Portfolio Structure and ESG Governance: Incentives for Stock-Picking, Monitoring, and Engagement

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Abstract

We use portfolio concentration as a framework to examine which funds identify and integrate material ESG information in their portfolio strategy. We address this question by studying mutual fund trades, identifying proxies for firm-level monitoring efforts, and firms' ESG performance. We find that concentrated funds actively direct their discretionary trades away from firms that will be involved in negative ES or governance-related incidents over the following four quarters. We find that portfolio concentration is effective in both the ESG-mandated and traditional fund segments. We additionally find significant evidence that increased monitoring incentives for concentrated funds are effective in disciplining firms' ESG behavior: decreased ownership and increased shareholder distraction of concentrated ESG and concentrated traditional funds are positively related to additional negative future (severe) ES and governance incidents. Additionally, in line with decentralized stewardship, we find that when concentrated ESG funds actively increase their ownership (through discretionary trades), both governance and SRI-themed shareholder proposals submitted to these firms are more likely to be withdrawn, suggesting that these owners exert their influence through private engagements.

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1 Introduction

Institutional investors differ in their incentives to engage with their portfolio holdings. There, however, remains an open debate about which topics these investors recognize as material to a firm's value and the extent to which their engagements can successfully impact their portfolio holdings (see, e.g., Lewellen and Lewellen, 2022). These uncertainties are particularly visible in the context of sustainable investing, where, despite recent outflows from sustainable-labeled assets (Morningstar, 2025), institutional investors continue to integrate ES information into their portfolio decisions[1]. Recent survey evidence by Edmans et al. (2025) suggests that both traditional and sustainable portfolio managers have similar beliefs about the link between ES performance and long-term firm value. Specifically, 51% of traditional and 74% of sustainable mutual fund managers now consider environmental and social (ES) factors in their stock selection to avoid downside risk, improve returns, or reduce volatility[2]. Nevertheless, whether and how these beliefs about ESG information translate into measurable trading, monitoring, and engagement behavior across different types of funds remains an open question. In this paper, we use portfolio concentration as a framework to examine which funds identify and integrate material ESG information in their portfolio strategy. Within samples of both ESG-mandated and traditional funds, we separate concentrated from diversified investors to examine which funds, through their trading, anticipate negative ES and governance events. Moreover, we analyze the extent to which monitoring attention and engagement by concentrated funds can discipline firms' ES(G) performance.

As concentrated portfolios hold fewer stocks with larger individual weights, they should be more effective monitors. This is motivated by two strands of literature. First, the portfolio choice literature argues that managers with superior information rationally hold concentrated portfolios to exploit their information advantages (Van Nieuwerburgh and Veldkamp, 2010), resulting in better risk-adjusted performance (Kacperczyk et al., 2005; Cremers and Petajisto, 2009). Second, the corporate governance literature argues that large ownership stakes and large portfolio weights incentivize monitoring by allowing shareholders to internalize more of the gains from active intervention (e.g., Grossman and Hart, 1980; Maug, 1998; Goetzmann and Kumar, 2008; Edmans, 2009; Fich et al., 2015). Moreover, in terms of effectiveness, firms with more concentrated institutional

[1] A Financial Times report from December 2023 noted that "The vast majority of investors and fund managers incorporate climate and social risk factors into their decisions even if they don't call it ESG.". See `https://www.ft.com/content/a76c7feb-7fa5-43d6-8e20-b4e4967991e7`. Moreover, earlier work by Krueger et al. (2020) finds that a majority of the fund managers believe that climate risk is financially material.

[2] In describing how these fund managers seek these value-enhancing trading opportunities, Edmans et al. (2025) reports that some interviewed institutional investors stated that they "assess ES through their own analysis, often focusing on qualitative factors unlikely to be priced in" (p.17).

ownership exhibit higher firm value and profitability (Ekholm and Maury, 2014). Information advantages and monitoring incentives are expected to be reinforcing in how institutional investors consider ESG issues in their portfolio decisions: concentrated funds have both the skill to identify ESG risks and have, at the same time, the economic incentive to act on that information, whether through informed trading or through engagement of individual stocks.

The prediction that concentrated portfolios should be more effective monitors, however, is at odds with the market-wide trend toward diversified, low-turnover portfolios[3]. Funds with more passive (and often lower-cost) index strategies tend to hold highly diversified (market) portfolios across hundreds or thousands of stocks. These funds should instead be subject to lower monitoring incentives as the incremental cost of gathering firm-specific information is high relative to the small portfolio weight and/ or small ownership stake of the individual holding (Iliev and Lowry, 2015; Heath et al., 2022). This notwithstanding, diversified funds can still have several reasons to monitor at least a subset of their holdings[4]. Index funds that cannot divest from poorly performing stocks may instead try to influence the companies they hold by exercising 'voice' Broccardo et al. (2022): large dollar stakes allocated to individual holdings (even though the percentage incentives are low) allow index funds to gain from engaging in corporate governance, resulting from increases in their AUM and the corresponding additional management fees (Appel et al., 2016; Lewellen and Lewellen, 2022). Work by Azar et al. (2021) finds that large index funds may direct substantial monitoring efforts through engagement toward large firms with high CO2 emissions in which they hold large stakes[5].

In this paper, we examine the extent to which portfolio concentration matters in how funds successfully integrate ESG information in their portfolio decisions. We address this question by studying mutual fund trades, identifying proxies for firm-level monitoring efforts, and firms' ESG performance in terms of ESG scores, carbon intensity, and negative ES and G incidents. If portfolio concentration lowers information processing costs such that funds can marginally profit from their information acquisition efforts, this should improve attention allocation to individual holdings, which (i) can influence funds' active trades, (ii) affect monitoring efforts and outcomes, and (iii) engagement choices. Using data on U.S. and European mutual fund quarterly stock holdings, we find that increased monitoring by both concentrated traditional and concentrated ESG funds drives stock

[3]From a performance perspective, Brøgger et al. (2025) find that more concentrated portfolios with fewer stocks are more likely to miss out on a small set of top-performing stocks.

[4]Larry Fink, CEO of BlackRock, one of the largest asset managers of passively managed index funds and ETFs, in his 2021 letter to CEOs, indicated his commitment to "put sustainability at the center of investment approach".

[5]On the other hand, work by Iliev and Lowry (2015) and Malenko and Shen (2016) find empirical evidence that diversified funds tend to rely on proxy advisors and vote in a standardized manner rather than engaging actively.

picking based on ESG information, especially when this information is on material ES and G events. Specifically, we estimate funds' discretionary trades (trades net of flow-induced, expected changes in positions), and find that concentrated funds direct these away from firms that will be involved in negative ES or governance-related incidents over the following four quarters. We find that these effects are strong on the intensive margin: concentrated ESG funds can identify and actively acquire fewer positions of future ES-incident firms, while diversified ESG funds do not significantly respond. On the extensive margin, we particularly find discrepancies between concentrated traditional funds and diversified traditional funds, with the former group actively liquidating their positions in firms ahead of upcoming incidents. We do not find the same convincing results in terms of trading ahead of improvements in firms' ESG scores or carbon intensity. Instead, concentrated funds are most effective in identifying ESG risks. These findings extend the framework on concentration as a source of skill by Kacperczyk et al. (2005) and Kacperczyk et al. (2014, 2016): informational advantages that generate return-based skill in those papers can be extended to the anticipation of material, ESG news by concentrated funds[6].

Next, we analyze the role of high portfolio turnover rate and high expense ratio, two features of active fund management that typically correlate with portfolio concentration. As actively managed funds tend to charge higher fees, trade more (higher turnover), and increase their portfolio concentration, it is challenging to pinpoint the exact characteristic of funds that explains their discretionary trading behavior with respect to ESG information. Portfolio turnover may capture a long-term versus short-term investment horizon, which affects the incentive to trade on ESG information (see e.g., Starks et al., 2026). We contribute to this discussion by re-running our baseline specification with triple-interaction specifications that distinguish between concentrated funds with a high versus a low turnover rate (or expense ratio). We show that portfolio concentration itself, rather than turnover or expense ratio, drives incident-anticipating trades. ESG mandates, to some extent, amplify the concentration effect but do not substitute for it. In fact, among funds with a longer horizon, trades of more concentrated portfolios still negatively relate to future ESG incidents, but the effect size is smaller for ESG funds (positive moderator). Our findings add to the work by Starks et al. (2026), who assign the ESG integration to differences in information advantages of long- and short-horizon investors. We specifically find that portfolio concentration behaves as a distinct channel that promotes information acquisition and processing, which can coexist with horizon-based explanations.

[6]Derrien et al. (2022) finds that negative ESG news deteriorates analysts' earnings forecasts. These analysts lower their forecast error.

Concentrated funds, particularly high-turnover concentrated ESG funds, are most assertive in tilting their discretionary trades away from ES and governance incident-prone stocks. Discretionary trades by low-expense or low-turnover diversified funds are positively related to ES and governance incident-prone stocks. At the same time, we find that a subset of concentrated traditional and concentrated ESG funds keep their ownership stake in as well as newly acquire incident-prone holdings[7]. Concentrated funds with a low turnover reduce their discretionary exposure to future incident stocks 3.11 to 4.79 times less than high-turnover concentrated funds. Instead, these funds may allocate monitoring efforts through voice to influence management to improve their portfolio firms' ESG performance (Edmans, 2009; Morgan et al., 2011). To evaluate this behavior, we first test whether the presence and monitoring intensity of concentrated mutual funds discipline firms regarding ESG incidents. Second, by analyzing shareholder withdrawals, we examine how concentrated funds use their ownership stake to engage with firms through voice.

First our findings on monitoring intensity contribute to the literature that studies the effect of shareholder attention and distraction (e.g., Fang et al., 2014; Kempf et al., 2017): by estimating separately for concentrated and diversified funds[8] an quasi-exogenous industry-shock distraction measure, we find that firms whose concentrated shareholders are increasingly distracted by unrelated industry shocks experience more future ES and governance incidents. On the other hand, in some specifications, we find that compared to the distraction of concentrated owners, additional distraction by diversified (ESG and traditional) shareholders is associated with fewer incidents. Simply considering the relationship between flow-induced ownership by diversified ESG and diversified traditional funds shows that these groups somewhat see a positive relationship with additional incidents, but these estimates are not statistically significant when we define portfolio concentration based on the number of holdings.

Second, to gain a deeper understanding of which funds are more likely to influence management decisions on governance and/ or ES performance through 'voice' (Edmans, 2009), we analyze shareholder proposals that are withdrawn by the proposal's sponsor (i.e., the issuer) before the proxy meeting. We see that when concentrated ESG funds increase their discretionary ownership stake for three consecutive quarters before the last shareholder meeting, there is a higher probability that the submitted shareholder proposals are withdrawn before going to a vote, suggesting successful private negotiations between firm management and the submitting shareholders (sponsors). This

[7]Work on mutual fund monitoring by Morgan et al. (2011) finds that low turnover funds are more likely to support shareholder proposals.

[8]We make for each of our four groups, concentrated ESG, concentrated traditional, diversified ESG, and diversified traditional funds, the shareholder distraction measure of (Kempf et al., 2017).

effect holds for both governance and SRI-themed proposals. Interestingly, flow-induced changes to the firm's ownership stake by diversified ESG funds are positively related to an increased probability that SRI-themed proposals are successfully withdrawn.

We interpret these findings as follows: concentrated owners seem to partake in more case-by-case monitoring, drawing on firm-specific information about firms' ES and governance risks that will materialize in the future. On the other hand, diversified (ESG) owners can influence firm behavior through more standardized and centralized stewardship frameworks, such as voting in line with proxy advisors (Iliev and Lowry, 2015; Malenko and Shen, 2016). Supporting this reasoning, we find evidence that additional distraction by diversified (ESG and traditional) shareholders is associated with fewer incidents. We argue that centralized stewardship frameworks remain in place even when individual attention is limited. This contrasts with the findings for concentrated funds.

Our findings nuance the conclusions of Lowry et al. (2026), who emphasize the importance of portfolio concentration specifically for committed ESG funds in facilitating their engagement efforts. Instead, we find that traditional funds that choose to concentrate their portfolios similarly exhibit stock-picking skill on ES and G incidents while also being effective monitors of firms' (severe) ES and governance risks. ESG mandates may amplify this behavior, as pointed out by Dikolli et al. (2022) and Edmans et al. (2025).

Our work contributes to the literature on shareholder proposals. Shareholder proposals that end up going up for a vote are researched extensively in corporate governance literature as well as work on ES(G) engagements (see e.g., Dimson et al., 2015; Iliev and Lowry, 2015; Flammer et al., 2021; Chen et al., 2020; Dikolli et al., 2022; He et al., 2023; Michaely et al., 2021; Lowry et al., 2026). We instead focus on shareholder proposals that get withdrawn, effectively forming a proxy for private engagements with firm management. We build on work by Bauer et al. (2015) by enriching the discussion of private engagements by showing that the composition of the broader shareholder base matters: changes in (discretionary) ownership of concentrated ESG funds are positively correlated to the probability of withdrawal.

We additionally contribute to new work on centralized and decentralized stewardship (Herrmann et al., 2025; Malenko et al., 2026): our findings on increased concentrated owners' distraction are in line with the argument that decentralized stewardship delegated to fund managers of concentrated portfolios can improve governance of holdings when the decentralized stewardship is demanded through strong investor preferences. We find that our sample of diversified ESG funds shows monitoring and engagement behavior more in line with centralized stewardship.

The remainder of the paper is organized as follows. Section 2 describes our fund and holdings data, and fund concentration measures. Section 3 presents our measures of active fund trades and estimates changes to firm ownership stakes. In Section 4, we consider the extent to which concentrated funds anticipate ESG performance and risky events. Section 5 details firm-level monitoring and engagement efforts and links these to several ESG performance measures. Section 6 concludes.

2 Data

2.1 Fund and holdings data

From Morningstar Direct, we retrieved monthly data (in USD) on a sample of European and US open-end equity mutual funds between December 2014 and December 2022. We filter for mutual funds domiciled in Europe[9] or the United States, and similar to Ceccarelli et al. (2024), we remove regional and sector-specific equity funds[10]. For our sample of fund share classes with an available ISIN, we download the funds' annual net expense ratios from Datastream (LSEG). While Morningstar provides data at the share-class level, we use their FundId identifier to aggregate returns, net expense ratios, and assets under management (AUM). To aggregate share-class returns to the fund level, we value-weight the returns and expense ratios using the share-classes' lagged total net assets. We calculate the age of the fund based on the inception date of the oldest share class. We calculate fund portfolio turnover by taking the lesser of purchases or sales, and dividing that by the fund's quarterly net assets at the end of the previous quarter.

Following Ceccarelli et al. (2024), we limit our sample to fund periods in which mutual funds are at least 1 year old. Additionally, we require them to have assets under management of at least 1 million USD in our sample. In addition, consistent with the price pressure literature, we remove funds that experienced extreme changes in TNA (Coval and Stafford, 2007). We require funds to see TNA changes within the bounds of -0.5 to 2 ($-0.5 < \Delta TNA_{i,t}/TNA_{i,t-1} < 2.0$).

To identify funds classified as 'ESG' funds, we use the Morningstar Sustainable Attributes framework, which identifies funds deemed a 'General ESG Investment'. Morningstar, in their 2022 report, describes that "General ESG Investments endeavor to promote sustainability and minimize

[9]This includes all countries part of the EEA as well as the United Kingdom, Norway, Switzerland, and Liechtenstein.

[10]We include funds with the following Morningstar Categories: 'Global Emerging Markets Equity', 'Global Equity Large Cap', 'Global Equity Mid/Small Cap','Europe Emerging Markets Equity', 'Europe Equity Large Cap', 'Europe Equity Mid/Small Cap', 'Equity Miscellaneous', 'UK Equity Large Cap', 'UK Equity Mid/Small Cap', 'US Equity Large Cap Blend', 'US Equity Large Cap Growth', 'US Equity Large Cap Value', 'US Equity Mid Cap', 'US Equity Small Cap'

negative impact, without focusing on a specific theme or area of action" (p. 1)[11]. Morningstar determines whether a mutual fund is an ESG Investment "after a review of the prospectus or offering documents most relevant in the investment products country of registration" (p. 1). We consider a mutual fund to be 'ESG' fund if, during the majority of our time series, the respective fund is classified as such by Morningstar. In our sample of fund-quarters, 28% are from ESG Funds, and we consider the remaining 72% to pertain to conventional funds. We identify 3,102 ESG and 7,694 conventional equity funds.

We additionally gather from the MSCI fund universe the funds' portfolio ESG scores. The ratings range from 0 to 10, and are calculated by taking the weighted average ESG score of the funds' underlying holdings.

We are able to match our Morningstar fund database to mutual fund holding information provided by the FactSet ownership module (see also the work by Ferreira and Matos, 2008; Ceccarelli et al., 2023). Using the ISINs of the share classes reported by Morningstar, we obtained quarterly equity holdings data from FactSet (formerly Lionshares) for our equity mutual fund sample from December 2014 to December 2022. In Appendix B.1.1 we describe the matching process of FactSet Ownership data to our sample of open-end equity data from Morningstar. We drop funds that we cannot match to FactSet Ownership. Although funds often comprise multiple share classes, they are matched to a single portfolio of holdings. Therefore, for every fund, in every quarter, we identify the first share class for which FactSet reports its holdings.

