

Do Public ESG Concerns Drive Mutual Fund Flows?

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Abstract

This study examines how time-varying public concerns about environmental, social, and governance (ESG) issues affect mutual fund flows. We construct a Google-based ESG Concerns Index to capture fluctuations in public attention to ESG matters and calculate fund-level ESG scores based on portfolio holdings. Our results show that during periods of heightened ESG concerns, funds with higher ESG scores attract relatively greater inflows than low-ESG funds. This relationship disappears when concerns subside. The effect is primarily driven by reduced allocations to low-ESG funds rather than increased allocations to high-ESG funds and is most pronounced among funds with a larger share of institutional investors. Furthermore, funds with greater institutional ownership maintain higher ESG scores, particularly during periods of elevated public concerns.

Keywords: ESG, Public attention, Mutual fund flows, Sustainable investing

JEL Codes: G11, G23

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1 Introduction

Sustainable investing has moved into the mainstream as ESG considerations have become increasingly important. Recent global surveys show that asset owners increasingly view ESG factors as financially material and commit a growing share of their portfolios to ESG strategies.¹ Reflecting this trend, recent theoretical research incorporates ESG into models of asset pricing and portfolio choice, showing that investor ESG preferences and shifts in sustainability concerns can affect equilibrium asset prices and expected returns (Pedersen et al., 2021; Pástor et al., 2021).

As ESG considerations become more widely adopted, they increasingly shape expectations about investors’ sustainability-related behavior. A recent illustration is Dutch pension fund PFZW’s decision to scale back mandates with BlackRock, raising concerns about the manager’s voting record on sustainability issues amid heightened ESG-related activism. More broadly, when ESG issues attract greater scrutiny from the media, regulators, and stakeholders, the reputational costs of low-ESG exposure rise, prompting capital reallocation toward more ESG-aligned investments. Flammer (2013) shows that investor punishment for eco-harmful behavior intensifies in more recent periods, coinciding with heightened media scrutiny and stronger environmental regulation.

Importantly, the ESG context is not constant but varies with fluctuations in public attention to ESG issues (which we refer to as “ESG concerns”).² Baker et al. (2024) provide direct evidence that investors’ willingness to pay for ESG-related fund attributes fluctuates over time. Such dynamics appear to be shaped by media narratives, public discourse, and

¹The Morningstar Voice of the Asset Owner Survey 2024 reports that 67% of global asset owners view ESG factors as more material than five years ago, with the share allocating more than half of their portfolios to ESG strategies rising from 29% in 2022 to 35% in 2024. In addition, the LSEG 2024 Global Asset Owner Survey disclose that 74% of asset owners are incorporating ESG considerations and that more than half are expanding their internal resources for ESG regulation, which is now widely viewed as supportive of sustainable investment goals.

²We use the term “ESG concerns” to capture fluctuations in public search intensity for ESG-related issues. We prefer this label because search activity is more likely to increase when individuals are concerned about an issue. For example, searches related to global warming spike during periods of extreme temperatures (Choi et al., 2020)

salient external events (Jaiswal et al., 2025; Pelster et al., 2024; Brulle et al., 2012). Complementing this evidence, Pástor et al. (2021) theorize that unexpected increases in ESG concerns can lead to the outperformance of green assets relative to brown assets, driven by investors’ willingness to accept lower discount rates and their expectations of higher future cash flows from ESG-aligned firms. A growing body of empirical evidence supports these predictions, documenting that periods of heightened climate or ESG concerns are associated with superior returns for green stocks (Ardia et al., 2023; Santi, 2023; El Ouadghiri et al., 2021; Kvam et al., 2024; Choi et al., 2020; Serafeim, 2020).

While the existing literature establishes a link between ESG concerns and asset prices, their implications for mutual fund flows are relatively underexplored. In particular, it is not yet clear how investors reallocate capital across funds in response to shifting ESG concerns—that is, whether heightened concerns motivate greater allocations to sustainable funds, or whether waning concerns lead to reduced investment. Recent literature begins to examine related issues. For example, Ali et al. (2024) develop a media-based climate risk index as a proxy for climate-related concerns and find that during periods of elevated perceived risk, investors place greater weight on past performance, particularly among funds with high sustainability ratings. However, their analysis primarily focuses on how climate risk influences the flow–performance sensitivity, rather than treating sustainability concerns as direct determinants of fund flows. Similarly, Lantushenko et al. (2022) document that flows into alternative energy ETFs increase in response to climate-related indicators—such as global temperature anomalies and the number of newly launched ESG funds—whereas traditional energy ETFs exhibit no comparable sensitivity. Nevertheless, their focus on climate-specific concerns and sectoral ETFs leaves open the broader question of whether general ESG concerns systematically influence investment flows within the mutual fund universe.

Mutual funds provide an interesting setting to study these questions for two reasons. First, flows offer a direct and observable measure of investors’ capital allocation decisions, allowing us to examine whether public ESG concerns intensify reallocations toward high-ESG

funds and away from low-ESG funds, in line with the investor-channel mechanism emphasized by Pástor et al. (2021). Second, mutual funds allow us to study heterogeneity across investor types. We expect stronger responses among institutionally held funds because institutional asset owners operate under greater stakeholder accountability and public scrutiny, making them more constrained by social norms and reputational considerations. Prior studies show that institutions avoid “sin stocks”, firms in industries such as tobacco, alcohol, or gambling (Hong and Kacperczyk, 2009) and tend to underweight firms with high pollution or carbon exposure (Bolton and Kacperczyk, 2021; Tirodkar and Berkman, 2023; Enders et al., 2025). Consistent with greater institutional constraints, Döttling and Kim (2024) show that retail flows to high-sustainability funds decline sharply during the COVID-19 shock, whereas institutional flows into such funds do not fall in the same way. Studies further show that institutions tend to reduce exposure following negative ESG news, whereas retail trading is weaker and less directional (Hoang et al., 2025; Bang et al., 2023).

In this paper, we investigate whether public ESG concerns influence mutual fund flows. Specifically, we hypothesize that the positive effect of ESG attributes on fund flows intensifies during periods of heightened ESG concerns. To test this proposition, we employ panel data on US domestic equity mutual funds from 2005 to 2022, obtained from the CRSP Survivor-Bias-Free US Mutual Fund Database. Each fund’s ESG score is calculated as the holdings-weighted average of Refinitiv ESG scores. To capture time-varying public attention to sustainability issues, we construct an ESG Concerns Index derived from Google Search Volume (GSV) data. Our results indicate that public ESG concerns amplify the relationship between ESG scores and fund flows, and that this effect is asymmetric. During periods of elevated concerns, ESG scores are positively associated with fund flows, whereas no significant relationship emerges when concerns subside. Moreover, the positive effect observed in high-concern periods is primarily driven by reduced allocations to low-ESG funds, rather than by increased allocations to high-ESG funds.

