Ratio	0.72	0.64	0.29	0.54	0.92	124,654
Total Net Assets (TNA) (\$ millions)	1551.47	3830.34	70.40	286.00	1169.65	130,584
Fund Age (year)	16.48	14.11	7.08	13.08	21.25	130,584
Quarterly Flow (%)	0.66	12.66	-4.27	-1.53	2.09	128,825
Quarterly Net Return (%)	2.30	9.41	-1.70	3.22	7.72	129,011
Quarterly Total Risk (%)	0.02	0.01	0.02	0.02	0.02	129,423

Table 2: **Holdings in Female-Led Firms by Female Funds**

This table reports panel regression results on the relation between female-managed funds and their holdings in female-led firms. A female-led firm is a firm with a female CEO in a given quarter. The main independent variable is *FemaleFund*, an indicator for funds with at least one female manager. The dependent variables capture a fund's exposure to female-led firms and are measured in three ways: an indicator for holding any female-led firm (Panel A), the percentage of fund holdings in female-led firms, scaled by fund TNA (Panel B) and by total equity holdings (Panel C). Fund controls are included in selected columns, and each panel reports specifications that vary control inclusion and fixed effects as shown. Variable definitions and regression control variables are provided in Appendix A.6. All independent variables are lagged by one quarter. *t*-statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. The sample period is Q1/2002 to Q2/2023.

	(1)	(2)	(3)	(4)
Panel A	Dependent Variable: Female Holdings > 0			
Female Fund	0.053*** (7.30)	0.050*** (6.97)	0.034*** (4.29)	0.030*** (3.90)
Fund Controls	No	No	Yes	Yes
FEs	time	time; fund style	time	time; fund style
Observations	130,584	129,956	122,326	122,099
Adj. R-squared	4.4%	5.1%	7.1%	8.2%
Panel B	Dependent Variable: %Female Holdings (over Fund TNA)			
Female Fund	0.126*** (2.76)	0.123*** (2.79)	0.156*** (3.26)	0.139*** (2.95)
Fund Controls	No	No	Yes	Yes
FEs	time	time; fund style	time	time; fund style
Observations	130,584	129,956	122,326	122,099
Adj. R-squared	20.9%	21.8%	22.6%	23.2%
Panel C	Dependent Variable: %Female Holdings (over Total Holdings)			
Female Fund	0.155** (2.51)	0.125** (2.07)	0.167** (2.50)	0.130** (1.99)
Fund Controls	No	No	Yes	Yes
FEs	time	time; fund style	time	time; fund style
Observations	130,584	129,956	122,326	122,099
Adj. R-squared	21.3%	22.1%	21.5%	22.6%

Table 3: DID Estimates of Holdings in Female-Led Firms by Female Funds

Full Sample: Hire Female Manager(s) from Any Fund

This table reports difference-in-differences (DID) estimates around female-manager appointments. Treated funds are 226 funds that hire at least one female manager between quarter -1 and quarter 0 , and matched controls are 662 funds that hire at least one male manager during the same period. *FemaleHire* is an indicator equal to one for treated funds and zero for matched control funds t . The event window spans quarters -4 to $+4$, with *Post* equal to one from quarter 0 through quarter $+4$. The dependent variables capture a fund's exposure to female-led firms and are measured in three ways: an indicator for holding any female-led firm (Columns (1)–(2)), the percentage of fund holdings in female-led firms, scaled by fund TNA (Columns (3)–(4)) and by total equity holdings (Columns (5)–(6)). All models include fund controls whose coefficients are omitted from the table for brevity, and each pair of columns varies the fixed effects as reported. Details on the matching procedure, variable definitions, and regression control variables are provided in Appendix A.6. Independent variables are lagged by one quarter. t -statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. The sample period is Q1/2002 to Q2/2023.

Dependent Variable	(1) Female Holdings > 0	(2) Female Holdings > 0	(3) %Female Holdings (over Fund TNA)	(4) %Female Holdings (over Fund TNA)	(5) %Female Holdings (over Total Holdings)	(6) %Female Holdings (over Total Holdings)
FemaleHire	-0.006 (-0.24)	-0.003 (-0.11)	-0.092 (-0.66)	-0.090 (-0.66)	-0.102 (-0.50)	-0.108 (-0.54)
Post	-0.042** (-2.53)	-0.043*** (-2.59)	-0.143 (-1.55)	-0.151 (-1.65)	-0.199 (-1.49)	-0.215 (-1.62)
FemaleHire $\times$ Post	0.048** (1.98)	0.049** (2.01)	0.314** (2.40)	0.330** (2.52)	0.349* (1.83)	0.380** (2.00)
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	5,298	5,294	5,298	5,294	5,298	5,294
Adj. R-squared	9.1%	10.8%	25.4%	26.2%	24.7%	26.4%

Table 4: **DID Estimates of Holdings in Female-led Firms by Female Funds****Sub-Sample: First Hire vs Second Hire**

This table reports difference-in-differences (DID) estimates around female-manager appointments separately for first female hires by all-male funds (Panel A) and additional female hires by mixed-gender funds which already have female representations. (Panel B). Treated funds hire at least one female manager between quarter -1 and quarter 0 , and matched controls hire at least one male manager during the same period. *FemaleHire* is an indicator equal to one for treated funds and zero for matched control funds t . The event window spans quarters -4 to $+4$, with *Post* equal to one from quarter 0 through quarter $+4$. The dependent variables capture a fund's exposure to female-led firms and are measured in three ways: an indicator for holding any female-led firm (Columns (1)–(2)), the percentage of fund holdings in female-led firms, scaled by fund TNA (Columns (3)–(4)) and by total equity holdings (Columns (5)–(6)). All models include fund controls whose coefficients are omitted from the table for brevity, and each pair of columns varies the fixed effects as reported. Details on the matching procedure, variable definitions, and regression control variables are provided in Appendix A.6. Independent variables are lagged by one quarter. t -statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. The sample period is Q1/2002 to Q2/2023.