2.1.1 Measuring fund concentration

Fund managers can limit the monitoring costs of their individual holdings by limiting the number of stocks in their portfolio[12]. The literature on portfolio diversification describes two measures of portfolio concentration: (i) the number of stocks held by the fund (Goetzmann and Kumar, 2008); and (ii) a portfolio concentration measure using the portfolio weights of the holdings, e.g., the fund portfolio Herfindahl Index (Demsetz and Lehn, 1985) or industry concentration (Kacperczyk et al., 2005).

In this paper, we define a fund as *concentrated* if its holdings in quarter t are below the median number of holdings held by our cross-section of funds. Otherwise, we indicate that this fund is

[11] Morningstar Sustainable Attributes, 2022: `https://assets.contentstack.io/v3/assets/blt4eb669caa7dc65b2/bltd622f21f7860fdb4/Morningstar_Sustainable_Attributes_Definitions.pdf`

[12] Faccio et al. (2011) finds a negative, but weak correlation of -0.31 between the size of the ownership stake and the number of firms in which a company's largest shareholder holds shares.

diversified[13]. On average, funds hold 178 to 179 holdings. The overall median number of holdings is 64, consistent with the literature on portfolio concentration in actively managed funds (Kacperczyk et al., 2005).

Alternatively, we estimate the fund portfolio's Herfindahl index on a quarterly basis[14]. Per quarter, we normalize the fund weights so that these add up to 1[15]. Similarly to our concentration indicator based on the number of holdings, funds whose Herfindahl index is higher than the median across all funds are indicated as concentrated, and diversified otherwise.

In Table 2, we perform a balance test on the fund characteristics of our defined sets of concentrated and diversified funds. Panel A reports the balance test for funds that in quarter t have a below-median number of holdings; Panel B reports the mean differences of diversified and concentrated funds based on the funds' quarterly Herfindahl index. We find that concentrated funds, on average, have larger cash positions, are smaller in terms of assets under management, and have a higher expense ratio[16], and have a slightly lower turnover rate.

Interestingly, concentrated funds are more likely to be an 'ESG' fund (as classified by Morningstar), and have a higher fund ESG score by 0.24-0.35 points (as calculated by MSCI using the ESG scores of the underlying portfolio firms). Similarly, Jin et al. (2025) find that ESG funds hold fewer stocks than their respective (ESG) benchmarks than conventional funds. Furthermore, we note little significance difference between the quarterly flows as well as the age of concentrated and diversified funds.

2.1.2 Stock sustainability performance and controls

To our global sample of 31,824 primary stocks, we match quarterly Compustat (and CRSP) accounting- and market-based data following Jensen et al. (2022). To see whether mutual funds can select stocks that in the future will see improvements in their sustainability behavior, we consider various metrics that we match to our fund-holding-quarter panel: 1) MSCI ESG scores (industry-weighted and equal-weighted), 2) RepRisk incidents, and 3) revenue-weighted Scope 1 and 2 carbon

[13]We include both passive and active funds. Work by (Lin et al., 2025) finds that both active and passive ESG funds tend to be more concentrated (hold fewer stocks) than their benchmark indices.

[14]Kacperczyk et al. (2005) estimates fund concentration as the portfolios' deviations of industry composition (in terms of weights) from those of the (10 industry) market portfolio. Their results are qualitatively similar when defining fund concentration on the portfolio Herfindahl index.

[15]FactSet Ownership reports all holdings of our sample of equity funds. This does not only include primary stocks, but can also be private equity, cash, short positions, or other non-equity holdings. Moreover, we note in Appendix B.1.1 that we trim the holdings data for data errors. Hence, in calculating the fund Herfindahl index, we restrict the calculation to our sample of funds for which the sum of holding weights in the cross-section ranges from 50 to 120 percent. We furthermore trim our Herfindahl index for fund-quarters with at least ten primary stock holdings.

[16]As we include passive funds, this could be one of the drivers of the lower expense ratio for our sample of diversified funds. However, higher expense ratios could additionally reflect active fund management.

emissions from Refinitiv.

Recent literature emphasizes the role of firm ESG ratings in influencing mutual fund trading decisions (Gantchev et al., 2023; Berg et al., 2024; Ceccarelli et al., 2023). MSCI, in particular, is one of the most influential (Berg et al., 2024; Serafeim and Yoon, 2023): among the largest 100 ESG funds globally, 17% used MSCI for benchmarks and ESG data in 2022[17]. ESG scores issued by MSCI assess the extent to which firms are exposed to financially material Environmental, Social, and Governance risks. Moreover, MSCI assesses how the firm manages these risks. MSCI calculates two ESG scores, a raw "Weighted Average Key Issue Score" (or key pillar score), that weights all ESG issue based on financial materiality, and an "Industry-Adjusted Score" that benchmarks raw key issue scores to industry peers. Both scores range from 0 to 10, with 0 indicating the worst management of ESG risks. Industry-Adjusted Company scores are finally mapped to MSCI's letter ratings, helping investors distinguish leaders, laggards, and average ESG performers. We calculate the absolute future change in quarterly key pillar and industry-weighted MSCI ESG scores between the end of the current quarter t and the end of quarter $t+s$ in which s denotes the number of lead quarters: ΔMSCI raw $\text{ESG}_{j,t+s}$ = MSCI raw $\text{ESG}_{j,t+s}$ − MSCI raw $\text{ESG}_{j,t}$ and ΔMSCI $\text{ESG}_{j,t+s}$ = MSCI $\text{ESG}_{j,t+s}$ − MSCI $\text{ESG}_{j,t}$, respectively. We use both the key pillar and industry-weighted ESG scores, as the firm's former score is not affected by its peers' behavior. Hence, we aim to assess whether funds can predict a firm's ESG risk management or changes in its ESG score relative to peers. The average change in the key pillar MSCI ESG scores between t and $t+4$ is 0.09 points. For the industry-adjusted ESG score, this is 0.18 points between quarters t and $t+4$. The standard deviation is higher for future changes in industry-weighted MSCI scores, indicating that industry peers' behavior adds additional variation to firm ESG scores.

We complement these two metrics with data from RepRisk. RepRisk screens large sets of documents and media (e.g., print media, government bodies, social media, and newsletters) on a daily basis and monitors material ESG risks of companies across 23 languages. They deliberately omit information disclosed by the company. From 2007 onward, RepRisk has recorded company-level risk incidents, classifying them according to 28 mutually exclusive ESG issues[18]. Environmental issues include, for example, climate change, pollution, and waste. Social issues include child labor, human rights abuses, and discrimination.

In this paper, we collect the number of incidents labeled by RepRisk as negative environmental or

[17] `https://www.opimas.com/research/874/detail/`

[18] The Issues were defined per key international standards set by, for example, the World Bank, OECD, and United Nations. `https://www.reprisk.com/content/static/reprisk-esg-issues-definitions.pdf`

social issues for each firm-quarter. RepRisk's coverage increases over time, both in terms of reported incidences and unique firms (He et al., 2023; Derrien et al., 2022). Additionally, RepRisk ranks reported incidents by 'severity' based on the consequences for ESG issues. Severity is measured on a scale from one to three, where two and three represent 'Severe' and 'Very severe', respectively. # environmental and social (ES) incidents$_t$ denotes the sum of all RepRisk incidents of firm j that occur throughout quarter t at the final day of that quarter, that are characterized as an environmental or social issue. As RepRisk is news-based rather than company disclosures, it may better reflect the company's outcomes in managing ESG risks than ESG scores. Investors may use forward-looking information to stock-pick holdings that see fewer environmental and social, or governance-assigned incidents in the future.

Following He et al. (2023), we calculate the cumulative number of future incidents of the start of quarter $t+1$ up to and including the end of future quarter $t+4$: # ES incidents$_{t+4}$. # severe ES incidents$_{t+s}$ denotes the cumulative number of all RepRisk incidents of firm j that are characterized as an environmental or social issue with severity rank two or three from the beginning of quarter $t+1$ up to and including the end of quarter $t+4$. Moreover, # G incidents$_{t+s}$ denotes the cumulative number of all RepRisk incidents of firm j that are characterized as a governance issue from quarters $t+1$ to $t+4$.

Table 1 shows that the median number of environmental and social incidents per firm for four consecutive quarters is 0, the mean is 1, and the 99th percentile is 18 incidents. For ES incidents that are categorized by RepRisk as "severe" this is, respectively, 0, 0.33, and 7, which shows that the majority of RepRisk's environmental and social incidents are not severe[19].

Next to count variables, we follow Derrien et al. (2022) and create dummies $= 1$ incident$_{t+4}$ and > 1 incident$_{t+4}$ that take on the value 1 when the firm, respectively, is exposed to a single or more than one negative (severe) ES or governance-associated RepRisk incident in the future quarter $t+4$. This setup reduces the weight given to firms that see an extreme number of negative incidents.

Lastly, Refinitiv (LSEG) estimates firm-level carbon intensity using data from publicly disclosed firm documents, such as annual reports, sustainability reports, company websites, and/or filings. The CPD data are used for data from 2015 onward. Quarterly-level carbon intensity is measured as tonnes of Scope 1 and Scope 2 CO2 emissions per million USD of firm revenue. Refinitiv winsorizes outliers in the reported data, and extrapolates reported years to non-reported years[20]. To measure

[19] An example of a non-severe (ranked one on RepRisk's severity scale) is Dunkin' Donuts sourcing palm oil from suppliers that contribute to the destruction of rainforests.

[20] `https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-climate-data-package-ghg-emissions-methodology-process.pdf`

future improvements in firm CO2 emissions, we calculate the percentage change between a firm's current carbon intensity in quarter t and future carbon intensity in quarter $t+4$ in which 4 denotes the number of lead quarters. We winsorize $\Delta CarbonIntensity_{j,t+4}$ at the 1st and 99th percentiles. As Refiniv makes use of both firms' self-disclosed carbon emissions and estimated scope 1 and 2 emissions, as a robustness we additionally calculate the change in future carbon intensity only for the quarters for which the underlying carbon emissions data is disclosed: $\Delta CarbonIntensity^{disclose}_{j,t+4}$. Table 1 shows that for our sample of stock issuers, the median change in firm-disclosed carbon intensity between the current quarter and the quarter in a year is -0.06%.

With regards to stock-level controls, we follow Jensen et al. (2022). All accounting data are assumed to have a four-month lag between the end of the firm's fiscal period and public availability. Values in local, non-US currencies are again converted using the most recent foreign exchange rate from Compustat. Similar to Gantchev et al. (2023) we control for: 1) We calculate the natural logarithm of the company's market capitalization, *ln Market Capitalization*; 2) the ratio of gross debt to book value of assets, *Leverage*; 3) the firm's book value over the most recent market capitalization, *Book/ Market*; 4) the quarterly stock return *Quarterly stock returns*; 5) the firm's 1-year sales growth, *Sales Growth*; 6) the firm's quarterly income scaled by the book value of total assets, *ROA*; 7) capital expenditure over the book value of a firm's assets, *CAPEX/ Assets*; and 8) the annualized standard deviation of daily returns over the previous 12 months, *Return volatility*. We winsorize the continuous control variables on the 1st and 99th percentiles.

From MSCI (through FactSet), we retrieve data on the firm's index inclusion in MSCI's All Country World Index. Of our sample, on average, 8% of the firms are included in the MSCI All Country World Index between quarters 2015-Q1 and 2022-Q4. We report the descriptives of all stock and firm-level controls in Panel B of Table 1.

3 Trading and ownership measures

3.1 Measuring trades by mutual funds

For our sample of European and US mutual funds, we are interested in the stock-picking behavior of ESG and conventional funds. Hence, we estimate the discretionary trades of mutual funds.

To detangle discretionary trading from the fund's total position changes, we need to isolate the fund's flow-driven trades (e.g., Coval and Stafford, 2007; Van der Beck, 2021; Heath et al.,

2023; Albuquerque et al., 2025). Flow-driven, or 'expected', trades assume that mutual funds maintain their percentage of holdings of stock j at the beginning of the quarter, $w_{i,j,t-1}$, and reinvest incoming dollar flows proportionally[21]. Discretionary trades are any trades made that deviate from these expected trades, as approximated by the quarterly position changes of the fund.

Following Ceccarelli et al. (2024); Gantchev et al. (2023); Giannetti and Jotikasthira (2024), we define fund i's total trades of stock holding j between quarters $t-1$ and t as the total dollar position changes in holding j, over the fund's previous quarter's total assets under management: *Position change* in a stock, measured as the change in the position of fund i in stock j in quarter t:

$$\textit{Position change}_{i,j,t} = \frac{Price_{j,t-1} \times (NumberShares_{i,j,t} - NumberShares_{i,j,t-1})}{AUM_{i,t-1}} \tag{1}$$

$\textit{Position change}_{i,j,t}$ captures both flows-driven expected trades and discretionary trades. To We first determine the quarterly flows of fund i between quarters $t-1$ and t following Sirri and Tufano (1998):

$$Flow_{i,t} = \frac{[TNA_{i,t} - TNA_{i,t-1} * (1 + R_{i,t})]}{TNA_{i,t-1}} \tag{2}$$

where $TNA_{i,t}$ is the total net assets for fund i at the end of the quarter t, and $R_{i,t}$ is the quarterly return for fund i in quarter t. As our fund data from Morningstar is on a monthly basis, we compound our monthly fund returns into quarterly fund returns.

Second, we define expected trades of stock j for every quarter t as the buys of shares (sales) resulting from a prorated dollar flow coming in (out of) the fund, keeping previous quarters' holding weights constant:

$$\begin{aligned} \textit{Expected position change}_{i,j,t} &= \frac{Weight_{i,j,t-1} \times (Flow_{i,t} \times TNA_{i,t-1})}{TNA_{i,t-1}} \\ &= \frac{Position_{i,j,t-1} \times Price_{j,t-1} \times Flow_{i,t}}{TNA_{i,t-1}} \end{aligned} \tag{3}$$

where $Position_{i,j,t-1}$ is the number of shares held of stock j by fund i in quarter $t-1$ and $Weight_{i,j,t-1}$ is the weights of stock holding j in fund i in quarter $t-1$[22]. $Flow_{i,t}$ are percentage quarterly flows as defined in Equation (2). Simplifying Equation (3), we estimate the expected position changes of fund i in stock j in t as $Weight_{i,j,t-1} \times Flow_{i,t}$.

[21] Coval and Stafford (2007) finds that between 1980 and 2004, funds maintain 27 to 45 percent of their positions following different degrees of inflows and outflows.

[22] While we use the weights provided by the FactSet Ownership module, one may calculate these portfolio weights manually as $\frac{Price_{j,t-1} \times NumberShares_{i,j,t-1}}{TNA_{i,t-1}}$.

To approximate stock-picking behavior, we measure the deviations from the expected trading behavior of funds. We estimate discretionary position changes as the difference between fund i's total position changes and fund i's expected position changes of stock holding j between $t-1$ and t:

$$\textit{Discretionary position change}_{i,j,t} = \textit{Position change}_{i,j,t} - \textit{Expected position change}_{i,j,t} \quad (4)$$

Stocks that in quarter $t-1$ were not being held by the fund (i.e., $Position_{i,j,t-1} = 0$) would see an expected trade of 0. We include discretionary trades made by funds to holdings they, in the previous quarter $t-1$, did not yet hold. Similarly, we include holdings that are completely sold off between quarter $t-1$ and t. On the extensive margin, funds may make informed decisions about which holdings to include and which to divest fully. To control for outliers in our trade estimates, we trim the measures *Position change*$_{i,j,t}$ and *Expected position change*$_{i,j,t}$ on the 0.5 and 99.5th percentiles. *Discretionary position change*$_{i,j,t}$ is the difference of these two trimmed measures. Panel A of Table 3 reports the summary statistics of the aggregate as well as the expected and discretionary position changes.

3.2 Measuring changes in firm ownership

To analyse engagement and/ or monitoring effects, we conduct various empirical analyses at the firm level: for each stock in our sample of fund holdings, we consider the changes in concentrated and diversified i) expected and ii) discretionary *ownership* between quarter $t-1$ and t. We define total changes in ownership of firm i based on the changes in portfolio positions of funds i as:

$$\begin{aligned} \textit{Total ownership}_{j,t} = & \frac{\sum_i \Delta Position_{i,j,t} | flow_{i,t} > 0}{ShareOutstanding_{j,t-1}} \\ & + \frac{\sum_i \Delta Position_{i,j,t} | flow_{i,t} < 0}{ShareOutstanding_{j,t-1}} \end{aligned} \quad (5)$$

We then estimate the flow-induced changes in ownership of fund i per stock j (Coval and Stafford, 2007; Huang et al., 2023; Wardlaw, 2020). We define expected trades of stock j for every quarter t as the buys (sales) of shares resulting from a prorated dollar flow coming in (out of) the fund:

$$\textit{Expected ownership}_{j,t} = \frac{\sum_i (Position_{i,j,t-1} \times flow_{i,t} | flow_{i,t} > 0)}{SharesOutstanding_{j,t-1}} + \frac{\sum_i (Position_{i,j,t-1} \times flow_{i,t} | flow_{i,t} < 0)}{SharesOutstanding_{j,t-1}} \quad (6)$$

where $Position_{i,j,t-1}$ is the number of shares held of stock j by fund i in quarter $t-1$ and $flow_{i,t}$ is defined as in Equation (2). *Expected Ownership*$_{j,t}$ denotes the net expected increases in ownership of stock j. Stocks that in quarter $t-1$ were not being held by the fund (i.e., $Position_{i,j,t-1} = 0$) see an expected trade of 0. We normalize expected trades by the shares outstanding of firm j to prevent creating a mechanical correlation with returns (Wardlaw, 2020).