We extend our analysis by examining how the effects of ESG concerns vary across investor

types. We find that mutual funds with a larger share of institutional investors exhibit stronger flow responses during periods of heightened ESG concerns. Institutional investors are more likely to reduce allocations to funds with weak environmental and social scores than to increase allocations to high-scoring funds. However, they tend to favor funds with stronger governance profiles when ESG concerns rise. This pattern aligns with firm-level evidence indicating that institutional investors generally avoid firms with environmental and social weaknesses (Nofsinger et al., 2019), while strong governance is associated with higher institutional ownership (Lopez-de Silanes et al., 2024; Ferreira and Matos, 2008). In contrast, retail-oriented funds exhibit weaker and less consistent flow responses. The allocation behavior of institutional investors thus creates incentives for fund managers to maintain strong ESG profiles. Consistent with this notion, we find that funds with greater institutional ownership sustain higher ESG scores, particularly during periods of elevated public concerns about ESG issues.

This study makes several contributions. First, we extend the literature on sustainable finance and mutual funds (Hartzmark and Sussman, 2019; Ammann et al., 2019; Fang and Parida, 2022; Pástor and Vorsatz, 2020; El Ghouli and Karoui, 2017) by incorporating time-varying ESG concerns into the analysis of fund flows. We demonstrate that the relationship between sustainability and fund flows is contingent on the prevailing level of public ESG concerns. Specifically, heightened ESG concerns induce reallocations away from low-sustainability funds, whereas declining concerns appear insufficient to meaningfully affect investor behavior. Second, we contribute to the literature on institutional investors and ESG preferences. Prior research shows that institutional investors can actively influence firms' ESG policies. Dyck et al. (2019) find that institutional ownership enhances firm-level ESG performance, while Kim et al. (2019) document that local institutional investors help reduce toxic emissions from nearby industrial facilities. We extend this evidence to the mutual fund setting by showing that funds with a larger share of institutional investors maintain higher ESG scores, particularly during periods of elevated public concerns. Starks (2023)

reports a growing trend among active US mutual funds to increase holdings of high-ESG firms relative to low-ESG ones, and Pastor et al. (2025) find that institutional asset managers—including US equity mutual fund managers—tilt their portfolios toward green stocks. We complement these findings by offering a demand-side perspective. Institutional investors, acting as fund clients, incentivize fund managers to adopt greener investment strategies by reallocating capital away from low-ESG funds when ESG concerns intensify.

The remainder of the paper is structured as follows. Section 2 describes the data, variable construction, and the development of the ESG Concerns Index. Section 3 presents the empirical results, and Section 4 concludes.

2 Data and variables

Our sample consists of US domestic equity funds from 2005 to 2022. Data on fund characteristics and portfolio holdings are obtained from the CRSP Survivor-Bias-Free US Mutual Fund Database, which we complement with Refinitiv ESG scores and Google Trends data. Following prior literature (Chen et al., 2024; Ceccarelli et al., 2024; Ammann et al., 2019), we exclude index funds, sector-specific funds, funds closed to new investors, and those subject to sales restrictions. Consistent with standard practice, we further restrict the sample to funds with at least \$5 million in assets under management (Chen et al., 2024; Döttling and Kim, 2024) and a minimum age of three years (Gantchev et al., 2024; Tang et al., 2024).

To construct fund-level ESG scores, we match each fund’s portfolio holdings with firm-level ESG scores from Refinitiv. We retain only funds for which at least 60% of holdings can be successfully matched, ensuring reliable representation of the underlying portfolios (Tang et al., 2024; Dorfleitner et al., 2021).³

³We find that our results are robust to using alternative thresholds of 67% (El Ghouli and Karoui, 2017) and 75% (Borgers et al., 2015).

2.1 Fund Characteristics

Our dependent variable is the monthly fund flow for fund j at time t , $FLOW_{j,t}$, measured as the percentage change in a fund’s total net assets, $TNA_{j,t}$, adjusted for reinvested returns.⁴ Specifically, we calculate fund flow as follows:

$$FLOW_{j,t} = \frac{TNA_{j,t} - TNA_{j,t-1} \times (1 + RETURN_{j,t})}{TNA_{j,t-1}}. \quad (1)$$

2.2 ESG Scores

To calculate ESG scores at the fund level, we obtain the Refinitiv ESG score for each stock held by a fund (Liang et al., 2022; Dorfleitner et al., 2021; Tang et al., 2024). Following El Ghouli and Karoui (2017), we compute fund-level ESG scores as the value-weighted average of the ESG scores of the matched stocks. Since Refinitiv ESG scores are typically reported on an annual basis, we use the most recent available scores throughout the subsequent year. For example, when calculating a fund’s ESG scores for any month in 2020, we use ESG scores from 2019 to avoid look-ahead bias. Specifically, we calculate the ESG score of fund j for each month in year t using the following formula:

$$ESG_{j,t} = \sum_{i=1}^{N_{j,t}} w_{i,j,t} \times ESG_{i,t-1}, \quad (2)$$

where the weight $w_{i,j,t}$ represents the proportional value of stock i relative to the total value of matched stocks within fund j for each month in year t . $N_{j,t}$ denotes the number of matched stocks in fund j for each month in year t . $ESG_{i,t-1}$ is the Refinitiv ESG score of stock i as reported in the preceding year, $t - 1$.

Refinitiv ESG scores provide a comprehensive measure of a company’s sustainability

⁴Mutual funds often issue multiple share classes to accommodate different investor segments, while maintaining a common underlying portfolio. To account for this structure, we conduct our analysis at the fund level by aggregating data across all share classes. Specifically, we calculate $TNA_{j,t}$ and dollar flows by summing values across share classes, and compute returns, expense ratios, and turnover ratios as TNA-weighted averages. Fund age is determined using the inception date of the earliest share class.

performance, based on an extensive set of publicly disclosed data. The underlying indicators are organized into ten categories: resource use, emissions, innovation, workforce, human rights, community, product responsibility, management, shareholders, and CSR strategy. These categories are subsequently aggregated into three pillar scores—environmental, social, and governance—which capture distinct dimensions of corporate sustainability. The overall ESG score is then computed as a weighted average of the three pillar scores, representing a firm’s aggregate ESG performance. Both the composite ESG score and the individual pillar scores range from 0 to 100, with higher values indicating stronger ESG performance.⁵

2.3 ESG Concerns Index

To capture public ESG concerns, we employ Google Search Volume data, which serves as a reliable proxy for public concerns. First, Google is the dominant and most widely used channel for online information seeking.⁶ Second, search volume reflects individual attention, interest, and concerns regarding specific issues, as users’ queries directly reveal the topics they are concerned about (Da et al., 2011; Wu and Brynjolfsson, 2015; Ettredge et al., 2005). Third, prior research demonstrates that Google search volumes can predict a wide range of outcomes, including consumer demand, financial market behavior, and political events (Da et al., 2011, 2015; Choi and Varian, 2012; Goel et al., 2010; Wu and Brynjolfsson, 2015; Mavragani and Tsagarakis, 2016).