Dependent Variable	(1) Female Holdings > 0	(2) Female Holdings > 0	(3) %Female Holdings (over Fund TNA)	(4) %Female Holdings (over Fund TNA)	(5) %Female Holdings (over Total Holdings)	(6) %Female Holdings (over Total Holdings)
Panel A: First Hire: Hire Female Manager(s) from an All-Male Fund						
FemaleHire	-0.001 (-0.02)	0.004 (0.17)	-0.015 (-0.10)	-0.004 (-0.03)	0.035 (0.16)	0.032 (0.15)
Post	-0.040** (-2.22)	-0.042** (-2.32)	-0.190* (-1.84)	-0.203** (-1.97)	-0.219 (-1.47)	-0.249* (-1.69)
FemaleHire $\times$ Post	0.050* (1.91)	0.050* (1.90)	0.410*** (2.93)	0.421*** (3.00)	0.431** (2.08)	0.457** (2.21)
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	4,782	4,778	4,782	4,778	4,782	4,778
Adj. R-squared	7.4%	9.2%	24.5%	25.3%	23.4%	25.3%
Panel B: Second Hire: Hire Female Manager(s) from a Mixed-Gender Fund						
FemaleHire	-0.044 (-0.90)	-0.066 (-1.43)	-0.186 (-0.60)	-0.252 (-0.84)	-0.438 (-0.94)	-0.536 (-1.21)
Post	-0.058* (-1.83)	-0.058* (-1.84)	-0.141 (-0.68)	-0.132 (-0.64)	-0.154 (-0.50)	-0.160 (-0.52)
FemaleHire $\times$ Post	0.040 (0.88)	0.033 (0.77)	-0.323 (-0.94)	-0.352 (-1.04)	-0.409 (-0.84)	-0.468 (-0.97)
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	1,086	1,086	1,086	1,086	1,086	1,086
Adj. R-squared	16.1%	22.9%	31.5%	32.4%	29.6%	31.4%

Table 5: **Holdings in Local Female-led Firms by Female Funds in the Same State**

This table reports panel regression results on the relation between female-managed funds and their holdings in local female-led firms. Local female-led firms are female-CEO firms headquartered in the same state as the fund. *FemaleFund* is an indicator for funds with at least one female manager. The dependent variables capture a fund's exposure to local female-led firms and are measured in three ways: an indicator for holding any local female-led firm (Columns (1)–(2)), the percentage of fund holdings in local female-led firms, scaled by fund TNA (Columns (3)–(4)) and by total equity holdings (Columns (5)–(6)). All models include fund controls whose coefficients are omitted from the table for brevity, and each pair of columns varies the fixed effects as reported. Variable definitions and regression control variables are provided in Appendix A.6. Independent variables are lagged by one quarter. *t*-statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. The sample period is Q1/2002 to Q2/2023.

Dependent Variable	(1) Local Female Holding > 0	(2) Local Female Holding time; fund style	(3) % Local Female Holdings (over Fund TNA)	(4) % Local Female Holdings (over Fund TNA) time; fund style	(5) % Local Female Holdings (over Total Holdings)	(6) % Local Female Holdings (over Total Holdings) time; fund style
Female Fund	0.006 (0.54)	0.007 (0.67)	0.036** (2.15)	0.037** (2.24)	0.043* (1.86)	0.044* (1.91)
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	122,326	122,099	118,531	118,413	118,531	118,413
Adj. R-squared	4.1%	4.4%	1.1%	1.2%	0.8%	0.9%

Table 6: **Reduction in Public Information Acquisition**

This table reports panel regression results on the relation between female-managed funds and their public information acquisition about female-led firms. A female-led firm is a firm with a female CEO in a given quarter. *FemaleFund* is an indicator for funds with at least one female manager. The dependent variables capture fund-level EDGAR search activity toward female-led firms and are measured in two ways: the percentage of a fund's total EDGAR searches directed toward female-led firms (Panel A) and female search intensity, defined as searches per female-led firm scaled by searches per male-led firm within the same fund-quarter (Panel B). Fund controls are included in selected columns, and each panel reports specifications that vary control inclusion and fixed effects as shown. Variable definitions and regression control variables are provided in Appendix A.6. All independent variables are lagged by one quarter. *t*-statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. Given the data availability on EDGAR log files, the sample period is Q1/2007 to Q2/2023.

	(1)	(2)	(3)	(4)
Panel A	Dependent Variable: % Female Search			
Female Fund	-0.272* (-1.84)	-0.273* (-1.87)	-0.265* (-1.71)	-0.269* (-1.80)
Fund Controls	No	No	Yes	Yes
FEs	time	time; fund style	time	time; fund style
Observations	9,274	9,274	9,046	9,046
Adj. R^2	7.1%	7.1%	8.1%	8.2%
Panel B	Dependent Variable: Female Search Intensity			
Female Fund	-0.070*** (-2.74)	-0.073*** (-2.84)	-0.060** (-2.25)	-0.063** (-2.41)
Fund Controls	No	No	Yes	Yes
FEs	time	time; fund style	time	time; fund style
Observations	8,821	8,821	8,601	8,601
Adj. R^2	4.8%	4.8%	5.7%	5.9%

Table 7: **Substitution of Public Information Acquisition**

This table reports panel regression results on the relation between female-managed funds and their public information acquisition about local female-led firms. Local female-led firms are female-CEO firms headquartered in the same state as the fund. *FemaleFund* is an indicator for funds with at least one female manager. The dependent variable is the percentage of a fund's total EDGAR searches directed toward local female-led firms. Fund controls are included in selected columns, and the specifications vary control inclusion and fixed effects as shown. Variable definitions and regression control variables are provided in Appendix A.6. All independent variables are lagged by one quarter. *t*-statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. Given the data availability on EDGAR log files, the sample period is Q1/2007 to Q2/2023.

	(1)	(2)	(3)	(4)
	Dependent Variable: % Local Female Search			
Female Fund	-5.008*** (-3.12)	-5.395*** (-2.79)	-3.892** (-2.44)	-3.952** (-2.22)
Fund Controls	No	No	Yes	Yes
FEs	time	time; fund style	time	time; fund style
Observations	5,893	5,893	5,752	5,752
Adj. R^2	0.9%	1.0%	1.1%	1.1%

Table 8: **ESG Scores of Female-Led Firms Held by Female-Managed Funds**

This table reports panel regression results on the relation between female-managed funds and ESG profiles of the female-led stocks in their equity portfolios. A female-led firm is a firm with a female CEO in a given quarter. The main independent variable is *FemaleFund*, an indicator for funds with at least one female manager. The dependent variables are fund-level value-weighted ESG scores of female-led stocks held in a fund's equity portfolio and measured in three ways: Social-category ESG scores (Columns (1)–(2)), overall ESG scores across all categories (Columns (3)–(4)), and ESG scores across all categories excluding corporate governance (Columns (5)–(6)). All models include fund controls whose coefficients are omitted from the table for brevity, and each pair of columns varies the fixed effects as reported. Details on ESG construction, variable definitions, and regression control variables are provided in Appendix A.6. All independent variables are lagged by one quarter. *t*-statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. The sample period is Q1/2003 to Q2/2023.