To measure the deviations from the flow-induced changes in mutual fund ownership, we define discretionary trading of stock j as[23]:

$$\textit{Discretionary ownership}_{j,t} = \textit{Total ownership}_{j,t} - \textit{Expected ownership}_{j,t} \quad (7)$$

such that we can define the firm-level measures of changes in discretionary and expected ownership for our four groups of mutual funds: i) concentrated ESG, ii) concentrated traditional, iii) diversified ESG, and iv) diversified traditional (see Panel B of Table 3 for summary statistics).

4 Discretionary trades and future governance and ES performance of holdings

In this section, we analyze whether fund portfolio concentration can be a source of conviction and skill in funds' ability to anticipate and avoid material ESG events. Through stock-picking and/or market timing, fund concentration has been considered to be a source of outperformance (see work by Kacperczyk et al., 2005, 2014, 2016). To empirically examine whether similar monitoring benefits are present in the context of firms' governance and environmental and social performance, we conduct a set of analyses that quantify the extent to which concentrated funds direct their discretionary trades away from negative governance or ES-related incidents. In addition to measuring the extent to which concentrated funds can anticipate ES or governance risks, we examine whether

[23]Previous work on price implications of fire-sales–e.g., Coval and Stafford (2007) and Huang et al. (2023)–tend to only allow mutual funds to buy during quarters with top decile inflows and sell over quarters with bottom decile outflows, all other trades are assumed to be equal to zero. That is: $\frac{\sum_i (max(0, \Delta Holdings_{i,j,t}) | flow_{i,t} > 90\%ile)}{SharesOutstanding_{j,t-1}}$ and $\frac{\sum_i (max(0, -\Delta Holdings_{i,j,t}) | flow_{i,t} < 10\%ile)}{SharesOutstanding_{j,t-1}}$. In our specification, we loosen these constraints and allow for opposite discretionary changes in ownership in case a fund sells (buys) in quarters with inflows (outflows).

these funds actively trade toward firms that in the future will improve their overall ESG profiles (as measured through MSCI key pillar and industry-adjusted ESG scores) or scope 1 and 2 carbon intensity.

To evaluate whether trades by concentrated funds are driven by stock-picking based on ESG information, we focus on funds' discretionary trades. Our main regression is

$$\begin{aligned} \textit{Discretionary position change}_{i,j,t} = \alpha + \beta_1 \Delta \textit{MSCI ESG}_{j,t+4} + \beta_2 \Delta \textit{MSCI ESG}_{j,t+4} \times \textit{Concentrate}_{i,t} \\ + \beta_3 \# \textit{ Incidents}_{j,t+4} + \beta_4 \# \textit{ Incidents}_{j,t+4} \times \textit{Concentrate}_{i,t} + \gamma' \mathbf{X}_{j,t-1} + \theta_{i,t} + \varepsilon_{i,j,t} \end{aligned} \tag{8}$$

where we $\textit{Discretionary position change}_{i,j,t}$ are the changes in fund i's quarterly position changes in firm j that deviate from a pro-rata allocation of fund flows toward the funds' previous quarter $t-1$'s portfolio holdings (see Equation (7)). $\textit{Concentrate}_{i,t}$ is an indicator that equals one for funds that in quarter t have a concentrated portfolio, zero otherwise. We define a fund to be concentrated when its holdings in quarter t are below the median number of holdings held in the cross-section (our measure at baseline), or when the fund's portfolio Herfindahl index is above the median in the fund cross-section (results with this concentration measure are tabulated in Appendix B). To measure firm improvements to their overall ESG performance, we include $\Delta \textit{MSCI ESG}_{j,t+4}$, which denotes the absolute change in key pillar or industry-adjusted MSCI ESG scores between the end of quarter t and future quarter $t+4$. $\# \textit{ incidents}_{j,t+4}$ refers to the cumulative number of RepRisk ES incidents, of RepRisk governance incidents between the beginning of future quarter $t+1$ and the end of future quarter $t+4$. $\boldsymbol{X}_{j,t-1}$ contains one-quarter lagged firm controls that could affect the funds' changes to their positions: ROA, leverage ratio, book-to-market, market capitalization, 12-month sales growth, quarterly stock returns, stock's level MSCI ESG score, and dummy variable $ACWI$ indicating whether the firm was included in the MSCI All Country World Index or not. We include fund $\times$ year-quarter fixed effects $\theta_{i,t}$ to ensure we compare trading decisions within a fund's portfolio, and cluster standard errors at the fund level.

Since we would like to shed light on how monitoring benefits may incentivize concentrated fund managers to stock-pick based on ES(G) information, we run Equation (8) separately for traditional funds and ESG-mandated funds[24]. As pointed out by Edmans et al. (2025), ESG funds may share

[24]Morningstar determines whether funds can be categorized as a "General ESG Fund" by reviewing funds' prospectuses or other offering documents. See also Section 2.1. In Appendix B.2.13, as per the MSCI ESG framework, we alternatively define an ESG fund as a fund that has an MSCI Fund ESG score of 7.143 or higher. We find similar results for how these funds anticipate future ES incidents. However, as correlated with their fund ESG score, ESG Leader funds can positively tilt their active trades toward firms that increase their ESG scores between the current quarter t and $t+4$.

similar beliefs to traditional funds concerning investing using information of firms' ES performance; but their mandates can sometimes constrain fund managers from making their preferred stock selections.

In columns (c)-(d) of Table 4, we report the regression results of Equation (8). As fund discretionary changes are defined as the difference between a fund's total position changes and its expected position changes, we report these trades in columns (a)-(b) and columns (e)-(f), respectively. The sum of the estimated coefficients of *Discretionary position change*$_{i,j,t}$ and *Expected position change*$_{i,j,t}$ should equal those of *total position change*$_{i,j,t}$. We determine fund concentration through the number of holdings. Online Appendix B.2.1 (Table IA.1) shows the regression results when we define fund concentration using the fund portfolio's Herfindahl index.

We find that both ESG and conventional mutual funds with more diversified portfolios tend to increase their total (columns (a)-(b)) and discretionary (columns (c)-(d)) positions in stocks that experience an increase in MSCI industry-adjusted ESG ratings, $\Delta MSCI\ ESG_{j,t+4}$, over the next 4 quarters. Higher portfolio concentration does not moderate this response, i.e., more concentration does not imply better stock picking due to monitoring benefits[25]. Expected position changes (columns (e)-(f)) reflect the historic trading decisions that affected the funds' portfolio composition. Especially concentrated ESG funds, and concentrated traditional funds have lower portfolio weights in future ES incident firms.

Concerning future environmental or social (ES) incidents, ESG funds significantly reduce their discretionary positions in stocks with more future ES incidents, while diversified conventional funds increase their positions in ES incident stocks. However, we find that across both ESG and conventional funds, more concentrated funds experience a stronger negative trading response to future ES incidents, compared to more diversified funds: for a concentrated traditional fund, an additional ES-related incident between future quarters $t+1$ and $t+4$ is associated with a 0.00006 percentage point decrease in the discretionary position change, which is a net selling response. For concentrated ESG funds, this is a 0.00024 percentage point decrease in their discretionary positions.

While this effect seems economically small, in Table IA.11 in Appendix B.2.11 we follow Derrien et al. (2022) and substitute the cumulative number of negative ES-related incidents with a set of dummy indicators, $= 1$ ES Incidents$_{t+4}$ and > 1 ES Incidents$_{t+4}$, indicating whether firm j is exposed to a single, or more than one negative ES incident in future quarter $t+4$. Relative to

[25]In Appendix B.2.7 and B.2.8 we replace the industry-adjusted ESG score with the MSCI key pillar score. These firm scores do not depend on the firm's peers and should represent the firm's absolute ESG performance. We find that concentrated traditional funds increase their discretionary exposure to firms that improve their ESG performance between the current quarter t and future quarter $t+4$.

holdings that will not experience any negative ES-related events in the future, those that will be affected by an ES incident see concentrated ESG funds reduce their discretionary positions in these by $-0.00172 - 0.01109 = -0.01281$ percentage points. Concentrated traditional funds are more likely to reduce their discretionary exposure to holdings that experience more than one ES incident in four quarters from now. In Appendix B.2.12, we only consider future ES-associated incidents that have been indicated by RepRisk to be 'severe'. The effect sizes for both concentrated ESG and concentrated traditional funds become more negative.

The corporate governance literature argues that concentrated funds incur lower processing costs when identifying and targeting firms based on their value-enhancing or value-destroying activities. Traditionally, concentrated investors have been best positioned to detect and act on activities related to firm governance, such as misconduct, corporate culture, or excessive executive pay (Edmans, 2014; Dyck et al., 2019). Table 5 reports the relationship of concentrated discretionary trades on future firm governance incidents. Consistent with the literature suggesting that governance issues affect shareholder returns and therefore could affect fund managers' trades, we find that both ESG and traditional active strategies reduce positions in stocks with more future governance incidents. Specifically, more portfolio concentration is associated with a stronger negative response of both total and discretionary trading to future G incidents[26].

In Table 6, we additionally check whether concentrated funds expose their discretionary trades increasingly to firms that will decrease their self-disclosed carbon intensity levels in four quarters from now, $\Delta CarbonIntensity^{disclose}_{j,t+4}$. Both diversified ESG and diversified traditional funds decrease their (active) positions in stocks that later experience increased carbon intensity. Concentrated ESG funds tend to increase positions, suggesting that portfolio concentration does not help to improve ESG fund managers' ability to underweight stocks that later have weaker carbon footprints. However, when we change the definition for fund concentration to that using the Herfindahl index, the interaction effect of $\Delta CarbonIntensity^{disclose}_{j,t+4}$ and $concentrate_{i,t}$ becomes insignificant (see Online Appendix B.2.3)[27].

To better compare the stock-picking abilities of ESG concentrated versus concentrated traditional funds, in Appendix B.2.16 and B.2.18 we extend the baseline split-sample estimation of Equa-

[26]It is, however, possible that, as found by work by Kacperczyk et al. (2014, 2016), funds can "time" this rising attention for future incident firms, but we do not explicitly test for this here. By including fund × year-quarter fixed effects, we control for fund-specific trends. In Online Appendix B.2.14 and B.2.15, we additionally control for stock-year-quarter effects to ensure we compare the discretionary trades between diversified and concentrated funds of the same set of stocks.

[27]We also estimate the (untabulated) same specification using both disclosed and estimated carbon intensity data by Refinitiv, $\Delta CarbonIntensity_{j,t+4}$. Here, potentially artificiality deflated the estimated scope 1 and scope 2 data jumps to higher levels the moment the firm starts to self-disclose its carbon emissions.

tion (8) by pooling ESG and traditional funds and estimating a triple interactions: $\Delta MSCI\ ESG_{j,t+4} \times Concentrate_{i,t} \times ESG\ Fund_{i,t}$ and $\#\ Incidents_{j,t+4} \times Concentrate_{i,t} \times ESG\ Fund_{i,t}$. We find that concentrated Morningstar classified ESG funds discretionarily reduce their positions ahead of future ES (-0.0001 at 10%), and governance-related incidents (-0.0002 at 10%), which is consistent with both the view that concentrated portfolios enhance monitoring incentives (Kacperczyk et al., 2005; Fich et al., 2015) and that at least some ESG-labeled funds act in line with their underlying ESG fundamentals (Gibson Brandon et al., 2022; Raghunandan and Rajgopal, 2022). By contrast, MSCI ESG Leader funds seem to actively track the ESG methodology of their portfolio holdings and potentially make predictions about future changes to their holdings' ESG scores[28]. As the future changes in holdings' MSCI ESG scores will consequently determine funds' ESG "Leader" status, in line with Gantchev et al. (2023), we find that individual stocks' ESG ratings incentivize active fund trading. Fund concentration amplifies this behavior.

4.1 Directions of discretionary trades

Our baseline analyses show that concentration skill manifests not only in returns but in the ability to anticipate and avoid material ESG events. Our measure for discretionary trades does not distinguish between the intensive and extensive margin. From a monitoring perspective, we argue that concentrated funds should make more informative trades concerning their pre-existing holdings compared to holdings they newly acquire.

In Table 7, we further explore how concentrated and diversified mutual funds collect and process forward-looking ESG information, we detangle funds' discretionary trading of Equation (8) into *D(Acquire)*, which indicates that the fund newly invests in a position in a given stock between quarters $t-1$ and t (columns (a)-(b)). *D(Active buy)* indicates that the fund increases its position in a given stock more than expected between quarters $t-1$ and t, given its inter-quarter flows between quarters (columns (c)-(d)). *D(Active sell)* indicates that the fund decreases its position in a given stock more than expected between quarters $t-1$ and t, given its inter-quarter flows between quarters (columns (e)-(f)). *D(Liquidate)* indicates that the fund fully divests from its position in a given stock between quarters $t-1$ and t (columns (g)-(h)).

Similar to the findings of our baseline analyses, columns (c)-(d) of Table 7 more clearly indicate that more concentrated funds (as defined by their number of holdings), are less likely to actively increase their positions in holdings that are exposed to ES incidents in the upcoming four quarters:

[28]Our methodology does not rule out that MSCI ESG Leader funds and MSCI draw in the same information for their ESG investments.

for a concentrated ESG (traditional) fund, an additional ES-related incident between future quarters $t+1$ and $t+4$ is associated with a 0.023 (0.006) percentage point decrease in the probability that the fund increases their position more than expected in these affected stocks. We do not find that diversified or concentrated funds are more likely to actively sell holdings that are more exposed to negative ES incidents in the next four quarters (columns (e)-(f)). Instead, columns (g)-(h) of Table 7 report that especially concentrated ESG funds are more likely to fully liquidate these positions[29].

However, when taking completely new positions (columns (a)-(b)), compared to diversified funds, both concentrated ESG and concentrated traditional funds are somewhat more likely to include incident holdings in their portfolio. This behavior could potentially be driven by the engagement incentives of more concentrated funds to try to reduce downside risk (e.g., Hoepner et al., 2024)[30].

4.2 Determinant of active fund management: fund turnover rate and expense ratio

In our baseline estimation, we find evidence that concentrated funds show stronger stock-picking behavior than diversified funds. However, portfolio concentration may correlate with fees and turnover. Passive index funds tend to be more diversified, have a lower portfolio turnover rate, and charge lower fees. On the other hand, actively managed funds tend to charge higher fees, have a higher portfolio turnover, and see a higher degree of portfolio concentration (actively deviating from their benchmark).

Portfolio turnover may capture a long-term versus short-term investment horizon, which may directly affect funds' incentive to trade on ESG information (Starks et al., 2026). Moreover, the fund's fee structure may drive the incentive to monitor firms rather than portfolio concentration as such. Diversified funds tied to an index cannot sell shares. Unable to pursue an active trading strategy on ES(G) information, these funds could instead be incentivized to monitor and engage with their holdings.

Academic evidence on monitoring by passive investors is mixed: some evidence suggests that passive investors do not monitor (e.g., Heath et al., 2022), others suggest the opposite (e.g., Appel et al., 2016). We hence argue that it is important to distinguish trade effects from these possible

[29] We find ambiguous effects for $\Delta MSCI\ ESG_{j,t+4}$: both concentrated and diversified ESG funds are more likely to actively buy as well as sell holdings whose MSCI ESG score will increase between current quarter t and future quarter $t+4$.

[30] In Appendix B.2.4, we also report estimates using our alternative fund measure for concentration based on the portfolio's Herfindahl index, and by substituting future ES-related incidents for future governance-related incidents. The results remain statistically and quantitatively similar.

incentives from portfolio concentration.

We distinguish our sample of concentrated and diversified funds into those with a below- or above-median turnover rate ($\textit{Low-turnover}_{i,t}$) and those with a below- or above-median fund expense ratio ($\textit{Low-expense}_{i,t}$). We subsequently analyze the roles of funds' turnover rates and expense ratios as moderating factors in the discretionary trading behavior of concentrated and diversified funds with respect to ESG information. We extend Equation (8) with a triple interactions $\Delta \textit{MSCI ESG}_{j,t+4} \times \textit{Concentrate}_{i,t} \times \textit{Low-turnover}_{i,t}$ and $\#\ \textit{Incidents}_{j,t+4} \times \textit{Concentrate}_{i,t} \times \textit{Low turnover}_{i,t}$, to split our sample of diversified and concentrated funds in those with a high and low turnover rate. Additionally, in a separate specification, we differentiate between (diversified and concentrated) funds that charge a low versus a high fee: $\#\ \textit{Incidents}_{j,t+4} \times \textit{Concentrate}_{i,t} \times \textit{Low-expense}_{i,t}$

In Table 8, we report the coefficients and group-specific regression slopes of the triple interaction specification with an indicator for funds with a below-median turnover, $\#\ \textit{Incidents}_{j,t+4} \times \textit{Concentrate}_{i,t} \times \textit{Low-turnover}_{i,t}$. Concentrated (ESG) funds with higher turnover tend to increase positions in stocks with fewer future ES and governance incidents. We find evidence that they do this more so than more diversified funds with high turnover (1.79 times as large for conventional funds to 3.67 times as large for ESG funds with respect to future governance incidents).