Following De Beckker et al. (2025), we construct the ESG Concerns Index in two stages: (i) compiling ESG-related search terms and (ii) constructing the index. ESG-related terms are collected from prior studies (Kvam et al., 2024; Santi, 2023; El Ouadghiri et al., 2021;

⁵For detailed information, see https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf

⁶As of 2023, 95% of US adults use the internet, and Google accounts for 87.62% of the search engine market share (Statcounter, <https://gs.statcounter.com/search-engine-market-share>). Google remains the most visited website in the US and has become the primary channel for information seeking, surpassing social media platforms. In contrast, traditional news media continue to experience declines in audience size and usage (Pew Research Center, <https://www.pewresearch.org/>; and We Are Social, <https://wearesocial.com/us/blog/2021/01/digital-2021-us/>)

Baier et al., 2020; Dimson et al., 2015) and Refinitiv’s ESG methodology.⁷ Unlike De Beckker et al. (2025), we include investing-related terms to better capture the investment context of this study. We then expand the initial list by examining the ten “top related queries” for each term in Google Trends (Da et al., 2015), identifying additional relevant keywords that users frequently search for. For instance, the term “extreme temperature” yields related queries such as “extreme cold” and “extreme heat,” which are retained as they reflect climate-related topics. To ensure that search results accurately capture ESG-related topics, we refine the keyword list and exclude irrelevant queries.⁸ After reviewing related queries, we identify 174 ESG-related search terms across the environmental, social, governance, and overall ESG dimensions. To focus on terms with meaningful search activity, we select the 20 most frequently searched terms for each ESG dimension and retain seven general ESG terms for the overall ESG category.⁹ We then collect monthly search volume data for each term, restricting the data to the United States to align with our sample of US domestic equity funds.

The second stage involves constructing the ESG Concerns Index. First, we compute the deviation between the logarithm of the current month’s search volume and the logarithm of the preceding twelve-month median. This measure captures abnormal search volume (Da et al., 2011; Kvam et al., 2024) while mitigating the effects of time trends and seasonal patterns in search behavior (Da et al., 2011).¹⁰ Second, we standardize each term by dividing the deviation from the twelve-month median by its time-series standard deviation to address heteroscedasticity and ensure comparability across topics (Da et al., 2015). Finally, we

⁷The Refinitiv ESG methodology is available at https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf

⁸Similar to De Beckker et al. (2025), we make three adjustments. First, we exclude unrelated searches using negative filters such as “csr -car -racing” to separate car racing games from searches related to corporate social responsibility. Second, we use quotation marks when word order affects meaning (for example, “fair trade” has a different meaning from “trade fair”). Third, we add the “+” symbol to include both singular and plural forms (for example, “greenhouse gas +greenhouse gases”).

⁹The list of ESG-related search terms is available upon request.

¹⁰We use a twelve-month median to mitigate seasonal fluctuations throughout the year. However, to account for the possibility of more immediate public responses, we also perform robustness tests using three- and six-month medians.

calculate the ESG Concerns Index as the simple average of the standardized values across all selected search terms—seven general ESG-related terms for the overall index and twenty terms for each ESG dimension.

2.4 Summary Statistics

Table 1 presents summary statistics for our variables. All fund-level variables—except ESG scores, fund size, and fund age—are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers. For comparability across variables, the summary statistics are computed using only observations for which all reported variables are available. Our dataset comprises 1,973 unique funds, representing 52,778 fund-month observations. Detailed definitions of all variables are provided in Table A1 in Appendix.

Panel A of Table 1 presents summary statistics for monthly fund flows, our main dependent variable. The mean flow is -0.681% (median -0.657%) with a standard deviation of 2.947%. This indicates that, on average, funds in our sample experience outflows with substantial variation across funds.

Panel B of Table 1 reports the summary statistics for the fund-level overall ESG score and each individual ESG dimension score. The mean (median) overall ESG score is 51.355 (52.129) with a standard deviation of 7.746. Among the three ESG dimensions, the environmental score has the lowest mean (49.872), while the social and governance scores exhibit higher averages of 60.919 and 60.150, respectively. This pattern suggests that the funds' holdings tend to perform better on social and governance dimensions compared to environmental aspects.

Panel C of Table 1 presents summary statistics for various ESG Concerns Indexes, which comprise 216 monthly observations. The mean of the overall ESG Concerns Index is 0.003 (median 0.020) with a standard deviation of 0.718. This suggests that public ESG concerns exhibit substantial variability over time. Among the three dimensions, environmental concerns have the highest standard deviation (0.715), indicating that public environmental

concerns fluctuate more than social (0.666) or governance (0.620) concerns.

Panel D of Table 1 reports summary statistics for fund characteristics. The average total net assets (TNA) amount to \$2,810 million, and the mean fund age is 281 months. The average monthly return is 0.552%, with a standard deviation of 5.124%, indicating substantial variability in fund performance. The Carhart four-factor alpha has mean of -0.101%, suggesting that funds slightly underperform their risk-adjusted benchmarks. The mean return volatility is 4.686%. The turnover ratio has a mean of 59.881%, indicating that more than half of the portfolio is replaced annually. Finally, the mean of the expense ratio is 0.976%, representing the proportion of fund assets allocated to operating and distribution costs.

INSERT TABLE 1 HERE

2.5 Methodology

We use panel regressions to examine the relationship between ESG concerns and mutual fund flows. Our primary focus is on the interaction term between ESG scores and ESG concerns to investigate whether funds with higher ESG scores receive greater flows. Specifically, we estimate the following model:

$$FLOW_{j,t} = \beta_0 + \beta_1 ESG_{j,t-1} + \beta_2 ESG_{j,t-1} \times CONCERNS_{t-1} + \beta_3 CONTROLS_{j,t-1} + \eta_j + \tau_t + \epsilon_{i,t}, \quad (3)$$

where $FLOW_{j,t}$ represents the percentage flow of fund j in month t , $ESG_{j,t-1}$ denotes the ESG score for fund j in month $t - 1$. $CONCERNS_{t-1}$ captures public concerns on ESG issues in month $t - 1$. The model includes a vector of control variables $CONTROLS_{j,t-1}$, which we detail below. We incorporate fund (η_j) and month fixed effects (τ_t). Since the inclusion of month fixed effects absorbs all variations from $CONCERNS_{t-1}$, we do not

include $CONCERNS_{t-1}$ as a standalone variable in the regression.¹¹ Consistent with previous studies (Ammann et al., 2019; Ceccarelli et al., 2024; El Ghouli and Karoui, 2017; Gantchev et al., 2024), we lag all independent variables to accommodate potential delays in the availability of fund characteristics information that investors consider. We also lag the ESG concerns variable to reflect the possibility that investors may not immediately respond to ESG concerns when making investment decisions.

We include several control variables in our model. We control for fund size ($SIZE$), measured as the natural logarithm of TNA. We also control for AGE , which is calculated as the natural logarithm of the number of months since the fund’s inception. Smaller funds are more sensitive to flows, as a given dollar amount constitutes a relatively larger percentage increase in their asset base (Ammann et al., 2019). Prior studies have documented a strong relationship between past performance and fund flows (Sirri and Tufano, 1998; Del Guercio and Tkac, 2002; Ferreira et al., 2012). To control for investor preferences for high-performing funds, we include monthly returns ($RETURNS$) and the Carhart (1997) four-factor alpha ($CARHART\ ALPHA$), estimated using a 36-month rolling window regression. We include return volatility ($VOLATILITY$) as a measure of risk, calculated as the standard deviation of returns over the previous 12 months (Ammann et al., 2019; Ceccarelli et al., 2024). Following Ammann et al. (2019), we include turnover ratio ($TURNOVER$), as our data similarly indicate that funds with higher ESG scores tend to exhibit lower turnover. Finally, we control for the expense ratio ($EXPENSE$), since prior studies have shown that higher expenses are associated with lower fund flows (Evans and Fahlenbrach, 2012; Salganik-Shoshan, 2016).