Dependent Variable	(1) Fund ESG - Social across Female-led Firms	(2) Fund ESG - Social across Female-led Firms	(3) Fund ESG - All across Female-led Firms	(4) Fund ESG - All across Female-led Firms	(5) Fund ESG - ExGov across Female-led Firms	(6) Fund ESG - ExGov across Female-led Firms
Female Fund	0.074 (1.17)	0.088 (1.39)	0.071 (0.82)	0.104 (1.24)	0.050 (0.64)	0.078 (1.02)
Fund Controls	Yes	Yes	Yes	Yes	Yes	Yes
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	101,294	101,069	101,294	101,069	101,294	101,069
Adj. R-squared	17.0%	17.3%	16.5%	17.3%	15.3%	16.0%

Table 9: **Exposure to Female-Led Firms and Fund Performance**

This table reports panel regression results on the relation between female-managed funds and next-quarter fund performance when funds have relatively high exposure to female-led firms. A female-led firm is a firm with a female CEO in a given quarter. *FemaleFund* is an indicator for funds with at least one female manager. *%hold_FemStock_Q3* is an indicator equal to one for funds whose holdings of female-led firms, scaled by fund TNA, are in the top tercile, and zero otherwise. The dependent variables are next-quarter DGTW excess return following (Daniel et al., 1997) (Panel A) and next-quarter market-adjusted alpha (Panel B). All models include fund controls whose coefficients are omitted from the table for brevity, and each pair of columns varies the fixed effects as reported. Variable definitions including performance measures and regression control variables are provided in Appendix A.6. All independent variables are lagged by one quarter. *t*-statistics based on fund-clustered standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels. The sample period is Q1/2002 to Q2/2023.

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A	Dependent Variable: Fund Quarterly DGTW Excess Return (%)					
Female Fund	-0.023 (-1.32)	-0.026 (-1.52)			-0.030 (-1.38)	-0.036* (-1.65)
%hold_FemStock_Q3			-0.026* (-1.79)	-0.024* (-1.67)	-0.031* (-1.82)	-0.031* (-1.81)
Female Fund $\times$ %hold_FemStock_Q3					0.024 (0.69)	0.031 (0.90)
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	122,321	122,094	122,321	122,094	122,321	122,094
Adj. R-squared	8.3%	8.4%	8.3%	8.4%	8.3%	8.4%
Panel B	Dependent Variable: Fund Quarterly Market-adj. Alpha (%)					
Female Fund	-0.026 (-0.99)	-0.026 (-0.96)			-0.050 (-1.53)	-0.054* (-1.67)
%hold_FemStock_Q3			0.009 (0.39)	0.018 (0.82)	-0.007 (-0.28)	-0.001 (-0.04)
Female Fund $\times$ %hold_FemStock_Q3					0.069 (1.39)	0.082 (1.64)
FEs	time	time; fund style	time	time; fund style	time	time; fund style
Observations	111,157	111,142	111,157	111,142	111,157	111,142
Adj. R-squared	12.2%	12.3%	12.2%	12.3%	12.2%	12.3%

Internet Appendix

This internet appendix provides additional results and data details to supplement the main text. Appendix A provides details on data sources used in this study, while Appendix B contains supplementary test results.

A Additional Data Construction Details

A.1 Mutual Fund Data

We obtain mutual fund returns and characteristics from the CRSP Survivor-Bias-Free Mutual Fund Database, including total net assets (TNA), net returns, turnover ratios, and expense ratios. Because CRSP reports many variables at the share-class level, we aggregate share classes to the portfolio level using the WRDS MFLINKS tables. Fund TNA is the sum of TNA across share classes, while returns, turnover ratios, and expense ratios are aggregated using TNA weights. Fund age is measured using the oldest share class linked to the fund. We compute quarterly fund returns by compounding monthly net returns over the quarter, quarterly total risk as the standard deviation of daily net returns over the quarter, and quarterly flows using the standard change-in-TNA formulation net of returns.

Quarterly holdings are obtained from the Thomson Reuters S12 mutual fund holdings database. We merge Thomson holdings to CRSP portfolio-level fund identifiers using the WRDS MFLINKS tables. To construct our sample, we focus on actively managed U.S. equity mutual funds, excluding index funds using CRSP/Lipper objective codes, index-fund flags, and fund names. We further exclude sector funds and funds holding, on average, less than 80% in common stocks. To address omission bias and incubation bias, we exclude funds without a valid organization year and observations reported before the fund’s organization year.

A.2 Manager Data

Manager identities and characteristics are obtained from Morningstar Direct. Morningstar provides manager names, manager histories, and manager genders for many observations. For managers with missing gender information, we supplement Morningstar using Namsor. We then construct fund-level manager variables each quarter, including the number of managers, average manager experience, and average manager tenure with the fund. A fund is classified as *female-managed* if at least one member of the management team is female.

A.3 Firm and CEO Data

We obtain stock returns, prices, shares outstanding, and other standard firm-level variables from CRSP and accounting data from Compustat. CEO gender is obtained from ExecuComp. To study geographic proximity, we identify firm headquarters using 10-X Header Data from the Notre Dame Software Repository for Accounting and Finance (SRAF), supplemented where necessary with CRSP and Compustat location fields.

A.4 EDGAR Log Files

We use SEC EDGAR server logs (available until June 2017) to measure fund-level public-information acquisition. Each EDGAR observation records the filing requested, the request time, and the masked IP address of the requester. We match IP-address blocks to mutual fund organizations and link requested filings to public firms using CIK identifiers. Because the raw logs contain automated bot activity, we exclude likely bots following the

filtering procedure described in Appendix A.4.1. In the main text, we use these data to construct fund-level measures of filing-download activity directed to female-led firms.

A.4.1 Unmasking IP addresses in EDGAR Log Files

The EDGAR Log Files contain billions of observations of “requests” or “requests to view a filing.” Each observation details the filing requested (accession number), the date and time of the request, and the requester (the IP address making the electronic request). A snapshot of the raw EDGAR Log Files is shown below:

IP Address	Date	Time	CIK	Accession Number
38.97.91.ecg	20170531	09:47:33	051143	000104746917001061
38.65.241.fhf	20170531	11:07:28	274191	000002741917000008
67.199.249.igg	20170924	12:27:02	320193	000032019317000009
216.223.41.aah	20170924	16:12:55	831259	000083125917000016

Given our focus in this paper on stock (CIK) and the requester, linking the masked IP addresses to identifiable investors (e.g., mutual fund families) is pivotal to our study. To unmask the IP addresses, we first notice the fourth octet in the examples above.¹ In place of the actual digits of the requesting IP address, the fourth octet is reported as a set of three letters. However, organizations typically register blocks of IP addresses, with the most common block fixing the first three octets and containing all 256 versions of the fourth octet.² In other words, only the first three octets are necessary to identify the organization that has registered that block of IP addresses.