Additionally, among funds with lower portfolio turnover, we find that discretionary trades by more concentrated funds are still negatively related to future ES and governance-related incidents. However, the effect size is smaller than for concentrated high-turnover funds. When we alternatively define fund concentration using the portfolio Herfindahl index in Appendix B.2.5, we strongly see that concentrated high-turnover ESG funds are the most aggressive avoiders of incident stocks in our data, while on the other end, we find that (especially conventional) diversified low-turnover funds actually load positively on stocks with upcoming ES and G incidents. By specifically looking at funds' discretionary trades net of flow-induced rebalancing we rule out passive inertia as a possible explanation for (conventional) diversified, low-turnover funds to increase their exposure to stocks with upcoming incidents. The positive discretionary trades toward future-incident stocks are consistent with these funds' beliefs that the market is overreacting to (or correctly anticipating) the incidents and the stock is mispriced, or with deliberately maintaining or increasing their ownership stakes in ES or governance-incident stocks to retain a voice with management (Broccardo et al., 2022). The positive, significant triple interaction of $\#\ \textit{Incidents}_{j,t+4} \times \textit{Concentrate}_{i,t} \times \textit{Low-turnover}_{i,t}$ in column (4) hints the latter explanation for ESG funds, while the negative and significant triple

interaction for our sample of traditional in column (1) suggests the former with respect to ES incidents.

Furthermore, we re-estimate the triple interaction specification using funds' flow-induced expected trades (untabulated). We find that diversified, low-turnover ESG funds' expected trades are positively related to future ES and governance incidents. We do not find significant slopes for diversified, low-turnover funds in our sample of conventional funds. This could indicate that low-turnover diversified ESG funds own stakes in incident firms for engagement reasons.

A low-turnover, diversified fund may still charge a higher fee because it pursues active engagement and stewardship. In Table 9 we therefore report the estimations of the triple interaction of $\#\ Incidents_{j,t+4} \times Concentrate_{i,t} \times Low\text{-}expense_{i,t}$. Both diversified and, to a larger extent, concentrated high-expense ratio funds find that their discretionary trades are negatively related to future ES and governance-associated RepRisk incidents. The triple interaction with $Low\text{-}expense_{i,t}$ for ESG funds is, however, not statistically significant: the ESG mandate amplifies funds' anticipation on top of concentrating their portfolio, but does not substitute for it. When defining fund concentration by the portfolio Herfindahl index in Online Appendix B.2.6, this interaction also becomes insignificant for our sample of conventional funds, indicating that active fund management and corresponding proactive divestment are mainly driven by fund concentration, not fees.

5 Shareholder monitoring and engagement: firm future sustainability performance

The previous section suggested that, on average, concentrated (conventional and ESG-mandated) funds are more likely to reduce their discretionary exposure to firms that experience more negative ES or governance-related incidents four quarters from now. This effect is particularly pronounced among concentrated ESG funds with high portfolio turnover rates and high expense ratios. On the other hand, we find that low-turnover diversified ESG funds own and choose to increase their positions in incident firms for engagement reasons. Nevertheless, our analyses in Section 4 have not yet explicitly examined the role of the extent of shareholder attention within and/ or engagement of individual firms by concentrated and diversified funds.

In addition to divesting, institutional investors can try to influence management to improve the firm's governance and SRI-related performance through private engagement, such as sending letters to the board, negotiating the withdrawal of proposals, or casting votes on shareholder and

management resolutions. Iliev and Lowry (2015) find evidence that concentrated funds benefit more from case-by-case research efforts on firm-specific issues: through larger ownership stakes and larger weights in their portfolios, these funds can better reap the benefits of allocating their resources to more holding-specific monitoring efforts. Regarding engagement efforts, Lowry et al. (2026) find that ESG funds that are more "committed" tend to hold more concentrated portfolios to facilitate engagement.

Hence, in the following sections, we pose the following questions: i) Does the presence of concentrated mutual funds discipline firms, and/ or does the loss of their attention as shareholders leave firms more exposed to ESG incidents? And ii) Do concentrated funds that maintain positions in incident firms use their ownership stake to engage with these firms?

5.1 Monitoring behavior by concentrated funds: ownership and distraction

We first examine whether concentrated funds' avoidance of incident-prone stocks is accompanied by real monitoring effects. Work on corporate governance finds evidence that larger ownership stakes within firms and/ or larger portfolio weights for specific holdings incentivize funds to target these holdings with greater (costly) monitoring efforts (Grossman and Hart, 1980; Maug, 1998; Ekholm and Maury, 2014; Fich et al., 2015). This could impact the aggregate monitoring and ESG governance of the firms they hold in their portfolio. While both ESG and traditional concentrated funds are incentivized to be more contentious and attentive to holdings' governance- and SRI-related value-destroying or value-enhancing activities (Morgan et al., 2011; Appel et al., 2016; Derrien et al., 2022; Edmans et al., 2025), in magnitude, concentrated ESG funds may more strongly target their research and monitoring efforts toward environmental and social issues (Dyck et al., 2019; Chen et al., 2020; Lowry et al., 2026). If firms are held more by ESG fund managers with more concentrated portfolios–who are therefore better monitors on ESG issues–they may be encouraged to improve their ESG performance.

5.1.1 Monitoring proxied by ownership share of concentrated funds

To analyze the extent to which monitoring efforts of concentrated funds at the firm level translate to changes in firm-specific ES(G) performance (we consider governance-related performance separately from ES-related performance), we first regress the changes in firm MSCI ESG scores on the expected

changes in ownership by concentrated and diversified funds, a proxy for the continued presence of concentrated/ diversified ESG and traditional funds as the firm's shareholders. Firm managers care more about their largest shareholders (Appel et al., 2016; Kempf et al., 2017). This change in ownership stake in the firm excludes informative stock-picking, and is driven by inflows and outflows of funds, keeping the portfolio weights in the respective funds constant between quarters $t-1$ and t:

$$\Delta MSCI\ ESG_{j,t+4} = \alpha + \beta \widehat{\textbf{\textit{Expected Ownership}}}_{j,t} + \gamma' \mathbf{X}_{j,t} + \delta_{t,ff} + \varepsilon_{j,t+4} \tag{9}$$

where $\widehat{\textbf{\textit{Expected Ownership}}}_{j,t}$ is defined as the flow-induced expected changes in ownership as defined in Equation (6) for concentrated ESG, concentrated traditional, diversified ESG, and diversified traditional funds. $\Delta MSCI\ ESG_{j,t+4}$ denotes the absolute change in key pillar or industry-adjusted MSCI ESG scores between the end of quarter t and future quarter $t+4$. $\mathbf{X}_{j,t}$ contains quarterly firm controls, ROA, leverage, book-to-market, market cap, sales growth, quarterly stock returns, and return volatility. We include Fama-French 49 industry $\times$ year-quarter fixed effects $\delta_{t,ff}$, and cluster standard errors at the firm level.

The results presented in Table 10 do not show a significant association between future improvements in firm ESG scores and a larger share of ownership by concentrated ESG funds or concentrated traditional funds. This first set of results aligns with the work by Heath et al. (2023), who show that increased ownership by SRI funds does not lead to improvements in their holdings' sustainability performance. In fact, increased ownership by diversified traditional funds is negatively related to future increases in firms' ESG scores[31].

In Table 11, we replace $\Delta MSCI\ ESG_{j,t+4}$ for future ES, severe ES, and G RepRisk incidents and estimate a Poisson estimation of future firm incidents on changes in expected ownership by concentrated and diversified funds:

$$\#\ incidents_{j,t+4} = \exp(\alpha + \beta \widehat{\textbf{\textit{Expected Ownership}}}_{j,t} + \gamma' \mathbf{X}_{j,t} + \delta_{t,ff} + \varepsilon_{j,t+4}) \tag{10}$$

where $\#\ incidents_{j,t+4}$ refers to the cumulative number of ES incidents, governance incidents, or severe ES incidents between the beginning of future quarter $t+1$ and the end of future quarter

[31] We additionally estimate untabulated estimations of Equation (8) where our dependent variable is the relative change in future disclosed firm scope 1 and scope 2 carbon intensity, $\Delta Carbon\ Intensity^{disclosed}_{j,t+4}$, and the relative change in disclosed scope 1 and scope 2 carbon emissions $\Delta Carbon^{disclosed}_{j,t+4}$. We find that both the flow-induced changes in concentrated ESG and concentrated traditional ownership, as well as in diversified traditional ownership, are significantly positively correlated with future increases in firm-level carbon intensity and carbon emissions. The coefficients for expected ownership by diversified ESG funds are positive, but not significant.

$t+4$. We find that both flow-induced changes in ownership by concentrated ESG and concentrated traditional funds have a negative association with firm incidents over the next four quarters. As the table reports standardized Poisson regression coefficients, we interpret the results as a one standard deviation increase in concentrated ESG ownership is correlated with a reduction in future ES incidents of 2.66 percent (or $100 \times (\exp(-0.005) - 1) = 0.498$ percent of a standard deviation of 5.341 ES incidents). For severe ES incidents, this effect is slightly larger, a reduction in severe future ES incidents of 3.11 percent. On the other hand, expected changes in the ownership stake (i.e., the sum of flow-induced changes in ownership in firm j, keeping the funds' portfolio weights in j constant) by concentrated traditional funds are also significantly associated with fewer realized governance incidents; a one standard deviation increase in concentrated traditional ownership is correlated with a reduction in future governance incidents of 2.98 percent.

Interestingly, we do not note any significant effects for diversified ESG funds, and the coefficients for diversified traditional funds are positive, but change significance depending on the measure of fund concentration that we use. Hence, most of the incident-reducing monitoring effects seem to be driven by an increase in the firm's ownership stake held by concentrated funds, both ESG and conventional.

5.1.2 Inverse of shareholder attention: degree of distraction of concentrated funds

The previous section aimed to shed light on the effects of increased firm-level monitoring, proxied by a mechanical increase in the firm's ownership stake held by concentrated funds. However, this measure depends on the fund's last quarter's portfolio weights, which reflect past active decisions that may be correlated with firm characteristics that predict future incidents. A fund that, due to its historic portfolio choices, was already underweighting higher-incident firms will mechanically see most of its flow-induced ownership go toward fewer-incident firms. Any monitoring effects could have been obscured with a mechanical allocation of flows toward fewer-incident firms.

To address this concern in our setting, we examine the consequences of institutional shareholders' *inattention* using the distraction measure of Kempf et al. (2017). That is, when a limited monitoring capacity constrains how institutional shareholders allocate attention across their portfolio, a shock to an unrelated industry held by a given shareholder will likely distract that shareholder from the focal firm. If the monitoring attention by concentrated funds disciplines firms' ES and governance behavior, then firms should experience worse ES and governance performance following periods when their concentrated ESG or conventional shareholders are distracted by unexpected shocks

concerning other holdings in their portfolios.

We follow Kempf et al. (2017) and Chen et al. (2020) and define an industry shock if the industry has the highest or lowest return across all Fama-French 12 industries[32] in a given quarter. Given a portfolio of a mutual fund i containing firm j, when i's portfolio is affected by an industry-specific shock that is unrelated to the industry of firm j, fund i is more likely to be distracted in terms of attention, subsequently lowering its monitoring efforts directed at firm j. This effect for firm j is stronger when the unrelated industry takes up a higher portfolio weight in fund i. We construct a quarterly, firm-level distraction measure as follows:

$$Distraction_{j,t} = \sum_{i \in J_{t-1}} \sum_{Ind \neq Ind_j} w_{j,i,t-1} \times w_{i,t-1}^{Ind} \times IndShock_t^{Ind} \tag{11}$$

where J_{t-1} refers to the set of firm j's investors at the end of the previous quarter $t-1$, Ind_j is the Fama-French 12 industry of firm j. $IndShock_t^{Ind}$ is an indicator that equals one if the industry-shock occurs in industry Ind but not in Ind_j, and zero otherwise. For each quarter, we rank the Fama-French 12-industry returns from highest to lowest and define a shock to occur in the industry with either the highest or the lowest return[33]. While some return shocks stretch over multiple quarters, even short-term shocks may have fund managers significantly re-optimize the allocation of attention across their portfolio holdings. To capture the importance of the industry that is affected by a 'distraction-event' in fund i's portfolio, we use the weight of industry Ind in portfolio i at the end of $t-1$, $w_{i,t-1}^{Ind}$.

In aggregating the distracting measure to a firm-level, we again follow Kempf et al. (2017) and Chen et al. (2020) and use the weight $w_{j,i,t-1}$ to account for how important fund i is to firm j. This weight is dependent on the portfolio weight that firm j takes up in the fund i's portfolio ($\%Portfolio_{i,j,t-1}$), and if fund i has a larger ownership stake in firm j ($\%Own_{i,j,t-1}$):

$$w_{j,i,t-1} = \frac{Q\%Own_{i,j,t-1} + Q\%Portfolio_{i,j,t-1}}{\sum_{i \in J_{t-1}} (Q\%Own_{i,j,t-1} + Q\%Portfolio_{i,j,t-1})}, \tag{12}$$

where we sort all stocks held by fund i by $\%Own_{i,j,t-1}$ into quintiles, $Q\%Own_{i,j,t-1}$, and similarly sort firm j's mutual fund shareholders by $\%Portfolio_{i,j,t-1}$ into quintiles, $Q\%Portfolio_{i,j,t-1}$. $w_{j,i,t-1}$ is normalized and adds up to one using our full sample of funds.

[32] As we initially match from Jensen et al. (2022) the Fama-French 49-industries to our fund holdings, using Kenneth French's website, we first map holdings to the Fama-French 12-industries.

[33] The reasoning of why extreme industry returns can be distracting is twofold: Rationally, periods with extreme returns may set off benefits for learning about uncertainty (Barber and Odean, 2008; Kacperczyk et al., 2014, 2016), and psychologically, investors and media might extensively focus on out- and underperformers, incentivizing fund managers to shift their attention to holdings that are most salient to their investor base (Fang et al., 2014; Kempf et al., 2017; Gantchev et al., 2023).

We calculate the components of Equations (10) and (11) for our full sample of funds. The distraction measure depends on i) whether a shock happens to an unrelated industry, ii) the shocked industry is important in the fund's portfolio, and iii) the distracted mutual funds are potentially important monitors of the focal firm j. For 502,729 firm-quarter observations, we find that the mean of the distraction measure is 0.106, which is slightly lower, but similar to that estimated by Chen et al. (2020) (0.163)[34].

For our subsequent analyses, we choose to split the measure to the firm-level for four groups of mutual funds in our sample: concentrated ESG (mean of 0.009), concentrated traditional (mean of 0.015), diversified ESG (mean of 0.019), and diversified traditional (mean of 0.823)[35].

To analyze the effect of monitoring by concentrated and diversified shareholders, we estimate the following Poisson regression on future ES, governance, and severe ES incidents:

$$\begin{aligned} \#\ incidents_{j,t+4} = \exp(\alpha + \beta_1 \widehat{\boldsymbol{Distraction}}_{j,t} + \beta_2 \boldsymbol{Total\ \widehat{Ownership}}_{j,t} \\ + \gamma' \mathbf{X}_{j,t} + \delta_{t,ff} + \varepsilon_{j,t+4}) \end{aligned} \tag{13}$$

where $\widehat{\boldsymbol{Distraction}}_{j,t}$ contains the distraction measures split for concentrated and diversified funds. It is an inverse measure of shareholder attention and monitoring intensity per individual firm. We additionally control for the changes in total ownership by our sample of funds, $\boldsymbol{Total\ \widehat{Ownership}}_{j,t}$ as defined in Equation (5). $\#\ incidents_{j,t+4}$ refers to the cumulative number of ES incidents, governance incidents, or severe ES incidents between the beginning of future quarter $t+1$ and the end of future quarter $t+4$. $\mathbf{X}_{j,t}$ contains quarterly firm controls, ROA, leverage, book-to-market, market cap, sales growth, quarterly stock returns, and return volatility. We include Fama-French 12 industry $\times$ year-quarter fixed effects $\delta_{t,ff}$, and cluster standard errors at the firm level.

In uneven columns (1), (3), and (5) of Table 12, we regress the firm-level distraction measures of their concentrated and diversified ESG shareholders, where we define fund concentration by the number of holdings of the funds. We find that for governance-associated incidents, an increase of one standard deviation in $Distraction\ Concentrated^{ESG}$ results in an increase in future

[34] We aggregate the distraction measure to a firm-level measure using our full sample of funds to replicate the findings of Chen et al. (2020), substituting their CSR measure for RepRisk incidents. While untabulated, in aggregate, firm distraction is positively related to more negative ES and governance incidents.