3 Results

This section presents the empirical findings of the study. Section 3.1 reports the baseline results, examining whether heightened ESG concerns strengthen the association between fund

¹¹For the same reason, we also do not include macroeconomic variables, as their time-series variation is already captured by the month fixed effects.

ESG scores and fund flows. Section 3.2 investigates the asymmetric effects of ESG concerns on fund flows. Section 3.3 compares the differential responses of institutional and retail funds to ESG concerns. Section 3.4 analyzes whether institutional funds exhibit systematically stronger ESG profiles than retail funds, and whether these profiles adjust in response to fluctuations in public ESG attention. Finally, Section 3.5 assesses the robustness of the results.

3.1 Main Results: ESG Concerns and Fund Flows

Table 2 presents the estimated effect of ESG concerns on fund flows, as specified in Equation (3). Column (1) reports the interaction between a fund’s overall ESG score and the ESG Concerns Index. Columns (2) to (4) extend the analysis by interacting each ESG dimension (Environmental, Social, and Governance) with its corresponding Concerns Index.

Across all specifications, the standalone coefficients on the ESG scores are statistically insignificant, while the interaction terms are positive and significant. These results indicate that a fund’s ESG profile, in isolation, is not associated with higher fund flows. However, during periods of elevated ESG concerns, funds with stronger ESG scores experience significantly higher inflows relative to low-ESG funds. Elevated public ESG concerns likely reflect stronger expectations around ESG considerations, which may lead investors to place greater weight on fund ESG characteristics in their allocation decisions. This evidence is consistent with our hypothesis that ESG concerns amplify the relationship between fund ESG scores and investor flows.¹²

The magnitude of the effect is economically meaningful. Based on the estimates in Column (1), a one-standard-deviation increase in ESG concerns for a fund with a median ESG score is associated with a 0.220% increase in flows. Moreover, a one-standard-deviation increase in a fund’s ESG score contributes an additional 0.032% to flows. Considering that

¹²To address the possibility that heightened ESG concerns coincide with short-run changes in fund ESG profiles, we conduct a robustness check by controlling for lagged changes in ESG scores (ΔESG) and their interaction with ESG concerns.

the median monthly flow is -0.663%, these effects are substantial.

INSERT TABLE 2 HERE

The results for the control variables in Table 2 are consistent with prior literature. We observe negative and significant coefficients for *SIZE* and *AGE*, indicating that larger and more mature funds tend to experience lower inflows (Gantchev et al., 2024; Chen et al., 2024). Both *RETURNS* and *CARHART ALPHA* exhibit positive and significant coefficients, suggesting that superior past performance attracts greater investor inflows (Ceccarelli et al., 2024; Ali et al., 2024; El Ghouli and Karoui, 2017). In contrast, *VOLATILITY* is negatively associated with fund flows, implying that investors display risk aversion and prefer less volatile funds. The coefficient on *TURNOVER* is statistically insignificant, suggesting that trading activity does not materially influence investor allocation decisions within our sample. Finally, the negative and significant coefficient on *EXPENSE* indicates that investors are sensitive to fund costs, consistent with prior evidence that higher fees discourage capital inflows (Evans and Fahlenbrach, 2012; Salganik-Shoshan, 2016).

3.2 Asymmetric Effects of ESG Concerns on Fund Flows

This section investigates the asymmetric effects of ESG concerns on fund flows. Specifically, we examine whether the influence of ESG concerns on fund flows intensifies during periods of rising public attention relative to other periods (Panel A of Table 3), and whether the impact of ESG Concerns varies across funds with differing ESG profiles (Panel B of Table 3).

Panel A in Table 3 presents the results of the first asymmetry analysis. Public ESG concerns fluctuate over time, alternating between periods of heightened awareness and periods of relative indifference. While the previous section shows that ESG concerns amplify the association between fund ESG scores and flows, an important question is whether this amplification is concentrated in periods when ESG concerns are elevated, rather than also

appearing in periods when concerns are low. To capture investors' differential responses to these fluctuations, we construct a dummy variable that equals one when the ESG Concerns Index is positive and zero otherwise. Since the index is defined as the deviation from its 12-month rolling median, a positive value reflects heightened public concerns relative to preceding periods. Columns (1)-(4) of Panel A in Table 3 report the interaction between ESG scores and this dummy variable. The first row captures the effect of ESG scores on fund flows during periods of stable or declining concerns, while the second row reflects the incremental effect during periods of elevated concerns. The positive and significant coefficients in the second row indicate that the influence of ESG scores on fund flows strengthens when ESG concerns rise. In contrast, the coefficients during non-elevated concerns are generally insignificant, with the exception of the social dimension (Column 3).

INSERT TABLE 3 HERE

The results in Panel A of Table 3 do not reveal whether the positive association between ESG scores and fund flows during periods of heightened concerns arises because investors allocate more capital to high-ESG funds, reduce allocations to low-ESG funds, or both. To disentangle these effects, Panel B of Table 3 compares flows across ESG score groups by interacting the ESG Concerns Index with dummy variables for the low- and high-ESG terciles, using the middle tercile as the reference category.

The interaction terms for the low-ESG tercile are negative and statistically significant across nearly all specifications, except for the governance dimension. These results indicate that funds with weaker ESG profiles experience relatively lower inflows when ESG concerns intensify. In contrast, the coefficients for the high-ESG tercile are generally small and insignificant, with only limited positive effects for the governance dimension and a modest negative coefficient for the environmental dimension. The latter may reflect investor caution toward funds that heavily emphasize environmental factors.

Taken together, this asymmetric pattern suggests that the observed relationship between ESG concerns and fund flows is primarily driven by reduced allocations to low-ESG funds

during periods of elevated concerns, while evidence of increased allocations to high-ESG funds remains limited. This suggests that heightened public scrutiny raises the cost of holding low-ESG funds and encourages investors to avoid them, treating ESG as a “hygiene factor” (?).

3.3 Institutional vs. Retail Fund Responses to ESG Concerns

The previous section shows that the ESG-flow relation is concentrated in periods when ESG concerns are elevated and is primarily driven by reduced allocations to low-ESG funds. We now examine whether this pattern differs across investor clienteles by comparing funds predominantly held by institutional investors with those mainly held by retail investors.