¹For IP addresses, an *octet* is a group of eight bits, or the one to three digit numbers (from 0 to 255) separated by periods in the examples above.

²For example, all 256 IP addresses beginning with 38.97.91 will be registered to the same organization.

Using this insight, we downloaded historical IP address registration records from 2010 through 2017 to identify the blocks of IP addresses registered to investment firms.³ Then, using this hand-collected mapping between investment firms and IP addresses, we unmask the requesters in the EDGAR Log Files. As a result, the snapshot of raw data from above has been transformed into the following.

Investment Firm	Date	Time	Ticker	Filing
Abrams Capital	20170531	09:47:33	IBM	10-K for 2016
Harbor Capital	20170531	11:07:28	TGT	10-K for 2016
Crabel Capital	20170924	12:27:02	AAPL	10-Q for Q2 2017
Ronin Capital	20170924	16:12:55	FCX	Earnings for Q2 2017

Furthermore, the three letters used to mask the fourth octet is static, not dynamic. This means, for example, that *def* replaces the digits 146 for every instance of 146. This allows us to identify unique IP addresses. In other words, though an unmasked mutual fund may make 50 requests one day, we can observe how many different IP addresses made those requests. This insight is particularly important as it allows us to calculate the variable *IPs* that we use throughout the paper.

We have also adjusted the data to remove likely bots. As mentioned, the raw EDGAR Log Files contain billions of requests with many thousands of requests per day coming from single IP addresses. It is unlikely that these thousands of requests per day represent a human actually clicking on documents in EDGAR. It is much more likely that they represent computer programs (bots) downloading large quantities of data at a time. Given these IP

³IP registration records were acquired from MaxMind, <https://www.maxmind.com/en/home>.

addresses do not fit with the spirit of our research, we remove them from the data. The removal process is as follows: we remove IP addresses that either (i) make over 1,000 requests in a day or (ii) make requests for over 100 different CIKs (i.e., firms).

A.5 Main Dependent Variable Definitions

Our main explanatory variable is *Female Fund*, an indicator equal to one if a fund's management team includes at least one female manager. Our main dependent variables represent a fund's exposure to female-led firms, which are defined as firms with female CEOs. We measure a fund's exposure to female-led firms in three alternative ways. The first measure is *Female Holdings* > 0 , which is an indicator that equals one if a fund holds a positive position in a female-led firm. The second measure is *%Female Holdings (over Fund TNA)*, which is a percentage rate of a fund's total equity holdings in female-led firms to that fund's total net assets under management. That is,

$$\%Female Holdings (over Fund TNA) = \frac{\sum_{i=1}^{NFem} hold_i}{fund TNA} \cdot 100 \quad (6)$$

where $hold_i$ is the equity holdings in a firm i , which is calculated as the share holdings of stock i multiplied by the stock's price. $NFem$ is the total number of female-led firms held in a fund's equity portfolio. $fund TNA$ is a fund's total net asset under management.

The third measure is *%Female Holdings (over Total Holdings)*, which is a percentage rate of a fund's total equity holdings in female-led firms to that fund's total equity holdings. That is,

$$\%Female\ Holdings\ (over\ Total\ Holdings) = \frac{\sum_{i=1}^{NFem} hold_i}{\sum_{i=1}^N hold_i} \cdot 100 \quad (7)$$

where $hold_i$ is the equity holdings in a firm i , which is calculated as the share holdings of stock i multiplied by the stock's price. $NFem$ is the total number of female-led firms held in a fund's equity portfolio. N is the total number of firms held in a fund's equity portfolio.

For the mechanism tests, we construct a same-state proximity indicator between a fund and a female-led firm, as well as two EDGAR-based measures: (i) the percentage of a fund's total filing-download activity directed to female-led firms and (ii) search intensity for female-led firms relative to male-led firms.

A.6 Variable Details

All continuous variables are winsorized at the 1st and the 99th percentiles.

Variable	Description
Female-managed Fund	
Female Fund	Measured at fund-quarter level
Number of Female Managers	Main independent variable. An indicator equal to one if a fund's management team includes at least one female manager and zero otherwise.
%Female Managers	Total number of female managers managing a fund portfolio. A percentage rate of the total number of female managers to the total number of fund managers managing a fund portfolio. $\frac{\text{Number of Female Managers}}{\text{Number of Managers}} \cdot 100$
Female-led Firm	
Female Stock	Measured at stock-quarter level
	An indicator equal to one if a firm has a female CEO in a given quarter and zero otherwise.
Portfolio Exposure to Female-led Firms	
Total Equity Holdings	Measured at fund-quarter level
Total Female Equity Holdings	A fund's total equity holdings. $\sum_{i=1}^N \text{hold}_i$, where $\text{hold}_i = \text{sharesheld} \times \text{stockprice}$ is the equity holdings in a firm i . N is the total number of firms held in a fund's equity portfolio.
Female Exposure	a fund's total equity holdings in female-led firms. $\sum_{i=1}^{NFem} \text{hold}_i$, where $\text{hold}_i = \text{shares held} \times \text{stock price}$ is the equity holdings in a firm i . $NFem$ is the total number of female-led firms held in a fund's equity portfolio.
Female Holdings > 0	Regression dependent variable, denoted as <i>FemaleExposure</i> , for a fund's exposure to female-led firms. It is measured using <i>Female Holdings > 0</i> , <i>%Female Holdings (over Fund TNA)</i> , or <i>%Female Holdings (over Total Holdings)</i> , depending on the specification.
%Female Holdings (over Fund TNA)	Main dependent variable. An indicator equal to one if a fund holds a positive position in female-led firms. A positive position is defined as a positive equity holding. Female-led firm is a firm with a female CEO.
%Female Holdings (over Total Holdings)	Main dependent variable. A percentage rate of a fund's total equity holdings in female-led firms to that fund's total net assets under management. $\frac{\text{Total Female Equity Holdings}}{\text{fund TNA}} \cdot 100 = \frac{\sum_{i=1}^{NFem} \text{hold}_i}{\text{fund TNA}} \cdot 100$, where $\text{hold}_i = \text{shares held} \times \text{stock price}$ is the equity holdings in a firm i . $NFem$ is the total number of female-led firms held in a fund's equity portfolio. <i>fund TNA</i> is a fund's total net asset under management.
%hold_FemStock_Q3	Main dependent variable. A percentage rate of a fund's total equity holdings in female-led firms to that fund's total equity holdings. $\frac{\text{Total Female Equity Holdings}}{\text{Total Equity Holdings}} \cdot 100 = \frac{\sum_{i=1}^{NFem} \text{hold}_i}{\sum_{i=1}^N \text{hold}_i} \cdot 100$, where $\text{hold}_i = \text{shares held} \times \text{stock price}$ is the equity holdings in a firm i . $NFem$ is the total number of female-led firms held in a fund's equity portfolio. N is the total number of firms held in a fund's equity portfolio.
Number of Female-Led Firms	An indicator equal to one if a fund's percentage holdings in female-led firms, scaled by fund TNA, are in the top tercile and zero otherwise.
%Female-Led Firms	Total number of female-led firms held in a fund portfolio. Female-led firm is a firm with a female CEO. A percentage rate of the total number of female-led firms held in a fund portfolio to the total number of firms held by that fund. A female-led firm is a firm with a female CEO. $\frac{\text{Number of Female-Led Firms}}{\text{Number of Firms}} \cdot 100$
Local Portfolio Exposure to Female-led Firms	
	Measured at fund-quarter level for female-led firms headquartered in the same state as the fund.