[35] More concentrated funds may mechanically allocate higher portfolio weights to individual holdings, as measured through $\%Portfolio_{i,j,t-1}$. However, this does not mean they hold a large ownership stake in this firm. Instead, that depends on the dollar stake invested in that firm. Moreover, we note that for our sample of concentrated ESG funds, we can calculate the distraction measure for fewer firm-quarter observations than for our sample of concentrated traditional funds: 142,647 firm-quarter observations versus 216,375. This can be the result of these funds holding fewer holdings as well as being less likely to hold all Fama-French 12-industries.

governance incidents by 16.61 percent (or $100 \times (\exp(0.014) - 1) = 1.41$ percent of a standard deviation of 11.86 future cumulative G incidents). In the even columns (2), (4), and (6), we consider the distraction measures of firms' concentrated and diversified traditional shareholders. Here, we find for *Distraction Concentrated*^{Traditional} a positive relationship with future ES, severe ES, and governance incidents: an increase of one standard deviation in *Distraction Concentrated*^{Traditional} is related to in an increase in the number of future governance incidents by 19.72 percent (or $100 \times (\exp(0.022) - 1) = 2.224$ percent of a standard deviation of 8.80 future cumulative G incidents). For severe ES incidents, additional distraction by traditional concentrated funds leads to a 13.88 percent increase in the number of future incidents. These results are similar in Table IA.22, for which we define fund concentration using the fund portfolio Herfindahl index.

In Tables 13 (and in Appendix B.3.2 for fund concentration by the Herfindahl index IA.23) we alternatively run a linear probability model in which we substitute the number of cumulative incidents between quarters $t + 1$ and the end of $t + 4$, for a dummy variable > 1 $Incidents_{t+4}$ which is given the value 1 if the number of environmental and social (columns (1)-(2)), governance (columns (3)-(4)), or severe ES (columns (5)-(6)) RepRisk incidents of firm j in quarter $t + 4$ is higher than 1. This helps us see whether the results of our Poisson specification are driven by firms that have extreme outliers. While the distraction results for concentrated traditional funds show statistically similar results in our Poisson specification, the distraction results for concentrated ESG funds become significant for both the indicator for future ES and severe ES incidents. In column (1) of Table 13, a one standard deviation increase in *Distraction Concentrated*^{ESG} results in an increase in the probability of the firm being involved in more than one negative ES incident of 2.3 percentage points ($= 1.222 \times 0.019$). Regarding firm performance related to governance, firms whose concentrated ESG owners are more distracted see an increase of 3 percentage points in the probability of being involved in more than one future governance incident.

Interestingly, the distraction results in both the Poisson and the linear probability models reverse sign for diversified funds: holdings at which diversified ESG funds are more distracted do not experience more incidents, and if anything, experience fewer. While seeming odd at first glance, this result could imply that diversified ESG funds' influence on their holdings operates through institutional ownership stakes and additional voting power, rather than through active monitoring of individual holdings. Work on mutual fund voting behavior finds that more diversified funds rely to a larger degree on proxy advisory firms (such as ISS and Glass Lewis) that counsel investors on how to vote their shares on corporate decisions (Malenko and Shen, 2016), or vote in a more

one-fits-all manner, also when voting on SRI-related proposals (Lowry et al., 2026). Hence, when distracted, diversified ESG may be more likely to default to forms of centralized stewardship in terms of standardized engagement protocols. This rigidity could have a disciplining effect on funds' portfolio holdings' ES(G) performance.

Our findings for increased distraction of concentrated owners, in contrast, relate to recent work on decentralized stewardship, (e.g., Herrmann et al., 2025; Malenko et al., 2026) argues that decentralized stewardship delegated to fund managers of concentrated portfolios can improve governance of holdings when the decentralized stewardship is demanded through strong investor preferences.

If active ownership disciplines firm behavior, then periods in which concentrated funds are distracted from their portfolio companies should be followed by worse firm-level ESG outcomes, which, in our setting, is visible through more negative ES and/ or governance-related incidents. We additionally estimate untabulated OLS estimations of Equation (13) where our dependent variable is the relative change in future disclosed firm scope 1 and scope 2 carbon intensity, $\Delta Carbon\ Intensity_{j,t+4}^{disclosed}$. We, however, find that none of our four distraction measures is significant. Hence, firms with increased levels of distraction by concentrated and diversified funds do not worsen or improve their carbon intensity between the current quarter and the future quarter $t + 4$.

5.2 Engagement behavior by concentrated funds: shareholder proposal withdrawal

We note from Section 4 that compared to diversified funds, both traditional and ESG-mandated concentrated funds make significant discretionary changes to their positions away from holdings that are exposed to negative incidents in the future. However, the literature on mutual fund voting behavior by U.S. mutual funds describes that funds with stronger incentives to engage, hold investments longer, and vote more actively (He et al., 2023; Lowry et al., 2026). Low-turnover funds may actively gather information on ES(G) topics, enabling them to effectively engage with their holdings.

In Section 4.2, we find initial evidence that a sub-sample of our funds is more likely to influence management decisions on governance and/ or ES performance through 'voice': Concentrated, low-turnover funds' discretionary trades are negatively related to future incidents, but to a significantly lesser degree, meaning these funds tend to somewhat hold on to ownership stakes in incident-prone

stocks.

In the following analyses, we examine the extent to which concentrated funds that maintain or increase their positions in incident firms use their ownership stakes to engage with these firms. Moreover, we also consider diversified funds, a group that has seen conflicting evidence on the extent and effectiveness of their monitoring efforts (Appel et al., 2016; Heath et al., 2022). We proxy for active engagement at the firm level by measuring the probability that submitted shareholder proposals are withdrawn before going up for a vote.

Different from shareholder proposals that go up for a vote[36], filed proposals that get withdrawn by the proposal's sponsor (i.e., the submitting shareholder) are often the result of successful private negotiations between firm management and said sponsors. Management initiates private negotiations after which sponsors withdraw their filed proposals if a satisfying compromise is reached. Work on the withdrawal of shareholder proposals by Bauer et al. (2015) finds that firms are more likely to have their shareholder proposals withdrawn when they have higher levels of long-term, more passive, institutional ownership, and the proposal's sponsor is also an institutional investor.

For our sample of portfolio holdings, we collect all shareholder proposals from Institutional Shareholder Services (ISS). For each shareholder meeting, ISS records for Russell 3000 companies whether the proposal was omitted, withdrawn, or put to a final vote. In a firm-proposal panel, we examine the relationship between the likelihood of a shareholder proposal getting withdrawn (versus being put up for a vote) and changes in ownership of concentrated and diversified mutual funds:

$$D(Withdrawn_{j,p,t}) = \beta_0 + \beta_1 \Delta\widehat{\mathbf{W}}_{j,t} + \gamma_1' \mathbf{Z}_{p,t} + \gamma_2' \mathbf{X}_{j,t-1} + \delta_t + \delta_{ff} + \delta_s + \varepsilon_{j,p,t} \tag{14}$$

where $D(Withdrawn_{j,p,t})$ is an indicator that takes the value 1 when proposal p of firm j is withdrawn, 0 when voted on during the shareholder meeting in meeting-year t. $\Delta\widehat{W}_{j,t}$ is either defined as the flow-induced expected changes in ownership, $\widehat{W}_{j,t} = \sum_{k=1}^{3} \Delta^F w_{j,Q(M_{i,t-1})-k}$ such that $\Delta^F w_{j,q}$ for firm j in quarter q is defined as in Equation (6), or as the discretionary changes in ownership, $\widehat{W}_{j,t} = \sum_{k=1}^{3} \Delta^D w_{j,Q(M_{i,t-1})-k}$ such that $\Delta^D w_{j,q}$ is defined as in Equation (7). As the withdrawal of shareholder proposal p can happen sometime between the firm j's previous year's annual meeting and the current year's t meeting, $M_{i,t-1}$ is the exact date of firm j's prior annual

[36]Shareholder proposals that end up going up for a vote are researched extensively in corporate governance literature as well as work on ES(G) engagements (see e.g., Dimson et al., 2015; Iliev and Lowry, 2015; Flammer et al., 2021; Chen et al., 2020; Dikolli et al., 2022; He et al., 2023; Michaely et al., 2021; Lowry et al., 2026).

meeting[37]. $Q(M_{i,t-1})-k$ is the k-th quarter-end before the prior meeting. In case the firm does not have a prior meeting in the data, we consider the changes in ownership up to an artificial meeting date estimated by subtracting exactly 1 year from the meeting date.

$\mathbf{Z}_{p,t}$ is a vector including proposal-level controls. We include an indicator *Proposal type* denoting whether the proposal is deemed an SRI proposal or a governance proposal. While ISS provides this indicator, we follow Dikolli et al. (2022) and manually go over the individual proposal resolution text to see whether the proposal should be classified as "SRI" or "GOV". Of a total of 20,912 records[38], ISS categorizes 8,952 as "SRI". We manually map an additional 886 proposals as a SRI-themed proposal[39]. Moreover, we map 138 proposals without a given resolution type as a "GOV"-themed proposal[40]. *Proposal type = "SRI"* has gov-themed proposals as the reference group. Next to this, we identify for every proposal the main sponsor. ISS defines the following types: "fund", "public pension", "SRI fund", "union", "company", "Individual", "religious", "Special Interest", or "other". We set the first listed sponsor-type as the primary sponsor of the proposal. Proposals whose primary sponsor is a "fund", "public pension", or "SRI fund", we define as being sponsored by an institutional investor. Additionally, for every firm i, we count the number of proposals that were either withdrawn or went up for a vote in the previous meeting year, *# Proposals Previous Meeting*.

$\mathbf{X}_{j,t-1}$ are firm controls (ROA, leverage, B/M, market cap, sales growth, and capex over assets) measured at the quarter-end preceding the current meeting quarter; accounting variables are pre-lagged 4 months following Jensen et al. (2022). In our baseline model, we additionally control for firm industry fixed effects (Fama-French 12-industries), δ_{ff}; proposal-year fixed effects δ_t; and sponsor-type fixed effects, δ_s. We cluster the standard errors on the firm and proposal levels.

We estimate Equation (8) in a linear probability model and present the results for $\widehat{W}_{j,t} = \sum_{k=1}^{3} \Delta^D w_{j,Q(M_{i,t-1})-k}$ in Table 14 to see whether concentrated funds *actively increase* their ownership in firms with whom they want to engage. We find a consistent positive correlation between additional discretionary ownership coming from concentrated ESG funds and the probability that firm j's proposal p gets withdrawn by its issuer. Specially, in column (1) of Table 14, a one standard-deviation in the increase of discretionary ownership (with a mean of 0.0003 and standard deviation

[37]Using the exact annual meeting date of the proposal panel, we count the number of quarters before this date in case the firm's last annual meeting does not take place in the same calendar quarter as the current meeting (i.e., $t-4$ is not last year's meeting quarter). Hence, with $M_{i,t-1}$ we allow for date drift across years.

[38]We gathered the full sample of ISS proposals from 2006 to 2024.

[39]Similar to Dikolli et al. (2022), we, for example, categorize proposals on pay disparities or diversity as a 'social issue'. Proposals on, for example, "climate lobbying" are not given a resolution type by ISS; we categorize these proposals also as SRI-themed.

[40]Many of these proposals are directly related to the consequences of the economic crisis between 2008 and 2011, and refer to issues as "Disclose mortgage business risk" or "Report on mortgage servicing and modifications".

of 0.013) for a consecutive three quarters before the firm's previous year's shareholder meeting by concentrated ESG funds, is associated with an increase in the probability of the submitted proposal to be withdrawn instead of voted on of 0.9 percentage points. The effect stays economically similar when we limit the sample to GOV-themed proposals (column (2)) or SRI-themed proposals (column (3)). This relationship is statistically insignificant for increases in discretionary ownership by concentrated traditional funds, diversified ESG funds, and diversified traditional funds. When we define fund concentration based on the fund i's cross-sectional Herfindahl Index, we find similar results (see Appendix B.4.1).

In columns (4)-(6), we limit our sample to shareholder proposals sponsored by an institutional shareholder (i.e., whose sponsor is a (SRI) fund or a public pension). Column (4) of Table 14 finds that a one standard deviation increase in the increase of discretionary ownership by concentrated ESG funds is associated with an increase in the probability of the institutional investor-sponsored governance proposal being withdrawn of 2.65 percentage points[41].

Our results seem to be consistent with the interpretation of concentrated ESG funds choosing to accumulate positions in certain holdings in order to strengthen their engagement leverage, both on governance and issues associated with SRI. In combination with trading-level evidence in Section 4.2 in which we find that concentrated ESG funds are the most active discretionary traders away from future incident stocks, but when they *choose* to keep (or increase) their position in a selection of incident holdings, it is because they are pursuing engagement rather than exit.

Changes in the discretionary ownership by diversified ESG funds do not predict the probability of a proposal being withdrawn. Lowry et al. (2026) indeed finds that "committed" ESG funds concentrate their portfolios to target their holdings for engagement purposes. However, in Table 15, flow-induced increases in ownership by diversified ESG funds–which are driven by past portfolio weights and flows–are positively associated with the probability that SRI-related shareholder proposals are withdrawn[42]. Diversified ESG funds can, and through their ESG mandate are incentivized to, exert structural influence on firms' ESG performance through their overall ownership stake, exerting pressure on their holdings by voting power or through alternative private engagements. This finding is also consistent with work on passive investors who are not able to actively trade toward or away from their holdings (Appel et al., 2016).

[41] In Appendix B.4.1 we define concentrated funds as those with a cross-sectionally above-median Herfindahl Index. Column (4) finds instead that a one standard deviation increase in the discretionary ownership by concentrated ESG funds is associated with an increase in the probability of the institutional investor-sponsored governance proposal being withdrawn of 1.28 percentage points.

[42] This also holds when we limit the proposal sample to those sponsored by institutional investors in Appendix B.4.2.

6 Concluding remarks

In this paper, we examine the extent to which portfolio concentration matters for successful ESG integration in portfolio decisions. We address this question by studying mutual fund trades, firm-level monitoring and engagement efforts, and firms' ESG profiles. Fund managers with greater (perceived) investment skill would hold more concentrated portfolios and deviate from a passive diversified benchmark portfolio, picking stocks that offer them a competitive advantage. We find that concentrated funds actively direct their discretionary trades away from firms that will be involved in negative ES or governance-related incidents over the following four quarters. This effect is strongest for concentrated funds with a high turnover. Although to a lesser extent, concentrated funds with a low turnover rate anticipate negative incidents through their discretionary trades.

Additionally, if portfolio concentration can lower information processing costs, this should improve funds' attention allocation to their individual portfolio holdings. Consequently, these funds should be better able to successfully identify and target firms on their value-destroying performance. Hence, we pose the following questions: i) Does the presence of concentrated mutual funds discipline firms, and/ or does the loss of their attention as shareholders leave firms more exposed to ESG incidents? And ii) Do concentrated funds that maintain positions in incident firms use their ownership stake to engage with these firms?

We find significant evidence that additional monitoring by concentrated funds disciplines firms' ESG behavior: decreased flow-induced ownership and increased shareholder distraction (an inverse measure of shareholder monitoring) of concentrated ESG and concentrated traditional funds are positively related to additional negative future (severe) ES and governance incidents. We do not find that additional monitoring efforts are associated with firm improvements in ESG scores or carbon intensity.

Additionally, as part of their monitoring efforts, concentrated funds may choose to actively engage with their portfolio holdings. We find that when concentrated ESG funds actively increase their ownership (through discretionary trades), shareholder proposals submitted to these firms are more likely to be withdrawn, suggesting that these owners exert their influence through private engagements. On the other hand, in line with the argument that large funds exert influence on firms through centralized stewardship, diversified ESG funds' flow-induced changes in firm ownership are positively related to the probability of withdrawal of SRI-themed shareholder proposals, which is in line with their ESG mandate.

Together, portfolio concentration consolidates our findings on how institutional investors integrate ESG information in their portfolio strategies.