Following Pástor and Vorsatz (2020), we classify a fund as *institutional* (*retail*) if more than two-thirds of its TNA are held by institutional (retail) investors. Funds that do not meet either threshold are excluded from this analysis. Table 4 presents the results. Columns (1) to (4) report the estimates for institutional funds, while Columns (5) to (8) present those for retail funds. The interaction terms between ESG scores and ESG concerns are positive and statistically significant across all specifications for institutional funds. In contrast, the corresponding coefficients for retail funds are insignificant for both the overall ESG score and each of its individual dimensions.¹³

INSERT TABLE 4 HERE

This heterogeneity is consistent with institutional investors facing stronger external accountability and scrutiny, which can make them more sensitive to ESG-related expectations when public attention intensifies. This aligns with evidence that institutions are more con-

¹³We further validate this finding by estimating a triple interaction model that introduces an institutional fund dummy and interacts it with both ESG scores and ESG concerns. This approach allows us to test directly whether institutional funds respond differently to heightened ESG concerns relative to retail funds. The results, reported in Table A2 in the Appendix, confirm our earlier findings. The interaction between ESG scores and ESG concerns alone is positive but insignificant. However, when the institutional fund dummy is included in the interaction ($\text{Inst} \times \text{Concerns} \times \text{ESG}$), the effect becomes significant.

strained by social norms and respond more systematically to ESG-related risks and controversies than retail investors (e.g., Hong and Kacperczyk, 2009; Hoang et al., 2025).

We further examine whether the asymmetric effects of ESG concerns documented in Table 3 are primarily driven by institutional investors. To do so, we replicate the asymmetric analysis separately for institutional and retail subsamples. Table 5 reports the results for institutional funds. The patterns closely mirror those in Table 3, confirming that institutional investors account for most of the asymmetric responses observed earlier. In Panel A of Table 5, the interaction terms between ESG scores and the positive-concerns dummy are mostly significant, indicating that the effect of ESG scores on fund flows becomes more pronounced when public concerns are rising. In Panel B of Table 5, the asymmetric pattern across ESG score groups also remains consistent with Table 3: the negative and significant interaction terms for low-ESG funds persist, while the positive coefficient for the high-ESG tercile in the governance dimension strengthens. Overall, these findings suggest that institutional investors respond to heightened ESG concerns by reducing allocations to funds with weaker environmental and social profiles while directing more capital toward those with stronger governance attributes.

INSERT TABLE 5 HERE

These institutional patterns align closely with firm-level evidence. Nofsinger et al. (2019) document that institutional investors tend to underweight firms with environmental and social weaknesses but do not necessarily favor those with corresponding strengths, suggesting a preference for mitigating downside risks rather than pursuing upside potential. Similarly, Ferreira and Matos (2008) find that institutional investors are more likely to invest in firms with stronger governance practices. Lopez-de Silanes et al. (2024) further show that while firms with strong environmental and social profiles attract more institutional investors, the scale of these investments remains modest. In contrast, firms with superior governance scores attract both a larger number of institutional investors and greater ownership stakes, likely because governance quality is more directly tied to firm performance.

Table 6 presents the results for retail funds, which display weaker and less consistent patterns. In Panel A of Table 6, the interaction between ESG scores and positive concerns dummy is largely insignificant, and in Panel B of Table 6, the asymmetry across ESG score groups appears mixed, with both low- and high-ESG terciles exhibiting negative interactions for overall ESG and environmental dimensions. These weak and inconsistent results suggest that retail investors respond less systematically to changes in public ESG concerns.

INSERT TABLE 6 HERE

3.4 Institutional Ownership and Fund-Level ESG Scores

As shown in our earlier analysis, institutional investors drive the sensitivity of fund flows to ESG concerns. Notably, this effect is asymmetric: heightened concerns are associated with reduced allocations to poorly rated funds, whereas periods of declining concerns do not trigger corresponding inflows. This asymmetry suggests that institutional investors exert persistent pressure on fund managers to strengthen their ESG profiles. In this section, we therefore examine whether institutional funds consistently maintain higher ESG scores and whether these scores adjust in response to changes in public ESG concerns.

Table 7 presents the regression results. Columns (1)–(4) present estimates of fund-level ESG scores regressed on an institutional fund dummy and its interaction with the ESG Concerns Index, controlling for fund characteristics as in the baseline models. All explanatory variables are lagged by one month. The coefficient on the institutional fund dummy is positive and statistically significant across all specifications, indicating that institutional funds consistently maintain higher ESG scores. More importantly, the interaction term between institutional funds and ESG concerns is also positive and significant across all ESG dimensions. In Columns (5)–(8), we replace the continuous ESG Concerns Index with tercile group indicators, using the middle tercile as the reference category. Consistent with the earlier results, the interaction between the institutional fund dummy and the high-concerns tercile is positive and statistically significant for the overall ESG score as well as

for the environmental and social dimensions. In contrast, the interaction terms with the low-concerns tercile are insignificant.

Overall, these findings indicate that institutional funds respond to rising ESG concerns by enhancing their sustainability profiles but remain largely unresponsive when concerns diminish. This behavior leads institutional funds to sustain higher ESG scores over time, underscoring the active role institutional investors play in shaping fund-level ESG characteristics through their capital allocation decisions.

INSERT TABLE 7 HERE

3.5 Robustness tests

In this section, we evaluate the robustness of our findings through a series of tests. First, our baseline analysis includes only funds for which at least 60% of holdings are covered by ESG scores. To ensure that our results are not driven by this coverage threshold, we re-estimate the main models using stricter cutoffs of 67% and 75%. These higher thresholds enhance the informational quality of the fund-level ESG scores by ensuring that they represent more reliable portion of the fund’s actual holdings, while reducing potential biases from uncovered securities. The results, reported in Panel A of Table 8, remain consistent with our main findings. The interaction terms between ESG scores and the ESG Concerns Index are positive and statistically significant across all specifications.

Second, we assess the sensitivity of our results to the construction of the ESG Concerns Index. In the main specification, ESG concerns are measured as the deviation of monthly search volume from the 12-month rolling median. To capture the possibility of more immediate investor responses to ESG issues, we recompute the index using 6-month and 3-month medians as alternative benchmarks. The results, as presented in Panel B of Table 8, are consistent with the main findings. The interaction terms remain positive and statistically significant across both alternative specifications.

Third, we address the concern that periods of heightened ESG concerns may coincide with changes in funds' ESG profiles. To disentangle the role of ESG levels from short-run ESG repositioning, we extend the baseline flow regressions by controlling for lagged changes in fund ESG scores (ΔESG) and their interaction with ESG concerns. The results, reported in Panel C of Table 8, show that the interaction terms between ESG scores and the ESG Concerns Index remains positive and statistically significant, indicating that our baseline findings are not driven solely by short-run changes in ESG scores.

INSERT TABLE 8 HERE

4 Conclusion

This study provides new evidence on how time-varying public concerns about ESG issues influence mutual fund flows. Using a novel ESG Concerns Index derived from Google search volumes, we show that ESG scores alone do not consistently drive fund allocations. However, during periods of heightened ESG awareness, ESG attributes significantly affect flows, primarily through institutional investors reallocating away from low-ESG funds. Governance scores represent an important exception, attracting additional allocations from institutions.

Our results also indicate that funds with higher institutional ownership maintain stronger ESG profiles, particularly when public concern is elevated. This finding underscores the role of institutional investors in shaping fund behavior: by strategically reallocating capital, they incentivize fund managers to enhance sustainability practices, treating ESG characteristics as essential risk-mitigating factors.