Local Female Exposure	Regression dependent variable, denoted as <i>LocalFemaleExposure</i> , for a fund's exposure to local female-led firms. A local female-led firm is identified as a female-led firm headquartered in the same state as the fund's headquarters. It is measured using <i>Local Female Holdings</i> > 0, <i>%Local Female Holdings (over Fund TNA)</i> , or <i>%Local Female Holdings (over Total Holdings)</i> , depending on the specification.
Local Female Holdings > 0	An indicator equal to one if a fund holds a positive position in at least one female-led firm headquartered in the same state as the fund's headquarters and zero otherwise.
%Local Female Holdings (over Fund TNA)	A percentage rate of a fund's total equity holdings in local female-led firms to that fund's total net assets under management. $\frac{\sum_{i=1}^{NLocalFem} hold_i}{fund\ TNA} \cdot 100$, where $hold_i$ = shares held $\times$ stock price is the equity holdings in a local female-led firm i . <i>NLocalFem</i> is the total number of local female-led firms held in a fund's equity portfolio.
%Local Female Holdings (over Total Holdings)	A percentage rate of a fund's total equity holdings in local female-led firms to that fund's total equity holdings. $\frac{\sum_{i=1}^{NLocalFem} hold_i}{\sum_{i=1}^N hold_i} \cdot 100$, where $hold_i$ = shares held $\times$ stock price is the equity holdings in a firm i . <i>NLocalFem</i> is the total number of local female-led firms held in a fund's equity portfolio. N is the total number of firms held in a fund's equity portfolio.
Manager Hire Event Variables	Measured at fund-event-quarter level in the difference-in-differences tests.
FemaleHire	An indicator equal to one for treated funds that appoint at least one female manager between quarter -1 and quarter 0 and zero for matched control funds that appoint at least one male manager during the same period. Each treated fund is matched up to five control funds based on lagged matching characteristics, including the same fund style, similar team size (the same number of managers or a difference of one manager), and the same terciles of fund size, fund flows, fund returns, and fund equity holdings in female-led firms.
Post	An indicator equal to one for the hiring quarter and post-event quarters (0 to $+4$) and zero for pre-event quarters (-4 to -1).
FemaleHire $\times$ Post	The interaction between <i>FemaleHire</i> and <i>Post</i> . Its coefficient captures the change in exposure to female-led firms following a female-manager appointment relative to matched funds that appoint a male manager.
Public Information Acquisition	Measured at fund-quarter level using EDGAR filing-download activity.
%Female Search	A percentage rate of a fund's total EDGAR searches directed toward female-led firms.
Female Search Intensity	The average number of EDGAR searches per female-led firm scaled by the average number of EDGAR searches per male-led firm within the same fund and quarter.
%Local Female Search	A percentage rate of a fund's total EDGAR searches directed toward local female-led firms headquartered in the same state as the fund's headquarters.
ESG Scores of Female-Led Firms	Measured at the fund-quarter level for female-led stocks held in a fund's equity portfolio.
Fund ESG Scores of Female-Led Firms	Regression dependent variables, denoted as <i>FemaleESG</i> , measuring a fund-level ESG score for the female-led stocks held in the fund's equity portfolio. For holdings observed in calendar year t , we use firm-level ESG scores from calendar year $t-1$ to avoid look-ahead bias. Before aggregation, we size-adjust firm ESG scores each quarter by sorting all stocks into ten deciles based on quarter-end market capitalization and subtracting the average ESG score of firms in the same size decile. Fund-level ESG measures are value-weighted averages of these size-adjusted scores across the female-led stocks held by the fund and are constructed using one of the three ESG profiles below.
Fund ESG of Female-Led Firms - Social	The value-weighted average of size-adjusted firm-level Social-category ESG scores across female-led stocks held in the fund's equity portfolio.
Fund ESG of Female-Led Firms - All	The value-weighted average of size-adjusted firm-level overall ESG scores across female-led stocks held in the fund's equity portfolio, where the firm-level ESG score is based on all ESG categories.

Fund ESG of Female-Led Firms - ExGov	The value-weighted average of size-adjusted firm-level ESG scores across female-led stocks held in the fund's equity portfolio, where the firm-level ESG score is based on all ESG categories except corporate governance.
Fund Performance Measures	Measured at fund-quarter level.
Fund Quarterly DGTW Excess Return (%)	The value-weighted average of a fund's stock-level quarterly excess returns relative to characteristic-matched benchmarks following (Daniel et al., 1997).
Fund Quarterly Market-adj. Alpha (%)	A fund's Jensen's alpha after adjusting for market exposure using the CAPM.
Control Variables	Fund and manager characteristics measured at the fund-quarter level.
Annual Expense Ratio	Fund expense ratio as of fiscal year-end.
Annual Turnover Ratio	Fund turnover ratio.
Total Net Assets (TNA)	Fund total net assets under management aggregated at the fund portfolio level. <i>In logarithmic and squared-logarithmic forms as fund controls in regression tables.</i>
Fund Age (year)	The number of years since a fund is first reported in CRSP. <i>In logarithmic form as a fund control in regression tables.</i>
Quarterly Flow	The change in log TNA not attributable to the portfolio return of the fund (POLLET and WILSON, 2008). $\frac{TNA_t - TNA_{t-1} \times (1 + R_t)}{TNA_{t-1}}$
Quarterly Net Return	Fund return net of expenses as of quarter end.
Quarterly Total Risk	Standard deviation of fund daily net return over the past 3 months.
Number of Managers	Team size. The total number of fund managers managing a fund portfolio.
Manager Experience	The average number of years since a manager first appeared in the Morningstar database. <i>In logarithmic form as a fund control in regression tables.</i>
Manager Tenure	The average number of years since a manager was hired by the fund. <i>In logarithmic form as a fund control in regression tables.</i>
Stock and Firm Characteristics	Measured at stock-quarter level and used only in the supplementary tests in Appendix B.
Total Equity Holdings by Funds (\$ millions)	Total dollar holdings of a stock by all sample funds.
Total Equity Holdings by Female Funds (\$ millions)	Total dollar holdings of a stock by female-managed funds.
%Female Holdings (over Firm Size)	A percentage rate of holdings by female-managed funds in a stock to the stock's market capitalization.
%Female Holdings (over Total Fund Holdings)	A percentage rate of holdings by female-managed funds in a stock to total fund holdings in that stock.
Firm Size (\$ millions)	Stock market capitalization.
Stock Turnover	Stock turnover ratio.
Bid-Ask Spread	Stock bid-ask spread.
Earnings Ratio	Firm earnings ratio.
Stock Quarterly Return (%)	Stock buy-and-hold return over a quarter.
Stock Quarterly DGTW Excess Return (%)	Stock quarterly return relative to a characteristic-matched benchmark following (Daniel et al., 1997).
Stock Quarterly Risk	Stock quarterly return volatility.