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Appendices

A Main tables

A.1 Descriptives

A.1.1 Stock ESG performance changes and controls

Table 1: Summary statistics of stock characteristics

Panel A: Firm-Level ESG Characteristics

	N	Mean	Std. Dev.	p1	Median	p99
# ES incidents$_{t+4}$	427,744	1.03	5.51	0.00	0.00	18.00
# G incidents$_{t+4}$	423,008	0.18	1.00	0.00	0.00	4.00
# severe ES incidents$_{t+4}$	427,744	0.33	1.86	0.00	0.00	7.00
> 1 ES incident$_{t+4}$	427,744	0.04	0.20	0.00	0.00	1.00
> 1 G incident$_{t+4}$	423,008	0.03	0.17	0.00	0.00	1.00
> 1 severe ES incident$_{t+4}$	427,744	0.01	0.12	0.00	0.00	1.00
MSCI ESG (industry-adjusted)	205,450	4.70	2.22	0.00	4.60	10.00
Δ MSCI raw ESG$_{t+4}$	191,090	0.09	0.47	-1.10	0.10	1.30
Δ MSCI ESG$_{t+4}$	190,791	0.18	0.93	-2.20	0.00	2.60
Δ Carbon Intensity$^{disclosed}_{t+4}$ (%)	77,320	0.00	0.46	-0.74	-0.06	2.98

Panel B: Firm-Level Controls

	N	Mean	Std. Dev.	p1	Median	p99
Leverage	728,459	0.23	0.20	0.00	0.19	0.88
Book/Market	719,799	0.96	1.10	0.03	0.64	7.08
ln Market Capitalization	762,738	5.99	1.94	1.63	5.89	10.76
Quarterly stock returns ($\times 100\%$)	745,029	2.21	24.59	-54.62	0.05	102.77
Sales Growth	526,010	0.17	0.70	-0.87	0.05	4.95
ROA	621,221	-0.00	0.05	-0.31	0.01	0.10
Return volatility	705,042	0.03	0.01	0.01	0.03	0.09
CAPEX/Assets	631,698	0.04	0.05	0.00	0.03	0.26
ACWI member	983,872	0.08	0.27	0.00	0.00	1.00

Notes: This table reports summary statistics for firm-level ESG characteristics (Panel A) and firm-level controls (Panel B). The sample consists of 31,824 primary stocks matched with quarterly Compustat and CRSP data following Jensen et al. (2022). **Panel A:** ES incidents$_{t+4}$ is the cumulative number of environmental and social RepRisk incidents from quarters $t+1$ through $t+4$. # G incidents$_{t+4}$ is defined analogously for governance-classified incidents. # severe ES incidents$_{t+4}$ counts only incidents with a RepRisk severity rank of two or three. > 1 ES incident$_{t+4}$, > 1 G incident$_{t+4}$, and > 1 severe ES incident$_{t+4}$ are dummy variables equal to one if the firm experiences more than one incident of the respective type between quarters $t+1$ and $t+4$, following Derrien et al. (2022). MSCI ESG (industry-adjusted) is MSCI's Industry-Adjusted Company Score, ranging from 0 to 10. Δ MSCI raw ESG$_{t+4}$ and Δ MSCI ESG$_{t+4}$ are the absolute changes in, respectively, the Weighted Average Key Issue Score and the Industry-Adjusted Score between quarters t and $t+4$. Δ Carbon Intensity$^{disclosed}_{t+4}$ (%) is the percentage change in Refinitiv's revenue-weighted firm-disclosed Scope 1 and 2 CO2 emissions (tonnes per million USD revenue) between quarters t and $t+4$, winsorized at the 1st and 99th percentiles. **Panel B:** ln Market Capitalization is the natural logarithm of the firm's market capitalization. Leverage is gross debt over the book value of assets. Book/Market is the firm's book value over the most recent market capitalization. Quarterly stock returns is the quarterly stock return ($\times 100\%$). Sales Growth is the firm's 1-year sales growth. ROA is quarterly net income scaled by the book value of total assets. CAPEX/Assets is capital expenditure over the book value of assets. Return volatility is the annualized standard deviation of daily returns over the previous 12 months. ACWI member is a dummy equal to one if the firm is included in MSCI's All Country World Index. Accounting data are assumed to have a four-month reporting lag. All continuous control variables are winsorized at the 1st and 99th percentiles. Non-USD values are converted using the most recent Compustat exchange rate.

A.1.2 Balance of concentrated vs. diversified fund characteristics

Table 2: Balance table of concentrated and diversified funds

Panel A: Concentration by above/ below median number of holdings			
	(1) Diversified funds	(2) Concentrated funds	(3) Difference (1)-(2)
Fund characteristics			
ln TNA	19.64	18.56	1.08***
	(1.90)	(1.74)	(0.01)
Expense Ratio	0.97	1.34	-0.37***
	(0.62)	(0.71)	(0.00)
Turnover rate	0.16	0.14	0.02***
	(0.34)	(0.32)	(0.00)
Flow	0.01	0.00	0.00*
	(0.14)	(0.15)	(0.00)
Quarterly return	1.84	1.59	0.25***
	(9.94)	(10.31)	(0.04)
Age	15.39	14.49	0.90***
	(11.53)	(11.29)	(0.05)
Percentage cash	2.14	3.55	-1.41***
	(3.46)	(4.95)	(0.02)
ESG score	6.56	6.91	-0.35***
	(1.48)	(1.42)	(0.01)
ESG Fund	0.27	0.29	-0.02***
	(0.44)	(0.45)	(0.00)
N	125,904	120,845	246,749
Panel B: Concentration by above/ below median fund portfolio Herfindahl Index			
	(1) Diversified funds	(2) Concentrated funds	(3) Difference (1)-(2)
Fund characteristics			
ln TNA	19.59	18.81	0.78***
	(1.89)	(1.82)	(0.01)
Expense Ratio	0.97	1.24	-0.27***
	(0.61)	(0.66)	(0.00)
Turnover rate	0.16	0.14	0.02***
	(0.34)	(0.32)	(0.00)
Flow	0.01	0.00	0.00***
	(0.14)	(0.14)	(0.00)
Quarterly return	1.86	1.65	0.20***
	(9.89)	(10.47)	(0.04)
Age	15.10	15.17	-0.07
	(11.44)	(11.78)	(0.05)
Percentage cash	2.13	3.29	-1.16***
	(3.37)	(4.50)	(0.02)
ESG score	6.62	6.85	-0.24***
	(1.46)	(1.45)	(0.01)
ESG Fund	0.28	0.30	-0.02***
	(0.45)	(0.46)	(0.00)
N	112,788	112,774	225,562

Notes: Panels A and B present balance tests of mutual fund characteristics of diversified and concentrated funds. *ln TNA* denotes the natural logarithms of total assets under management at the quarter-end in USD. *Expense ratio* is the fund's net expense ratio, back-filled over the year's quarters. The values are trimmed at the 0.5th and 99.5h percentiles. *Turnover rate* is the fund's quarterly portfolio turnover calculated following Morningstar's definition of taking the lesser of purchases or sales and dividing by the fund's quarterly net assets at the end of the previous quarter. The values are trimmed at the 0.5th and 99.5h percentiles. *Flow* is defined as the dollar flows normalized by the fund's previous quarter's TNA. *Quarterly returns* are the quarterly net returns of a fund. *ln Age* is the natural logarithm of the number of years between the inception date of the oldest share class of the fund and the date of observation. *Percentage cash* is the percentage of the fund's assets under management that consists of cash or other short-term positions. *ESG score* is the fund's ESG Score as defined by MSCI. *ESG Fund* takes on the value 1 if the fund is denoted by Morningstar to be a "General ESG Investment", 0 otherwise. In Panel A, we denote concentrated funds as those that in quarter t have a below-median number of holdings; else, funds are deemed diversified. In Panel B, we denote concentrated funds as those that in quarter t have an above-median portfolio Herfindahl Index; else, funds are deemed diversified. Columns (1) and (2) show means, with standard deviations in parentheses. Column (3) shows the difference in means, with the standard error of the difference in parentheses and with stars specifying significance as follows: * for p¡.10, ** for p¡.05, *** for p¡.01.

A.1.3 Trades and ownership measures

Table 3: Summary statistics of fund position changes and changes in firm ownership stakes

Panel A: fund-holding

	N	Mean	0.5th pct	Median	99.5th pct	Std Dev
Quarterly Trades						
Position changes	29,871,114	0.0000	-0.0426	0.0000	0.0439	0.0043
Expected position changes	29,871,114	-0.0000	-0.0089	0.0000	0.0122	0.0010
Discretionary position changes	29,871,114	0.0000	-0.0547	0.0000	0.0524	0.0043

Panel B: Firm Ownership

	N	Mean	Min	Median	Max	Std Dev
Concentration based on number of holdings						
Total ownership changes						
ESG concentrated	597,808	0.0000	-0.0486	0.0000	0.0501	0.0011
Conventional concentrated	597,808	-0.0000	-0.0509	0.0000	0.0523	0.0014
ESG diversified	597,808	0.0001	-0.1149	0.0000	0.1165	0.0016
Conventional diversified	597,808	0.0006	-0.2969	0.0000	0.2923	0.0044
Expected ownership changes						
ESG concentrated	597,808	-0.0000	-0.0063	0.0000	0.0083	0.0002
Conventional concentrated	597,808	-0.0001	-0.0105	0.0000	0.0063	0.0004
ESG diversified	597,808	-0.0000	-0.0078	0.0000	0.0108	0.0003
Conventional diversified	597,808	-0.0002	-0.0289	0.0000	0.0069	0.0010
Discretionary ownership changes						
ESG concentrated	597,808	0.0000	-0.0460	0.0000	0.0505	0.0011
Conventional concentrated	597,808	0.0001	-0.0470	0.0000	0.0526	0.0014
ESG diversified	597,808	0.0001	-0.1157	0.0000	0.1155	0.0016
Conventional diversified	597,808	0.0008	-0.2884	0.0000	0.2917	0.0044
Concentration based on Herfindahl index						
Total ownership changes						
ESG concentrated	596,739	0.0000	-0.0422	0.0000	0.0444	0.0012
Conventional concentrated	596,739	-0.0000	-0.1093	0.0000	0.1093	0.0017
ESG diversified	596,739	0.0001	-0.1093	0.0000	0.1145	0.0015
Conventional diversified	596,739	0.0006	-0.2383	0.0000	0.2351	0.0042
Expected ownership changes						
ESG concentrated	596,739	-0.0000	-0.0072	0.0000	0.0065	0.0003
Conventional concentrated	596,739	-0.0001	-0.0203	0.0000	0.0066	0.0004
ESG diversified	596,739	0.0000	-0.0080	0.0000	0.0125	0.0003
Conventional diversified	596,739	-0.0002	-0.0225	0.0000	0.0072	0.0010
Discretionary ownership changes						
ESG concentrated	596,739	0.0000	-0.0413	0.0000	0.0446	0.0012
Conventional concentrated	596,739	0.0001	-0.1023	0.0000	0.1098	0.0017
ESG diversified	596,739	0.0001	-0.1105	0.0000	0.1139	0.0015
Conventional diversified	596,739	0.0007	-0.2328	0.0000	0.2343	0.0042

Notes: The sample includes all firms for which the primary share was held by our sample of European and US-domiciled open-end equity funds from December 2014 to December 2022. The mean, median, 0.5th percentile, 99.5th percentile, and standard deviation of various quarterly fund-holding level trades are reported. In Panel A we calculate the changes in stock j's allocation in the portfolio of fund i defined as $\frac{Price_{j,t-1} \times (Holding_{i,j,t} - Holding_{i,j,t-1})}{AUM_{i,t-1}}$. We disentangle from these two measures of fund position changes: flow-driven 'expected' trades of fund i of stock j as well as the 'discretionary' position changes–i.e., trades by fund i of stock j that deviate from its expected position changes. To account for measurement error, we trim our two measures of fund trades on the 0.5th and 99.5th percentiles. Discretionary position changes are the difference between all position changes and the expected position changes. In Panel B, we calculate the expected and discretionary changes in ownership of stock j defined as $\frac{(Holding_{i,j,t} - Holding_{i,j,t-1})}{Shares\ outstanding_{j,t-1}}$. Discretionary ownership changes are the difference between the total change in ownership and the flow-included expected changes in ownership.

A.2 Trading behavior of concentrated vs. diversified portfolios

A.2.1 Future ES incidents and ESG scores

Table 4: Position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00052**	0.00039***	0.00052**	0.00029***	0.00000	0.00010***
	(2.5317)	(4.2951)	(2.5506)	(3.2734)	(0.0006)	(4.6456)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00053	0.00050	0.00042	0.00063	0.00011	-0.00013
	(0.4616)	(0.6813)	(0.3666)	(0.8659)	(0.6081)	(-1.1581)
ES Incidents$_{t+4}$	-0.00001	0.00006***	-0.00004**	0.00010***	0.00003***	-0.00004***
	(-0.5436)	(4.5916)	(-2.1675)	(8.8803)	(2.9188)	(-5.9231)
ES Incidents$_{t+4}$ × Concentrate	-0.00032***	-0.00021***	-0.00021***	-0.00016***	-0.00011***	-0.00006***
	(-5.4542)	(-6.4736)	(-3.6601)	(-5.0086)	(-5.0794)	(-4.0613)
MSCI ESG$_{t-1}$	0.00072***	-0.00010**	0.00068***	-0.00009**	0.00004	-0.00001
	(6.5148)	(-2.0778)	(6.3266)	(-2.0454)	(1.3384)	(-0.3502)
ACWI$_{t-1}$	-0.00618***	-0.00352***	-0.00388***	-0.00391***	-0.00230***	0.00039
	(-5.8681)	(-6.3448)	(-4.3843)	(-8.2771)	(-4.0469)	(1.3331)
ln Market Cap$_{t-1}$	0.00344***	-0.00132***	0.00057*	-0.00021	0.00287***	-0.00110***
	(8.0783)	(-4.7554)	(1.8925)	(-1.0196)	(9.5635)	(-6.1614)
Book-Market$_{t-1}$	-0.00525***	-0.00180***	-0.00521***	-0.00199***	-0.00004	0.00019***
	(-9.8864)	(-7.7034)	(-10.1462)	(-8.7340)	(-0.3355)	(3.1834)
Leverage$_{t-1}$	-0.00657***	-0.00191***	-0.00537***	-0.00246***	-0.00120***	0.00056***
	(-5.7987)	(-3.7090)	(-4.8288)	(-4.8898)	(-3.4095)	(3.3918)
ROA$_{t-1}$	-0.05589***	-0.08063***	-0.08108***	-0.07252***	0.02519***	-0.00811***
	(-4.7003)	(-13.8260)	(-7.0046)	(-13.0855)	(7.7278)	(-5.5107)
Sales Growth$_{t-1}$	0.00841***	0.00433***	0.00794***	0.00431***	0.00047***	0.00002
	(8.6456)	(9.1373)	(8.1806)	(9.1396)	(2.7895)	(0.3237)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00010***	0.00003***	-0.00001***
	(7.1265)	(3.4478)	(6.5655)	(3.9167)	(6.4486)	(-6.0849)
Constant	-0.01760***	0.01652***	0.00200	0.01047***	-0.01960***	0.00605***
	(-4.4401)	(6.3631)	(0.7072)	(5.4684)	(-6.9985)	(3.7070)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,420,009	17,003,550	5,420,009	17,003,550	5,420,009	17,003,550
R-squared	0.076	0.071	0.057	0.057	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	32.35***	32.75***	24.34***	34.33***	12.99***	19.39***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.2.2 Future governance incidents and ESG scores

Table 5: Position changes of concentrated vs. diversified portfolios ahead of future changes changes in ESG ratings and Governance incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00050**	0.00031***	0.00050**	0.00024***	-0.00000	0.00008***
	(2.4190)	(3.4407)	(2.4558)	(2.6571)	(-0.0782)	(3.5500)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00036	0.00036	0.00033	0.00051	0.00003	-0.00015
	(0.3092)	(0.4913)	(0.2892)	(0.7099)	(0.1353)	(-1.3926)
G Incidents$_{t+4}$	-0.00013***	-0.00009***	-0.00018***	0.00002	0.00005**	-0.00011***
	(-3.2519)	(-3.7355)	(-5.4239)	(1.3109)	(2.4932)	(-7.5611)
G Incidents$_{t+4}$ × Concentrate	-0.00079***	-0.00046***	-0.00054***	-0.00034***	-0.00025***	-0.00012***
	(-7.8873)	(-8.0787)	(-5.7049)	(-6.5431)	(-5.8939)	(-4.2853)
MSCI ESG$_{t-1}$	0.00066***	-0.00017***	0.00061***	-0.00013***	0.00004	-0.00004**
	(5.9472)	(-3.4816)	(5.7191)	(-2.8984)	(1.3753)	(-1.9949)
ACWI$_{t-1}$	-0.00726***	-0.00457***	-0.00497***	-0.00458***	-0.00229***	0.00001
	(-6.9549)	(-8.3621)	(-5.6129)	(-9.7432)	(-4.1217)	(0.0494)
ln Market Cap$_{t-1}$	0.00446***	-0.00019	0.00156***	0.00058***	0.00289***	-0.00077***
	(10.7268)	(-0.7153)	(5.0466)	(2.7872)	(10.0587)	(-4.6860)
Book-Market$_{t-1}$	-0.00446***	-0.00098***	-0.00445***	-0.00136***	-0.00001	0.00038***
	(-8.7432)	(-4.3755)	(-8.9395)	(-6.2020)	(-0.1046)	(6.2205)
Leverage$_{t-1}$	-0.00652***	-0.00183***	-0.00533***	-0.00236***	-0.00118***	0.00053***
	(-5.7441)	(-3.5649)	(-4.7911)	(-4.6933)	(-3.3482)	(3.2493)
ROA$_{t-1}$	-0.05943***	-0.08484***	-0.08439***	-0.07554***	0.02496***	-0.00930***
	(-4.9578)	(-14.3874)	(-7.2488)	(-13.5198)	(7.5380)	(-6.1330)
Sales Growth$_{t-1}$	0.00815***	0.00414***	0.00768***	0.00420***	0.00047***	-0.00005
	(8.4026)	(8.7556)	(7.9235)	(8.9074)	(2.7960)	(-0.7249)
Stock Return$_{t-1}$	0.00033***	0.00008***	0.00031***	0.00009***	0.00003***	-0.00001***
	(7.0844)	(3.2827)	(6.5228)	(3.8295)	(6.3936)	(-7.0220)
Constant	-0.02575***	0.00755***	-0.00588**	0.00407**	-0.01987***	0.00348**
	(-6.6521)	(3.0672)	(-2.0503)	(2.1568)	(-7.3424)	(2.2965)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,407,170	16,957,892	5,407,170	16,957,892	5,407,170	16,957,892
R-squared	0.076	0.071	0.057	0.057	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	38.07***	39.33***	28.73***	32.84***	14.39***	23.50***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.2.3 Raw ESG pillars and disclosed carbon intensity