Overall, this study contributes to the literature on sustainable finance and mutual fund behavior by highlighting the dynamic interplay between investor preferences, public attention, and fund strategies. It demonstrates that ESG demand is inherently time-varying and mediated by sophisticated investors, offering insights for asset managers, regulators, and researchers interested in the mechanisms through which ESG considerations influence capital

allocation in financial markets.

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Table 1. Summary statistics

Variables	Obs	Mean	Sd	p25	p50	p75
Panel A. Fund flow						
FLOW (%)	52,778	-0.681	2.947	-1.466	-0.657	0.076
Panel B. Fund-level ESG scores						
ESG	52,778	51.355	7.746	46.704	52.129	57.125
ENV	52,778	49.872	17.425	39.013	53.727	63.839
SOC	52,778	60.919	12.120	52.818	62.641	70.736
GOV	52,778	60.150	8.285	54.739	61.412	66.472
Panel C. Concerns index						
ESG CONCERNS	216	0.003	0.718	-0.540	0.020	0.529
ENV CONCERNS	216	-0.131	0.715	-0.571	0.000	0.321
SOC CONCERNS	216	-0.215	0.666	-0.705	-0.045	0.262
GOV CONCERNS	216	-0.042	0.620	-0.455	-0.072	0.406
Panel D. Fund characteristics						
TNA in \$ million	52,778	2,810	9,630	142	583	2,077
SIZE	52,778	6.329	1.833	4.956	6.368	7.638
Age in months	52,778	281	186	164	245	332
AGE	52,778	5.470	0.571	5.101	5.502	5.804
RETURN (%)	52,778	0.552	5.124	-2.138	1.069	3.674
CARHART ALPHA (%)	52,778	-0.101	0.213	-0.220	-0.093	0.032
VOLATILITY (%)	52,778	4.686	2.012	3.008	4.406	6.107
TURNOVER (%)	52,778	59.881	53.660	27.000	46.000	76.000
EXPENSE (%)	52,778	0.976	0.313	0.797	0.965	1.130

This table reports summary statistics for the main variables. Panel A presents statistics for the fund flow variable. Panel B shows statistics for overall ESG scores and each individual ESG dimension. Panel C presents statistics for the ESG Concerns Indexes and Panel D reports statistics for the control variables. All fund-level variables, except ESG scores, fund size, and fund age, are winsorized at the 1st and 99th percentiles to reduce the influence of outliers.

Table 2. Effect of ESG concerns on fund flows

Dependent variable	FLOW			
ESG Dimension	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)
ESG	0.002 (0.008)	-0.006 (0.006)	-0.010 (0.007)	-0.003 (0.007)
CONCERNS x ESG	0.006*** (0.002)	0.003** (0.001)	0.006*** (0.002)	0.010*** (0.003)
SIZE	-0.734*** (0.072)	-0.730*** (0.072)	-0.730*** (0.073)	-0.734*** (0.073)
AGE	-1.023** (0.488)	-0.985** (0.487)	-0.987** (0.488)	-1.002** (0.487)
RETURN	0.055*** (0.010)	0.055*** (0.010)	0.056*** (0.010)	0.056*** (0.010)
CARHART ALPHA	2.882*** (0.161)	2.856*** (0.159)	2.850*** (0.159)	2.857*** (0.158)
VOLATILITY	-0.182*** (0.039)	-0.188*** (0.039)	-0.190*** (0.039)	-0.185*** (0.039)
TURNOVER	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
EXPENSE	-2.045*** (0.352)	-2.046*** (0.353)	-2.046*** (0.353)	-2.045*** (0.353)
Constant	12.649*** (2.748)	12.901*** (2.775)	13.265*** (2.790)	12.825*** (2.731)
Observations	51,502	51,502	51,502	51,502
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.184

This table reports regression results examining the interaction between ESG scores and ESG concerns on fund flows. Column (1) presents results for the overall ESG score, while Columns (2)–(4) show results for each ESG dimension, with each concerns index corresponding to its respective dimension. All right-hand-side variables are lagged by one month. The regressions include fund and year-month fixed effects, and standard errors are clustered at the fund level. Robust standard errors are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively

Table 3. Asymmetric effects of ESG concerns on fund flows

Panel A. Asymmetry between rising and declining concerns				
Dependent variable	FLOW			
ESG Dimension	ESG (1)	ENV (2)	SOC (3)	GOV (4)
ESG	-0.002 (0.008)	-0.008 (0.006)	-0.016** (0.007)	-0.009 (0.007)
POSITIVE CONCERNS x ESG	0.007** (0.003)	0.002* (0.001)	0.009*** (0.002)	0.012*** (0.004)
Constant	12.678*** (2.750)	12.914*** (2.775)	13.306*** (2.789)	12.864*** (2.730)
Observations	51,502	51,502	51,502	51,502
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.184
Panel B. Asymmetry across ESG groups				
Dependent variable	FLOW			
ESG Dimension	ESG (1)	ENV (2)	SOC (3)	GOV (4)
ESG (low tercile)	-0.047 (0.064)	-0.105 (0.078)	0.031 (0.076)	-0.022 (0.067)
ESG (high tercile)	0.042 (0.066)	-0.042 (0.066)	-0.037 (0.061)	-0.012 (0.055)
ESG (low tercile) x CONCERNS	-0.124*** (0.040)	-0.156*** (0.046)	-0.149*** (0.051)	-0.050 (0.052)
ESG (high tercile) x CONCERNS	-0.055 (0.039)	-0.081* (0.042)	-0.005 (0.045)	0.084* (0.048)
Constant	12.862*** (2.766)	12.806*** (2.738)	12.697*** (2.751)	12.722*** (2.746)
Observations	51,502	51,502	51,502	51,502
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.184

This table reports the asymmetric effects of ESG concerns on fund flows. Panel A presents regressions distinguishing rising from declining concerns using a dummy equal to one when the ESG Concerns Index exceeds the prior 12-month median, and zero otherwise. Panel B examines asymmetry across ESG score groups by interacting the ESG Concerns Index with low- and high-ESG tercile dummies. Results are shown for the overall ESG score and for each ESG dimension, with each concerns index corresponding to its respective dimension. Both ESG scores and concerns are lagged by one month. All regressions include lagged controls, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 4. Institutional vs retail fund responses to ESG concerns

Dependent variable	FLOW							
Institutional or retail	Institutional fund				Retail fund			
ESG Dimension	ESG	ENV	SOC	GOV	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ESG	0.017 (0.015)	0.012 (0.012)	0.009 (0.015)	0.015 (0.013)	-0.013 (0.009)	-0.008 (0.007)	-0.011 (0.008)	-0.005 (0.008)
CONCERNS x ESG	0.009** (0.004)	0.005*** (0.002)	0.010*** (0.003)	0.016*** (0.004)	0.000 (0.003)	0.000 (0.001)	0.002 (0.002)	0.001 (0.003)
Constant	7.441 (4.770)	7.861* (4.726)	7.813 (4.810)	7.573 (4.685)	14.228*** (4.645)	14.243*** (4.722)	14.572*** (4.727)	14.109*** (4.701)
Observations	20,358	20,358	20,358	20,358	21,575	21,575	21,575	21,575
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.185	0.182	0.182	0.182	0.182