B Supplementary Tests

This appendix presents additional tests that complement the main results reported in the paper. It includes three supplementary figures and two supplementary tables.

Figure B1 plots the distribution of the number of calendar days between each manager hire event and the quarter-end date. Figure 5 plots event-time dynamics around the hire and shows that the treated and control funds display broadly similar pre-trends in the quarters leading up to the appointment at the hire quarter of 0. Figure B1 reinforces that manager hires happen over the quarter, which allows female managers to make investment decisions from quarter 0.

Figure B2 and B3 present evidence that female-manager tilt toward female-led firms is not driven by industry concentration. Figure B2 presents the distribution of total equity holdings by female and male funds within SIC 3-digit industries, and Figure B3 presents a scatter plot at the SIC 3-digit industry level, showing that the female-manager tilt toward female-led firms is not affected by the share of female firm representations within a given industry.

Table B1 reports mean differences in fund and manager characteristics between female-managed and male-managed funds. Table 1 in the main text reports summary statistics for the same variables by pooling female- and male-managed funds together. In Table B1, we separate the two groups and report the differences in means between female-managed and male-managed funds. Figure 2 in the main text visually illustrates these differences for selected variables using a dot-and-whisker plot.

Table B2 reports descriptive evidence on mean differences in firm characteristics between

female-led and male-led firms at the stock level.

Figure B1: Timing of Manager Hire Events Relative to Quarter-End

This figure plots the timing of manager hire events used in the DID regressions, measured as calendar days before quarter-end. Blue dots represent manager-hire observations, and stacked dots indicate multiple hires on the same relative day. The red dashed vertical line marks the 20-day cutoff before quarter-end, and 18.69% of hires occur within 20 days before quarter-end. Day 0 is the quarter-end date, on which 11.82% of hires occur. The sample period is Q1/2002 to Q2/2023.

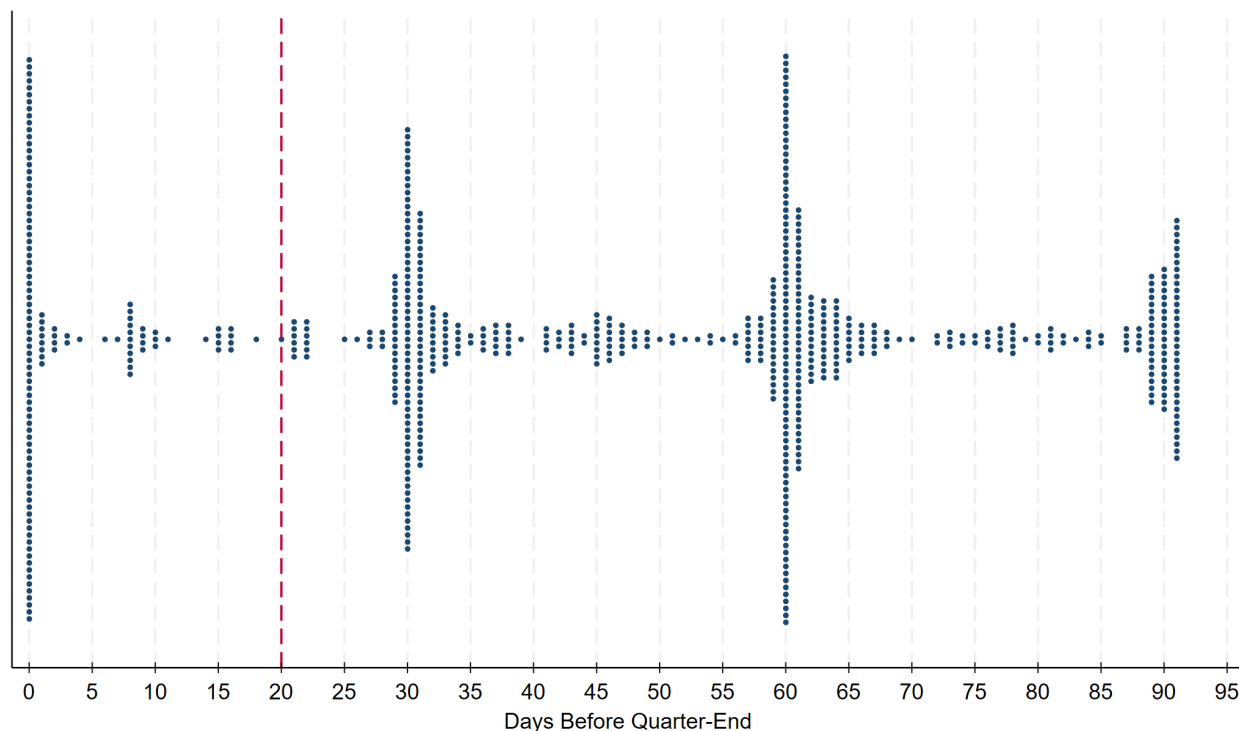


Figure B2: Industry Distribution of Equity Holdings by Female and Male Funds

This figure plots the distribution of total equity holdings across SIC 3-digit industries for female- and male-managed funds. A female-managed fund has at least one female manager and a male-managed fund has only male managers. Bars report *% Total Equity Holdings*, defined as a group's equity holdings in an industry divided by its equity holdings across all industries. Blue bars are male-managed funds and red bars are female-managed funds. Industries in the *x*-axis are sorted by the female-managed-fund share. The full sample includes 309 SIC 3-digit industries with mutual fund investment while for readability, the figure displays only the 23 industries where female-managed funds allocate more than 1% of their total equity holdings. Aggregate equity holdings are \$36,800 billion for female-managed funds and \$88,700 billion for male-managed funds. The sample period is Q1/2002 to Q2/2023.