Table 6: Position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in raw pillar ESG scores, self-disclosed carbon intensity, and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI raw ESG$_{t+4}$	0.00167***	0.00118***	0.00158***	0.00081***	0.00009	0.00037***
	(2.8680)	(4.2797)	(2.7162)	(2.9904)	(0.6728)	(5.8497)
ΔMSCI raw ESG$_{t+4}$ $\times$ Concentrate	0.00559*	0.00708***	0.00536*	0.00721***	0.00023	-0.00013
	(1.8624)	(3.4888)	(1.7993)	(3.6027)	(0.4794)	(-0.4335)
ΔCarbon intensity$^{disclosed}_{t+4}$	-0.00283***	-0.00344***	-0.00292***	-0.00339***	0.00008	-0.00005
	(-3.4627)	(-8.1981)	(-3.6005)	(-8.1229)	(0.4799)	(-0.5808)
ΔCarbon intensity$^{disclosed}_{t+4}$ $\times$ Concentrate	0.00834*	0.00404	0.00880**	0.00435	-0.00046	-0.00032
	(1.8948)	(1.3502)	(2.0070)	(1.4671)	(-0.6868)	(-0.7325)
ES Incidents$_{t+4}$	-0.00007***	0.00000	-0.00008***	0.00004***	0.00001	-0.00004***
	(-2.7031)	(0.0302)	(-3.3914)	(2.9167)	(0.9681)	(-5.4632)
ES Incidents$_{t+4}$ $\times$ Concentrate	-0.00032***	-0.00018***	-0.00022***	-0.00013***	-0.00010***	-0.00005***
	(-4.5751)	(-4.7118)	(-3.2946)	(-3.4821)	(-4.1777)	(-3.4941)
MSCI ESG$_{t-1}$	0.00089***	0.00009	0.00076***	0.00009	0.00013***	-0.00000
	(6.2381)	(1.2514)	(5.4771)	(1.3584)	(3.2881)	(-0.1870)
ACWI$_{t-1}$	-0.00482***	-0.00250***	-0.00217*	-0.00267***	-0.00265***	0.00018
	(-3.4210)	(-3.5987)	(-1.7515)	(-4.3811)	(-3.7537)	(0.4777)
ln Market Cap$_{t-1}$	0.00436***	-0.00116***	0.00099**	0.00030	0.00337***	-0.00146***
	(8.2667)	(-3.1902)	(2.5150)	(1.0203)	(9.0235)	(-6.4694)
Book-Market$_{t-1}$	-0.00586***	-0.00200***	-0.00596***	-0.00244***	0.00010	0.00044***
	(-8.3759)	(-5.7704)	(-8.7437)	(-7.1798)	(0.5707)	(4.8684)
Leverage$_{t-1}$	-0.00821***	-0.00407***	-0.00613***	-0.00457***	-0.00209***	0.00050*
	(-5.0028)	(-4.6969)	(-3.7849)	(-5.4003)	(-4.2783)	(1.9505)
ROA$_{t-1}$	-0.03068*	-0.05642***	-0.06537***	-0.04794***	0.03469***	-0.00849***
	(-1.8885)	(-6.3235)	(-4.0864)	(-5.5315)	(8.3865)	(-3.6777)
Sales Growth$_{t-1}$	0.00436***	0.00346***	0.00367***	0.00353***	0.00069***	-0.00008
	(3.1021)	(4.5253)	(2.6048)	(4.6560)	(2.8699)	(-0.6070)
Stock Return$_{t-1}$	0.00035***	0.00006**	0.00032***	0.00008***	0.00004***	-0.00002***
	(6.5112)	(2.0742)	(5.8603)	(2.7791)	(6.2697)	(-7.9950)
Constant	-0.02766***	0.01331***	-0.00368	0.00490*	-0.02398***	0.00840***
	(-5.5396)	(3.8037)	(-0.9725)	(1.7710)	(-6.8618)	(3.9975)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	3,164,058	8,332,341	3,164,058	8,332,341	3,164,058	8,332,341
R-squared	0.095	0.092	0.076	0.079	0.649	0.630
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	24.16***	17.47***	17.83***	15.36***	11.63***	16.73***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI raw ESG$_{t+4}$ is the absolute change in stock i's raw pillar ESG score between t and $t+4$. ΔCarbon intensity$^{disclosed}_{t+4}$ is the relative change in the stock's self-disclosed carbon intensity between quarters t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund $\times$ year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.2.4 Trade direction: buys vs. sells

Table 7: Buying and selling decisions by number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents

	Concentration by above/ below median number of holdings							
	(1) *D(Acquire)*		(2) *D(Active buy)*		(3) *D(Active sell)*		(4) *D(Liquidate)*	
Fund sample	(a) ESG	(b) Traditional	(c) ESG	(d) Traditional	(e) ESG	(f) Traditional	(g) ESG	(h) Traditional
ΔMSCI ESG$_{t+4}$	-0.00056***	-0.00065***	0.00123***	0.00096***	0.00073***	0.00082***	-0.00140***	-0.00113***
	(-4.1022)	(-9.1915)	(5.2759)	(5.6751)	(3.1275)	(4.9524)	(-9.7177)	(-14.9573)
ΔMSCI ESG$_{t+4}$ $\times$ Concentrate	-0.00123***	-0.00016	0.00114*	-0.00009	0.00117**	0.00040	-0.00108***	-0.00015
	(-3.6641)	(-0.7413)	(1.9534)	(-0.2540)	(2.0235)	(1.1191)	(-3.0044)	(-0.6879)
ES Incidents$_{t+4}$	-0.00004***	-0.00006***	0.00000	0.00007***	-0.00003	0.00003	0.00007***	-0.00003***
	(-3.6218)	(-8.5550)	(0.1019)	(3.8856)	(-1.2207)	(1.4045)	(5.3536)	(-4.6574)
ES Incidents$_{t+4}$ $\times$ Concentrate	0.00014***	0.00008***	-0.00023***	-0.00013***	-0.00004	-0.00002	0.00013***	0.00007***
	(6.7122)	(6.3001)	(-6.2678)	(-6.0678)	(-1.1190)	(-0.8740)	(5.5131)	(5.9771)
MSCI ESG$_{t-1}$	-0.00198***	-0.00115***	0.00253***	0.00073***	0.00188***	0.00104***	-0.00242***	-0.00062***
	(-18.5566)	(-20.9058)	(15.3382)	(5.0645)	(11.1567)	(7.2275)	(-17.2444)	(-11.8201)
ACWI$_{t-1}$	-0.01135***	-0.00669***	0.00459	0.00164	0.00584	0.00369	0.00092	0.00136
	(-4.6495)	(-5.1058)	(1.4097)	(0.6322)	(1.6352)	(1.2937)	(0.5292)	(1.4104)
ln Market Cap$_{t-1}$	-0.01348***	-0.01064***	0.01815***	0.01345***	0.01044***	0.00948***	-0.01511***	-0.01228***
	(-23.9785)	(-29.8441)	(17.6720)	(14.8705)	(8.2792)	(8.1889)	(-29.5598)	(-34.9476)
Book-Market$_{t-1}$	-0.00974***	-0.00669***	0.00046	-0.00142	0.00158*	0.00462***	0.00770***	0.00350***
	(-18.8478)	(-17.6625)	(0.4719)	(-1.6021)	(1.8477)	(6.1823)	(11.0923)	(8.4092)
Leverage$_{t-1}$	-0.00001	0.00600***	-0.00112	-0.00751***	-0.00986***	-0.01053***	0.01098***	0.01204***
	(-0.0096)	(9.4591)	(-0.7603)	(-6.5373)	(-6.5207)	(-9.6187)	(11.7249)	(22.6424)
ROA$_{t-1}$	-0.15085***	-0.12723***	-0.03459*	-0.19868***	0.29774***	0.41450***	-0.11228***	-0.08862***
	(-14.7577)	(-18.4744)	(-1.7402)	(-11.3038)	(19.3344)	(32.0639)	(-12.1951)	(-15.5669)
Sales Growth$_{t-1}$	0.01685***	0.01210***	0.00398***	0.00527***	-0.01773***	-0.01709***	-0.00309***	-0.00028
	(22.1977)	(25.5937)	(3.4895)	(5.8571)	(-15.8343)	(-21.0396)	(-4.7090)	(-0.7225)
Stock Return$_{t-1}$	0.00094***	0.00060***	-0.00048***	-0.00036***	0.00058***	0.00056***	-0.00104***	-0.00080***
	(23.7234)	(23.4825)	(-11.5379)	(-10.3518)	(11.6787)	(14.3936)	(-22.7794)	(-27.0424)
Constant	0.22917***	0.17607***	0.23291***	0.36000***	0.30719***	0.28675***	0.23075***	0.17718***
	(42.2260)	(53.2327)	(24.5792)	(38.7750)	(26.0119)	(24.0450)	(43.5095)	(51.0349)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	5,420,009	17,003,550	5,420,009	17,003,550	5,420,009	17,003,550	5,420,009	17,003,550
R-squared	0.159	0.161	0.362	0.376	0.371	0.372	0.164	0.153
Within R-squared	0.009	0.006	0.003	0.002	0.002	0.002	0.011	0.008
F-statistic	168.56***	256.63***	92.26***	94.03***	97.88***	250.09***	177.92***	243.50***

Notes: This table reports the regressions of the inter-quarter trading decisions of ESG and traditional mutual funds ahead of future changes in stock ESG scores and future environmental and social (ES) incidents. The outcome variable *D(Active sell)* indicates that the fund decreases its position in a given stock more than expected between quarters $t-1$ and t, given its inter-quarter flows between quarters. *D(Active buy)* indicates that the fund increases its position in a given stock more than expected between quarters $t-1$ and t, given its inter-quarter flows between quarters. *D(Liquidate)* indicates that the fund fully divests from its position in a given stock between quarters $t-1$ and t. *D(Acquire)* indicates that the fund newly invests in a position in a given stock between quarters $t-1$ and t. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund $\times$ year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.2.5 Heterogeneity by fund turnover

Table 8: Future incidents and discretionary fund position changes of concentrated and diversified funds: high vs. low turnover ratios

	Discretionary Position Changes			
	Conventional funds		ESG funds	
Incident type:	ES	G	ES	G
	(1)	(2)	(3)	(4)
Panel A: Regression coefficients				
Incidents (t+1 to t+4)	0.0000087	−0.0001791***	−0.0001041***	−0.0003001***
	(0.0000195)	(0.0000327)	(0.0000311)	(0.0000529)
× Concentrated	−0.0000977*	−0.0003209***	−0.0002979***	−0.0008004***
	(0.0000580)	(0.0000965)	(0.0000986)	(0.0001617)
× Low-turnover	0.0001704***	0.0003825***	0.0001383***	0.0002611***
	(0.0000235)	(0.0000397)	(0.0000369)	(0.0000625)
× Concentrated × Low-turnover	−0.0001071*	−0.0000428	0.0001797	0.0005178***
	(0.0000645)	(0.0001084)	(0.0001117)	(0.0001839)
Panel B: Implied slopes by fund type				
Diversified, high-turnover	0.0000087	−0.0001791***	−0.0001041***	−0.0003001***
	(0.0000195)	(0.0000327)	(0.0000311)	(0.0000529)
Concentrated, high-turnover	−0.0000891*	−0.0004999***	−0.0004020***	−0.0011005***
	(0.0000538)	(0.0000891)	(0.0000918)	(0.0001513)
Diversified, low-turnover	0.0001791***	0.0002034***	0.0000342*	−0.0000390
	(0.0000129)	(0.0000216)	(0.0000197)	(0.0000351)
Concentrated, low-turnover	−0.0000258	−0.0001603***	−0.0000840*	−0.0003216***
	(0.0000257)	(0.0000452)	(0.0000475)	(0.0000822)
Sample	Traditional	Traditional	ESG	ESG
Controls	Yes	Yes	Yes	Yes
Fund × year-quarter FE	Yes	Yes	Yes	Yes
Observations	17,003,550	16,957,892	5,420,009	5,407,170
Clusters (funds)	7,200	7,200	3,011	3,010

Notes: OLS regression of discretionary position changes on a triple interaction specification of the number of future RepRisk incidents, an indicator for whether the fund is concentrated or considered diversified, and an indicator that considers whether the fund has a below-median turnover rate. Columns (1)–(2) estimate the model on the sample of traditional (non-ESG) funds; columns (3)–(4) repeat the estimation on the sample of ESG-mandated funds. Columns (1) and (3) use the cumulative number of environmental/social incidents from t+1 to t+4 (*ES incidents*$_{t+4}$); columns (2) and (4) use the analogous count of governance incidents (*G incidents*$_{t+4}$). In all columns, *Concentrated* is an indicator for funds holding fewer than the median number of stocks, and *Low-turnover* is an indicator for below-median portfolio turnover. Each specification also includes the full triple interaction of the same fund characteristics with ΔMSCI$_{t+4}$, one-quarter lagged firm-level controls (log size, book-to-market, leverage, ROA, sales growth, past returns, MSCI ESG score, ACWI membership), and fund×year-quarter fixed effects. Standard errors in parentheses are clustered at the fund level; post regression estimation $\frac{dy}{dx}$ slopes are presented for the four groups in Panel B. $^{*}\,p < 0.10$, $^{**}\,p < 0.05$, $^{***}\,p < 0.01$.

A.2.6 Heterogeneity by expense ratio

Table 9: Future incidents and discretionary fund position changes of concentrated and diversified funds: high vs. low expense ratios

	Discretionary Position Changes			
	Conventional funds		ESG funds	
Incident type:	ES	G	ES	G
	(1)	(2)	(3)	(4)
Panel A: Regression coefficients				
Incidents (t+1 to t+4)	0.0000288	−0.0000889**	−0.0000920**	−0.0002689***
	(0.0000203)	(0.0000353)	(0.0000383)	(0.0000640)
× Concentrated	−0.0000684	−0.0002102***	−0.0001639**	−0.0005192***
	(0.0000443)	(0.0000768)	(0.0000793)	(0.0001324)
× Low-expense	0.0001050***	0.0001647***	0.0000737*	0.0001278*
	(0.0000251)	(0.0000426)	(0.0000442)	(0.0000727)
× Concentrated × Low-expense	−0.0001411**	−0.0002099*	−0.0000526	0.0000428
	(0.0000642)	(0.0001086)	(0.0001198)	(0.0002014)
Panel B: Implied slopes by fund type				
Diversified, high-expense	0.0000288	−0.0000889**	−0.0000920**	−0.0002689***
	(0.0000203)	(0.0000353)	(0.0000383)	(0.0000640)
Concentrated, high-expense	−0.0000396	−0.0002991***	−0.0002559***	−0.0007881***
	(0.0000387)	(0.0000664)	(0.0000666)	(0.0001131)
Diversified, low-expense	0.0001338***	0.0000758***	−0.0000183	−0.0001411***
	(0.0000140)	(0.0000228)	(0.0000218)	(0.0000378)
Concentrated, low-expense	−0.0000757*	−0.0003443***	−0.0002348***	−0.0006175***
	(0.0000431)	(0.0000712)	(0.0000856)	(0.0001430)
Sample	Traditional	Traditional	ESG	ESG
Controls	Yes	Yes	Yes	Yes
Fund × year-quarter FE	Yes	Yes	Yes	Yes
Observations	17,003,550	16,957,892	5,420,009	5,407,170
Clusters (funds)	7,200	7,200	3,011	3,010

Notes: OLS regression of discretionary position changes on a triple interaction specification of the number of future RepRisk incidents, an indicator for whether the fund is concentrated or considered diversified, and an indicator that considers whether the fund has a below-median expense ratio. Columns (1)–(2) estimate the model on the sample of traditional (non-ESG) funds; columns (3)–(4) repeat the estimation on the sample of ESG-mandated funds. Columns (1) and (3) use the cumulative number of environmental/social incidents from t+1 to t+4 (*ES incidents*$_{t+4}$); columns (2) and (4) use the analogous count of governance incidents (*G incidents*$_{t+4}$). In all columns, *Concentrated* is an indicator for funds holding fewer than the median number of stocks, and *Low-expense* is an indicator for a below-median expense ratio. Each specification also includes the full triple interaction of the same fund characteristics with ΔMSCI$_{t+4}$, one-quarter lagged firm-level controls (log size, book-to-market, leverage, ROA, sales growth, past returns, MSCI ESG score, ACWI membership), and fund×year-quarter fixed effects. Standard errors in parentheses are clustered at the fund level; post regression estimation $\frac{dy}{dx}$ slopes are presented for the four groups in Panel B. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A.3 Ownership changes and shareholder distraction

A.3.1 Flow-induced ownership and future ESG scores (OLS)

Table 10: Standardized OLS regressions of future changes in firm ESG scores and raw pillar ESG scores on changes in flow-induced changes in ownership by concentrated and diversified funds