This table reports regression results examining the differential response to ESG concerns between institutional and retail funds. The dependent variable in all columns is fund flow. Columns (1)–(4) show results for institutional funds, while Columns (5)–(8) show results for retail funds. Each concerns index corresponds to its respective ESG dimension. Both ESG scores and concerns are lagged by one month. All regressions include lagged controls, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 5. Asymmetric effects of ESG concerns on fund flows: Institutional funds

Panel A. Asymmetry between rising and declining concerns				
Dependent variable	FLOW			
ESG Dimension	ESG (1)	ENV (2)	SOC (3)	GOV (4)
ESG	0.012 (0.015)	0.008 (0.012)	0.000 (0.015)	0.005 (0.014)
POSITIVE CONCERNS x ESG	0.007 (0.006)	0.005** (0.002)	0.013*** (0.004)	0.018*** (0.006)
Constant	7.500 (4.775)	7.851* (4.730)	7.870 (4.810)	7.632 (4.687)
Observations	20,358	20,358	20,358	20,358
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.184
Panel B. Asymmetry across ESG score groups				
Dependent variable	FLOW			
ESG Dimension	ESG (1)	ENV (2)	SOC (3)	GOV (4)
ESG (low tercile)	-0.157 (0.131)	-0.294* (0.154)	-0.045 (0.165)	-0.129 (0.135)
ESG (high tercile)	0.159 (0.128)	0.063 (0.130)	0.081 (0.115)	0.208** (0.101)
ESG (low tercile) x CONCERNS	-0.153** (0.074)	-0.271*** (0.084)	-0.295*** (0.094)	-0.064 (0.096)
ESG (high tercile) x CONCERNS	-0.063 (0.073)	-0.140* (0.082)	-0.018 (0.088)	0.213** (0.102)
Constant	8.657* (4.710)	8.903* (4.645)	8.253* (4.660)	8.699* (4.643)
Observations	20,358	20,358	20,358	20,358
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.185	0.185	0.185

This table reports the asymmetric effects of ESG concerns on fund flows for institutional funds. Panel A presents regressions distinguishing rising from declining concerns using a dummy equal to one when the ESG Concerns Index exceeds the prior 12-month median, and zero otherwise. Panel B examines asymmetry across ESG score groups by interacting the ESG Concerns Index with low- and high-ESG tercile dummies. Results are reported for the overall ESG score and each ESG dimension, with each concerns index corresponding to its respective dimension. Both ESG scores and concerns are lagged by one month. All regressions include lagged controls, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are shown in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 6. Asymmetric effects of ESG concerns on fund flows: Retail funds

Panel A. Asymmetry between rising and declining concerns				
Dependent variable	FLOW			
ESG Dimension	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)
ESG	-0.014 (0.010)	-0.008 (0.006)	-0.014* (0.008)	-0.006 (0.008)
POSITIVE CONCERNS x ESG	0.002 (0.005)	0.000 (0.002)	0.006* (0.003)	0.002 (0.005)
Constant	14.222*** (4.645)	14.233*** (4.722)	14.557*** (4.726)	14.108*** (4.698)
Observations	21,575	21,575	21,575	21,575
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.182	0.182	0.182	0.182
Panel B. Asymmetry across ESG score groups				
Dependent variable	FLOW			
ESG Dimension	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)
ESG (low tercile)	0.077 (0.078)	-0.006 (0.088)	0.073 (0.080)	-0.035 (0.074)
ESG (high tercile)	0.013 (0.063)	-0.090 (0.063)	-0.069 (0.066)	-0.044 (0.066)
ESG (low tercile) x CONCERNS	-0.094* (0.051)	-0.112* (0.061)	-0.045 (0.064)	-0.007 (0.062)
ESG (high tercile) x CONCERNS	-0.099** (0.047)	-0.120** (0.052)	-0.013 (0.057)	-0.038 (0.049)
Constant	13.707*** (4.674)	13.833*** (4.658)	13.870*** (4.661)	13.768*** (4.654)
Observations	21,575	21,575	21,575	21,575
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.182	0.182	0.182	0.182

This table reports the asymmetric effects of ESG concerns on fund flows for retail funds. Panel A presents regressions distinguishing rising from declining concerns using a dummy equal to one when the ESG Concerns Index exceeds the prior 12-month median, and zero otherwise. Panel B examines asymmetry across ESG score groups by interacting the ESG Concerns Index with low- and high-ESG tercile dummies. Results are reported for the overall ESG score and each ESG dimension, with each concerns index corresponding to its respective dimension. Both ESG scores and concerns are lagged by one month. All regressions include lagged controls, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are shown in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 7. Effect of institutional ownership on funds' ESG scores

Dependent variable	ESG scores							
ESG Dimension	ESG	ENV	SOC	GOV	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INST	0.517** (0.240)	1.042*** (0.337)	0.590** (0.274)	0.546* (0.292)	0.511** (0.241)	0.964*** (0.341)	0.527* (0.271)	0.534* (0.291)
INST x CONCERNS	0.233*** (0.049)	0.222*** (0.055)	0.150*** (0.049)	0.075* (0.045)				
INST x LOW CONCERNS					-0.081 (0.059)	-0.027 (0.068)	-0.007 (0.046)	-0.011 (0.059)
INST x HIGH CONCERNS					0.182*** (0.054)	0.187*** (0.067)	0.131** (0.060)	0.057 (0.074)
Constant	30.137*** (6.281)	31.204*** (9.934)	55.384*** (7.142)	56.335*** (7.340)	29.765*** (6.287)	30.958*** (9.936)	55.197*** (7.144)	56.265*** (7.334)
Observations	52,192	52,192	52,192	52,192	52,192	52,192	52,192	52,192
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.885	0.957	0.948	0.882	0.885	0.957	0.948	0.882

This table examines whether institutional funds maintain higher ESG scores and how these scores respond to changes in public ESG concerns. The dependent variable in each column is the ESG score, either overall or for individual ESG dimensions. Columns (1)–(4) use the lagged continuous ESG Concerns Index and its interaction with an institutional fund dummy (equal to one if more than two-thirds of a fund's net assets are held by institutional investors). Columns (5)–(8) replace the continuous index with tercile groups, using the middle tercile as the reference category. Each concerns index corresponds to its respective ESG dimension. All regressions include lagged control variables, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 8. Robustness tests