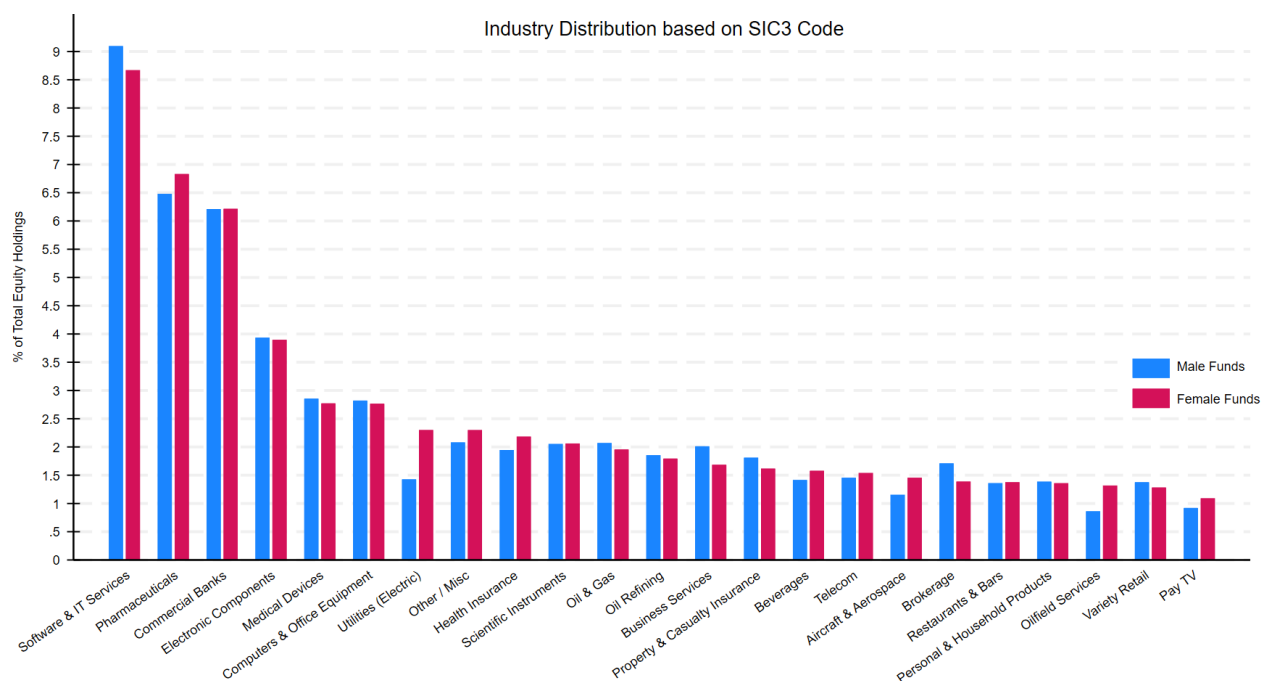


Figure B3: Difference in %Holdings in Female-Led Firms at SIC3 Industry Level

This figure plots SIC 3-digit industry-level differences in holdings of female-led firms between female- and male-managed funds. The y -axis reports female-minus-male differences in the percentage of fund holdings invested in female-led firms within an industry. The x -axis reports industry-level female-led firm representation. In Panel A, female-led firm representation is based on market capitalization, defined as female-led firms' market capitalization in an industry divided by the market capitalization of female-led firms across all industries. In Panel B, female-led firm representation is based on firm counts, defined as the number of female-led firms in an industry divided by the number of female-led firms across all industries. Each blue X marker represents one of the 142 SIC 3-digit industries where mutual funds invest in female-led firms. Industry names are shown when the absolute female-minus-male holdings difference exceeds 3% (i.e., $> 3\%$ or $< -3\%$). The red fitted line summarizes the cross-sectional relation between industry-level female-led firm representation and the female-minus-male holdings difference. Industries in the top 1% of the x -axis variable are excluded to mitigate the influence of extreme observations and outliers. The sample period is Q1/2002 to Q2/2023.