Panel A. Alternative ESG matching threshold								
Dependent variable		FLOW						
	67% ESG-matched				75% ESG-matched			
ESG Dimension	ESG	ENV	SOC	GOV	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ESG	0.011 (0.011)	0.000 (0.008)	0.000 (0.010)	0.003 (0.010)	0.017 (0.019)	0.013 (0.014)	0.012 (0.016)	0.019 (0.018)
CONCERNS x ESG	0.008*** (0.003)	0.004*** (0.001)	0.008*** (0.002)	0.010*** (0.003)	0.016*** (0.005)	0.008*** (0.002)	0.012*** (0.004)	0.013*** (0.005)
Constant	16.173*** (4.147)	16.571*** (4.148)	16.573*** (4.157)	16.319*** (4.087)	-0.666 (8.343)	-1.018 (8.398)	-1.363 (8.414)	-1.649 (8.252)
Observations	30,155	30,155	30,155	30,155	11,351	11,351	11,351	11,351
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.199	0.199	0.199	0.199	0.213	0.213	0.213	0.213
Panel B. Alternative rolling medians for ESG concerns								
Dependent variable		FLOW						
	3-month rolling median				6-month rolling median			
ESG Dimension	ESG	ENV	SOC	GOV	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ESG	0.001 (0.008)	-0.007 (0.006)	-0.011 (0.007)	-0.004 (0.007)	0.001 (0.008)	-0.006 (0.006)	-0.011 (0.007)	-0.003 (0.007)
CONCERNS x ESG	0.004** (0.002)	0.003*** (0.001)	0.005*** (0.001)	0.007*** (0.002)	0.006*** (0.002)	0.003*** (0.001)	0.007*** (0.002)	0.011*** (0.002)
Constant	12.673*** (2.750)	12.921*** (2.775)	13.342*** (2.790)	12.894*** (2.731)	12.671*** (2.750)	12.913*** (2.776)	13.321*** (2.790)	12.862*** (2.731)
Observations	51,502	51,502	51,502	51,502	51,502	51,502	51,502	51,502
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.184	0.184	0.184	0.184	0.184
Panel C. Controlling for changes in fund ESG scores								
Dependent variable		FLOW						
ESG Dimension	ESG	ENV	SOC	GOV				
	(1)	(2)	(3)	(4)				
ESG	0.003 (0.011)	-0.003 (0.007)	-0.006 (0.009)	0.002 (0.009)				
CONCERNS x ESG	0.008*** (0.003)	0.004*** (0.001)	0.007*** (0.002)	0.011*** (0.003)				
ΔESG	0.024 (0.018)	0.034** (0.013)	0.040** (0.018)	-0.019 (0.016)				
CONCERNS x ΔESG	-0.003 (0.022)	0.034* (0.018)	0.058** (0.025)	0.017 (0.024)				
Constant	11.413*** (3.598)	11.567*** (3.655)	11.794*** (3.676)	11.322*** (3.579)				
Observations	35,208	35,208	35,208	35,208				
Control	Yes	Yes	Yes	Yes				
Fund FE	Yes	Yes	Yes	Yes				
Year-month FE	Yes	Yes	Yes	Yes				
Adj. R-squared	0.188	0.189	0.189	0.189				

This table reports robustness tests for the interaction between ESG scores and ESG concerns on fund flows. Panel A presents results using alternative minimum ESG coverage thresholds: Columns (1)–(4) use 67%, and Columns (5)–(8) use 75%. Panel B reports results using alternative rolling medians to construct the ESG Concerns Index: Columns (1)–(4) use a 3-month median, and Columns (5)–(8) use a 6-month median. Panel C extends the baseline specification by including lagged changes in fund ESG scores (Δ ESG) and their interaction with ESG concerns as additional controls. Each concerns index corresponds to its respective ESG dimension. Both ESG scores and concerns are lagged by one month. All regressions include lagged controls, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively

Appendix A

Table A1. Variable definition

Variables	Definitions	Source
Panel A. Fund flow		
FLOW	Monthly fund flow, calculated as the percentage change in the fund's total net assets, adjusted for reinvested returns. Reported as a percentage.	CRSP
Panel B. Fund-level ESG scores		
ESG	Overall ESG score of a fund, calculated as the value-weighted average of the ESG scores of fund's equity holdings.	Refinitiv & CRSP
ENV	Environmental score of a fund, calculated as the value-weighted average of the environmental scores of fund's equity holdings.	Refinitiv & CRSP
SOC	Social score of a fund, calculated as the value-weighted average of the social scores of fund's equity holdings.	Refinitiv & CRSP
GOV	Governance score of a fund, calculated as the value-weighted average of the governance scores of fund's equity holdings.	Refinitiv & CRSP
Panel C. Concerns index		
ESG CONCERNS	Index to measure public concerns on environmental, social, and governance issues, constructed using Google Search Volume	Google Trends
ENV CONCERNS	Index to measure public concerns on environmental issues, constructed using Google Search Volume	Google Trends
SOC CONCERNS	Index to measure public concerns on social issues, constructed using Google Search Volume	Google Trends
GOV CONCERNS	Index to measure public concerns on governance issues, constructed using Google Search Volume	Google Trends
Panel D. Fund characteristics		
SIZE	Fund size, calculated as the natural logarithm of the funds' total net assets.	CRSP
AGE	Fund age, calculated as the natural logarithm of the number of months since the fund's inception.	CRSP
RETURN	Monthly fund net return, reported as a percentage.	CRSP
CARHART ALPHA	Carhart four-factor alpha, estimated using a 36-month rolling window regression. Reported as a percentage.	CRSP
VOLATILITY	Standard deviation of returns over the previous 12 months. Reported as a percentage.	CRSP
TURNOVER	Annual fund turnover ratio, reported as a percentage.	CRSP
EXPENSE	Annual fund expense ratio, representing the portion of fund assets used to cover operating expenses and 12b-1 fees. Reported as a percentage.	CRSP

This table provides the definitions of the variables used in our analysis.

Table A2. Triple interaction: ESG scores, ESG concerns, and institutional fund dummy

Dependent variable	FLOW			
ESG Dimension	ESG	ENV	SOC	GOV
	(1)	(2)	(3)	(4)
ESG	0.007 (0.008)	-0.005 (0.006)	-0.005 (0.007)	0.002 (0.007)
CONCERNS x ESG	0.004 (0.003)	0.001 (0.001)	0.002 (0.002)	0.005 (0.003)
INST	1.018* (0.590)	0.455 (0.306)	1.085** (0.482)	1.177** (0.589)
INST x CONCERNS	-0.250 (0.245)	-0.178 (0.109)	-0.436** (0.213)	-0.628* (0.321)
INST x ESG	-0.016 (0.011)	-0.005 (0.006)	-0.014* (0.008)	-0.016* (0.010)
INST x CONCERNS x ESG	0.005 (0.005)	0.004* (0.002)	0.008** (0.003)	0.011** (0.005)
Constant	12.014*** (2.794)	12.597*** (2.795)	12.319*** (2.832)	12.060*** (2.787)
Observations	51,502	51,502	51,502	51,502
Control	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes
Year-month FE	Yes	Yes	Yes	Yes
Adj. R-squared	0.184	0.184	0.184	0.184

This table reports regression results for the triple interaction between ESG scores, ESG concerns, and the institutional fund dummy on fund flows. The dependent variable in all columns is fund flow. Columns (1)–(4) present results for the overall ESG score and each ESG dimension, with each concerns index corresponding to its respective dimension. Both ESG scores and concerns are lagged by one month. All specifications include lagged control variables, fund fixed effects, and year-month fixed effects. Robust standard errors, clustered at the fund level, are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.