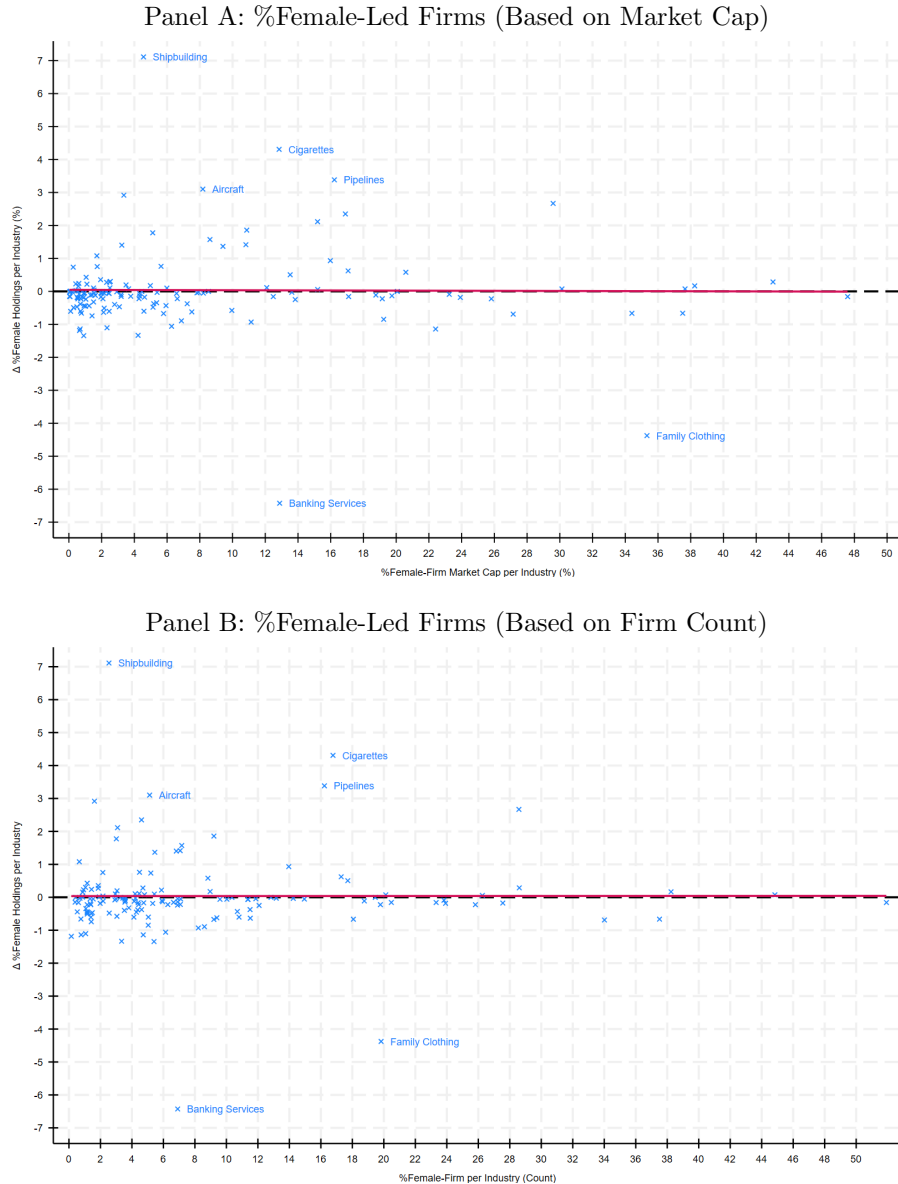


Table B1: **Mean Differences between Female- and Male-Managed Funds**

This table reports mean differences between female- and male-managed funds for variables used in the main analyses. A female-managed fund is a fund whose management team includes at least one female manager, and a male-managed fund is a fund whose managers are all male. Panel A reports portfolio exposure to female-led firms, where a female-led firm is a firm with a female CEO in a given quarter. Panels B and C report manager and fund characteristics, respectively. Columns (1) and (2) report group means, and Column (3) reports the female-minus-male difference. All continuous variables are winsorized at the 1st and 99th percentiles. Variable definitions are provided in Appendix A.6. The sample period is Q1/2002 to Q2/2023.

	(1) Female Fund	(2) Male Fund	(3) Difference: Female—Male
Panel A: Portfolio Exposure to Female-Led Firms			
Total Equity Holdings (\$ millions)	1294.89	1012.23	282.661***
Total Female Equity Holdings (\$ millions)	52.18	34.96	17.222***
%Female Holdings (over Fund TNA)	2.62	2.45	0.171***
%Female Holdings (over Total Holdings)	3.76	3.54	0.220***
Number of Female-Led Firms	4.619	3.423	1.196***
%Female-Led Firms	4.07	3.80	0.271***
Panel B: Manager Characteristics			
Number of Managers	4.50	2.38	2.125***
Manager Experience (year)	10.52	11.38	-0.870***
Manager Tenure (year)	5.81	6.76	-0.949***
Panel C: Fund Characteristics			
Annual Expense Ratio	0.01	0.01	-0.000***
Annual Turnover Ratio	0.69	0.73	-0.037***
Total Net Assets (\$ millions)	1856.17	1458.46	397.705***
Fund Age (year)	17.11	16.28	0.827***
Quarterly Flow (%)	0.50	0.70	-0.199**
Quarterly Net Return (%)	2.28	2.30	-0.024
Quarterly Total Risk (%)	0.02	0.02	0.000***

Table B2: Mean Differences between Female- and Male-Led Firms

This table reports mean differences between female- and male-led firms. A female-led (male-led) firm is a firm with a female (male) CEO in a given quarter. Panel A uses the full sample of stocks. Panel B restricts to stocks heavily held by female-managed funds, defined as stocks in the top quintile of female-managed-fund holdings scaled by stock market capitalization, and Panel C includes stocks in the remaining four quintiles. In all panels, Columns (1) and (2) report group means for female- and male-led firms, respectively, and Column (3) reports female-minus-male differences. All continuous variables are winsorized at the 1st and 99th percentiles. Variable definitions are provided in Appendix A.6. The sample period is Q1/2002 to Q2/2023.

	Female Stock	Male Stock	Difference: Female–Male
Panel A: Full Sample of Stocks (Obs. 148,884)			
Total Equity Holdings by Funds (\$ millions)	1113.43	1054.31	59.122**
Total Equity Holdings by Female Funds (\$ millions)	428.89	327.32	101.575***
%Female Holdings (over Firm Size)	3.88	3.73	0.156***
%Female Holdings (over Total Fund Holdings)	28.83	26.4	2.432***
Firm Size (\$ mil.)	10916.92	9109.67	1807.249***
Stock Turnover	0.46	0.44	0.015***
Bid–Ask Spread	-5.55	-5.18	-0.371***
Earnings Ratio	0.02	0.02	0.001***
Stock Quarterly Return (%)	3.4	3.47	-0.067
Stock Quarterly DGTW Excess Return (%)	0.39	0.56	-0.17
Stock Quarterly Risk	0.03	0.02	0
Panel B: Stocks heavily held by female funds (Q5) (Obs. 29,759)			
Total Equity Holdings by Funds (\$ millions)	1596.97	1190.4	406.575***
Total Equity Holdings by Female Funds (\$ millions)	809.36	519.78	289.577***
%Female Holdings (over Firm Size)	8.68	8.73	-0.049
%Female Holdings (over Total Fund Holdings)	46.86	43.27	3.584***
Firm Size (\$ mil.)	9853.11	6901.33	2951.782***
Stock Turnover	0.49	0.47	0.021***
Bid–Ask Spread	-7.4	-5.89	-1.510***
Earnings Ratio	0.02	0.02	0.001
Stock Quarterly Return (%)	3.36	3.08	0.284
Stock Quarterly DGTW Excess Return (%)	0.42	0.13	0.287
Stock Quarterly Risk	0.02	0.02	0
Panel C: Stocks not heavily held by female funds (Q1 - Q4) (Obs. 119,125)			
Total Equity Holdings by Funds (\$ millions)	976.79	1020.5	-43.712
Total Equity Holdings by Female Funds (\$ millions)	321.37	279.5	41.873***
%Female Holdings (over Firm Size)	2.53	2.48	0.043*
%Female Holdings (over Total Fund Holdings)	23.73	22.2	1.530***
Firm Size (\$ mil.)	11217.54	9658.3	1559.238***
Stock Turnover	0.45	0.44	0.013***
Bid–Ask Spread	-5.03	-5	-0.025
Earnings Ratio	0.02	0.02	0.001***
Stock Quarterly Return (%)	3.41	3.56	-0.153
Stock Quarterly DGTW Excess Return (%)	0.38	0.67	-0.287
Stock Quarterly Risk	0.03	0.03	0