Concentration Measure	Number of stocks		Herfindahl Index	
	(1)	(2)	(3)	(4)
Dependent Variable	ΔMSCI Raw ESG$_{t+4}$	ΔMSCI ESG$_{t+4}$	ΔMSCI Raw ESG$_{t+4}$	ΔMSCI ESG$_{t+4}$
Expected Ownership Concentrated^{ESG}	-0.004	-0.003	0.000	-0.003
	(-1.0409)	(-0.7655)	(0.0760)	(-0.8351)
Expected Ownership Concentrated^{Traditional}	-0.006	0.000	-0.009**	0.000
	(-1.5713)	(0.0873)	(-1.9865)	(0.0137)
Expected Ownership Diversified^{ESG}	0.004	-0.002	0.000	-0.001
	(0.9755)	(-0.4886)	(0.0827)	(-0.3514)
Expected Ownership Diversified^{Traditional}	-0.029***	-0.040***	-0.028***	-0.042***
	(-6.1093)	(-7.3510)	(-6.2878)	(-8.3478)
ln Market Capitalization$_t$	0.014***	0.026***	0.015***	0.027***
	(2.9893)	(4.8353)	(3.0378)	(5.1042)
Book-Market$_t$	-0.010**	-0.009*	-0.010**	-0.009*
	(-2.0330)	(-1.6890)	(-2.0205)	(-1.6518)
Leverage$_t$	0.023***	0.028***	0.023***	0.027***
	(5.0904)	(5.4967)	(5.0766)	(5.4535)
ROA$_t$	-0.003	0.008*	-0.003	0.008*
	(-0.6928)	(1.7522)	(-0.6803)	(1.7317)
Sales Growth$_t$	-0.000	-0.013***	-0.000	-0.013***
	(-0.0167)	(-2.7242)	(-0.0194)	(-2.6964)
Quarterly Stock Return$_t$	0.004	0.001	0.004	0.000
	(1.2286)	(0.1780)	(1.2301)	(0.1352)
Return Volatility$_t$	0.007	0.002	0.007	0.002
	(1.1597)	(0.2773)	(1.1681)	(0.3007)
Industry-Year-Quarter FE	YES	YES	YES	YES
Observations	126,942	126,652	126,942	126,652
R-squared	0.118	0.044	0.118	0.044
Within R-squared	0.002	0.003	0.002	0.003
F-statistic	9.71***	13.98***	9.96***	15.49***

Notes: This table examines the association between future changes in firm ESG scores and carbon intensity, and the flow-induced changes in mutual fund ownership. Expected Ownership in quarter t is estimated as the firm-level dollar flow-induced changes in stock ownership by mutual fund i, keeping previous quarters' holding weights of stock j in mutual fund i constant, scaled by the firm j's shares outstanding, following Coval and Stafford (2007); Wardlaw (2020). ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ΔMSCI raw ESG$_{t+4}$ is the absolute change in stock i's raw pillar ESG score between t and $t+4$. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, quarterly stock return, and 252-day stock return volatility. All continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include the firm's stock exchange country fixed effects, and Fama-French 49 industry × year-quarter fixed effects. Standard errors are clustered at the firm level. Coefficients are standardized, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.3.2 Flow-induced ownership and future ES and G incidents (Poisson)

Table 11: Standardized Poisson regressions of future firm ES and G incidents on changes in flow-induced changes in ownership by concentrated and diversified funds

Concentration Measure	Number of stocks			Herfindahl Index		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	ES Incidents$_{t+4}$	G Incidents$_{t+4}$	ES Incidents$^{severe}_{t+4}$	ES Incidents$_{t+4}$	G Incidents$_{t+4}$	ES Incidents$^{severe}_{t+4}$
Expected Ownership Concentrated^{ESG}	-0.005***	-0.004	-0.018***	-0.005***	-0.002	-0.018***
	(-3.234)	(-1.256)	(-3.527)	(-3.080)	(-0.823)	(-3.845)
Expected Ownership Concentrated^{Traditional}	-0.004**	-0.009***	-0.013**	-0.003***	-0.009***	-0.002
	(-2.091)	(-3.764)	(-2.112)	(-2.595)	(-5.341)	(-0.472)
Expected Ownership Diversified^{ESG}	0.001	0.002	-0.001	-0.001	-0.002	-0.004
	(0.456)	(0.615)	(-0.155)	(-0.384)	(-0.666)	(-0.725)
Expected Ownership Diversified^{Traditional}	0.002	0.004	0.012*	0.005***	0.013***	0.009
	(1.192)	(1.253)	(1.884)	(2.633)	(3.283)	(1.194)
ln Market Capitalization$_t$	0.228***	0.352***	0.704***	0.226***	0.349***	0.703***
	(42.016)	(43.811)	(39.035)	(41.577)	(43.024)	(38.329)
Book-Market$_t$	0.049***	0.091***	0.161***	0.049***	0.090***	0.161***
	(11.268)	(13.227)	(11.586)	(11.250)	(13.221)	(11.589)
Leverage$_t$	0.016***	0.029***	0.068***	0.016***	0.030***	0.068***
	(3.335)	(3.817)	(4.267)	(3.378)	(3.874)	(4.257)
ROA$_t$	-0.028***	-0.049***	-0.092***	-0.028***	-0.049***	-0.092***
	(-8.562)	(-11.419)	(-9.842)	(-8.491)	(-11.358)	(-9.852)
Sales Growth$_t$	-0.015***	-0.034***	-0.090***	-0.016***	-0.035***	-0.091***
	(-5.495)	(-6.841)	(-8.750)	(-5.598)	(-7.000)	(-8.833)
Quarterly Stock Return$_t$	-0.014***	-0.030***	-0.039***	-0.014***	-0.030***	-0.040***
	(-7.778)	(-12.113)	(-6.902)	(-7.840)	(-12.192)	(-6.941)
Return Volatility$_t$	0.023***	0.031***	0.059***	0.023***	0.031***	0.058***
	(4.819)	(4.013)	(3.347)	(4.753)	(3.942)	(3.267)
Industry-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	208,596	206,881	207,220	208,485	206,770	207,109
Pseudo R-squared	0.559	0.492	0.470	0.559	0.492	0.470
χ^2-statistic	3032.18***	3243.02***	2312.35***	3175.82***	3489.04***	2230.43***

Notes: This table examines the association between future changes in firm ESG scores and carbon intensity, and the flow-induced changes in mutual fund ownership. Expected Ownership in quarter t is estimated as the firm-level dollar flow-induced changes in stock ownership by mutual fund i, keeping previous quarters' holding weights of stock j in mutual fund i constant, scaled by the firm j's shares outstanding, following Coval and Stafford (2007); Wardlaw (2020). ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ES Incidents$^{severe}_{t+4}$ denote the cumulative number of severe environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, quarterly stock return, and 252-day stock return volatility. All continuous control variables are winsorized at the 1 and 99 percentiles. Poisson regressions include the firm's stock exchange country fixed effects, and Fama-French 49 industry $\times$ year-quarter fixed effects. Standard errors are clustered at the firm level. Coefficients are standardized, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.3.3 Shareholder distraction and future ES and G incidents (Poisson)

Table 12: Standardized Poisson regressions of future firm ES and G incidents on shareholder distraction of concentrated vs. diversified shareholders

	Concentration by above/ below median number of holdings					
Dependent Variable	ES Incidents$_{t+4}$		G Incidents$_{t+4}$		ES Incidents$^{severe}_{t+4}$	
	(1)	(2)	(3)	(4)	(5)	(6)
Fund distraction measure	ESG	Traditional	ESG	Traditional	ESG	Traditional
Distraction Concentrated^{ESG}	0.005		0.014***		-0.004	
	(1.308)		(2.661)		(-0.239)	
Distraction Diversified^{ESG}	-0.003		-0.016***		-0.018	
	(-0.849)		(-2.902)		(-1.126)	
ΔTotal Ownership Concentrated^{ESG}	-0.002***		-0.004***		-0.008***	
	(-3.122)		(-3.270)		(-2.870)	
ΔTotal Ownership Diversified^{ESG}	-0.000		0.000		-0.001	
	(-0.458)		(0.256)		(-0.263)	
Distraction Concentrated^{Traditional}		0.012***		0.022***		0.032***
		(5.944)		(7.183)		(3.756)
Distraction Diversified^{Traditional}		-0.006		-0.029***		0.007
		(-1.350)		(-4.604)		(0.419)
ΔTotal Ownership Concentrated^{Traditional}		0.001		-0.002		0.006**
		(1.550)		(-1.456)		(2.545)
ΔTotal Ownership Diversified^{Traditional}		0.000		-0.001		-0.000
		(0.004)		(-0.887)		(-0.087)
ln Market Capitalization$_t$	0.136***	0.160***	0.228***	0.266***	0.426***	0.497***
	(42.298)	(40.295)	(41.061)	(42.844)	(32.719)	(32.823)
Book-Market$_t$	0.025***	0.032***	0.047***	0.062***	0.082***	0.106***
	(7.745)	(9.038)	(9.378)	(10.943)	(7.623)	(9.107)
Leverage$_t$	0.006	0.008**	0.018***	0.023***	0.023*	0.034**
	(1.506)	(2.026)	(2.898)	(3.367)	(1.910)	(2.483)
ROA$_t$	-0.015***	-0.019***	-0.028***	-0.035***	-0.048***	-0.057***
	(-6.948)	(-7.677)	(-8.921)	(-10.315)	(-6.462)	(-7.207)
Sales Growth$_t$	-0.007***	-0.009***	-0.018***	-0.023***	-0.052***	-0.061***
	(-3.325)	(-4.200)	(-4.479)	(-5.207)	(-7.016)	(-7.874)
Quarterly Stock Return$_t$	-0.010***	-0.011***	-0.022***	-0.025***	-0.030***	-0.033***
	(-8.326)	(-6.538)	(-11.750)	(-10.074)	(-6.985)	(-6.191)
Return Volatility$_t$	0.016***	0.023***	0.022***	0.033***	0.049***	0.071***
	(4.411)	(5.641)	(3.490)	(4.777)	(3.207)	(4.297)
Industry-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	77,593	111,074	77,218	110,541	77,593	111,074
Pseudo R-squared	0.556	0.547	0.518	0.508	0.449	0.439
χ^2-statistic	2771.08***	2518.22***	2385.25***	2657.56***	1808.50***	1708.22***

Notes: This table examines the association between future firm ES and G associated incidents, and measures of shareholder distraction, which is an inverse measure of monitoring intensity (we follow Chen et al., 2020). Shareholder distraction is the weighted average exposure of firm shareholders to the shock industries, which are exogenous shocks to unrelated Fama-French 12 industries held by firm i's institutional shareholders, to identify the quarters during which shareholders are likely to be distracted and hence shift attention away from focal firm i. We aggregate these measures separately for concentrated and for diversified funds. We control for the total changes in mutual fund ownership by diversified and concentrated portfolios, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, scaled by firm j's shares outstanding, following Coval and Stafford (2007); Huang et al. (2023). ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ES Incidents$^{severe}_{t+4}$ denote the cumulative number of severe environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, quarterly stock return, and 252-day stock return volatility. All continuous control variables are winsorized at the 1 and 99 percentiles. Poisson regressions include Fama-French 12 industry × year-quarter fixed effects. Coefficients are standardized, standard errors are clustered at the firm level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.3.4 Shareholder distraction and future ES and G incidents (LPM)

Table 13: Linear probability models of multiple future firm ES and G incidents on shareholder distraction of concentrated vs. diversified shareholders

	Concentration by above/ below median number of holdings					
Dependent Variable	>1 ES Incidents$_{t+4}$		>1 G Incidents$_{t+4}$		>1 ES Incidents$^{severe}_{t+4}$	
	(1)	(2)	(3)	(4)	(5)	(6)
Fund distraction measure	ESG	Traditional	ESG	Traditional	ESG	Traditional
Distraction Concentrated^{ESG}	1.22239***		1.58956***		0.82454***	
	(5.9181)		(8.3596)		(5.5602)	
Distraction Diversified^{ESG}	-0.06097		-0.66383***		-0.39037***	
	(-0.3387)		(-4.1376)		(-3.0414)	
ΔTotal Ownership Concentrated^{ESG}	-1.05807**		-0.23511		-0.74782***	
	(-2.4523)		(-0.6489)		(-2.9835)	
ΔTotal Ownership Diversified^{ESG}	-0.36347		-0.60607**		-0.10289	
	(-1.0381)		(-2.0376)		(-0.4341)	
Distraction Concentrated^{Traditional}		0.86193***		0.92639***		0.53101***
		(9.0125)		(9.9695)		(7.5296)
Distraction Diversified^{Traditional}		-0.10926**		-0.22560***		-0.03440
		(-2.1139)		(-5.6093)		(-1.0784)
ΔTotal Ownership Concentrated^{Traditional}		0.17217		-0.35860		0.04184
		(0.4859)		(-1.0662)		(0.1689)
ΔTotal Ownership Diversified^{Traditional}		0.05965		-0.08177		0.02134
		(0.4830)		(-0.8310)		(0.2592)
ln Market Capitalization$_t$	0.09347***	0.07902***	0.07541***	0.06070***	0.04524***	0.03633***
	(25.7365)	(27.7060)	(20.5292)	(21.7726)	(14.2183)	(15.2994)
Book-Market$_t$	0.05650***	0.03932***	0.05166***	0.03435***	0.03133***	0.01997***
	(9.9788)	(11.1227)	(9.8864)	(10.8305)	(7.2302)	(8.2463)
Leverage$_t$	0.01897	0.02002	0.02293	0.02124*	0.00464	0.00467
	(0.9789)	(1.4491)	(1.4558)	(1.9185)	(0.3786)	(0.5500)
ROA$_t$	-0.67339***	-0.53795***	-0.53770***	-0.44315***	-0.33007***	-0.26926***
	(-8.2624)	(-10.0949)	(-7.6912)	(-9.6040)	(-6.0535)	(-7.5544)
Sales Growth$_t$	-0.01543***	-0.01341***	-0.01377***	-0.01102***	-0.01148***	-0.00808***
	(-4.1381)	(-5.5627)	(-4.3510)	(-5.2830)	(-6.0281)	(-6.4337)
Quarterly Stock Return$_t$	-0.00049***	-0.00048***	-0.00042***	-0.00037***	-0.00022***	-0.00019***
	(-7.4118)	(-10.4614)	(-7.7656)	(-10.0914)	(-4.8937)	(-6.3679)
Return Volatility$_t$	1.01914***	1.22646***	0.30537	0.67027***	0.32851	0.50583***
	(3.1766)	(5.4851)	(1.1789)	(3.7554)	(1.4978)	(3.4242)
Constant	-0.72354***	-0.59153***	-0.58521***	-0.45451***	-0.35443***	-0.28213***
	(-22.9152)	(-24.3030)	(-19.0198)	(-19.6658)	(-13.3876)	(-14.2939)
Industry-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	77,593	111,074	77,218	110,541	77,593	111,074
R-squared	0.207	0.187	0.168	0.149	0.118	0.101
Within R-squared	0.174	0.162	0.154	0.141	0.096	0.087
F-statistic	70.21***	73.83***	45.71***	46.62***	24.22***	24.25***

Notes: This table examines the association between future instances of more than a single firm ES and G associated incident, and measures of shareholder distraction, which is an inverse measure of monitoring intensity (we follow Chen et al., 2020). Shareholder distraction is the weighted average exposure of firm shareholders to the shock industries, which are exogenous shocks to unrelated Fama-French 12 industries held by firm i's institutional shareholders, to identify the quarters during which shareholders are likely to be distracted and hence shift attention away from focal firm i. We aggregate these measures separately for concentrated and for diversified funds. We control for the total changes in mutual fund ownership by diversified and concentrated portfolios, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, scaled by firm j's shares outstanding, following Coval and Stafford (2007); Huang et al. (2023). >1 ES Incidents$_{t+4}$ is given value 1 if the number of environmental and social RepRisk incidents of firm j in quarter $t+4$ is higher than 1. >1 G Incidents$_{t+4}$ is given value 1 if the number of governance RepRisk incidents of firm j in quarter $t+4$ is higher than 1. >1 ES Incidents$^{severe}_{t+4}$ is given value 1 if the number of severe environmental and social RepRisk incidents of firm j in quarter $t+4$ is higher than 1. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, quarterly stock return, and 252-day stock return volatility. All continuous control variables are winsorized at the 1 and 99 percentiles. OLS regressions include Fama-French 12 industry $\times$ year-quarter fixed effects. Standard errors are clustered at the firm level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.4 Proposal withdrawal

A.4.1 Withdrawal and discretionary ownership change

Table 14: Probability of firm proposal being withdrawn on changes in discretionary ownership by concentrated and diversified funds

	Concentration by above/ below median number of holdings					
Dependent variable	*D(Withdrawn Proposal)*					
Sponsor type	All			Institutional investors		
	(1)	(2)	(3)	(4)	(5)	(6)
Proposal type	All	GOV	SRI	All	GOV	SRI
Discretionary Ownership Concentrated^{ESG}	0.71378***	0.79036***	0.67204***	1.22302***	2.08022***	0.78888***
	(4.9231)	(4.9213)	(3.5600)	(5.4870)	(4.8728)	(3.5639)
Discretionary Ownership Concentrated^{Traditional}	0.14894	0.07978	0.07725	-0.00981	1.58250*	-0.34809
	(0.8813)	(0.4498)	(0.3781)	(-0.0388)	(1.6672)	(-1.5963)
Discretionary Ownership Diversified^{ESG}	-0.02033	0.02243	-0.19145	-0.40261	-0.76971	-0.33617
	(-0.0874)	(0.0974)	(-0.6603)	(-1.3849)	(-1.0384)	(-0.9866)
Discretionary Ownership Diversified^{Traditional}	-0.03712	-0.07174	0.10615	-0.04384	-0.42300**	0.12591
	(-0.6499)	(-0.9220)	(1.2906)	(-0.5977)	(-2.5669)	(1.2163)
Proposal type = "SRI"	0.25556***			0.25750***		
	(14.4196)			(8.2359)		
Primary sponsor = "SRI fund"				-0.01884	-0.23608***	0.01613
				(-0.5542)	(-2.9675)	(0.4246)
Primary sponsor = "Fund"				-0.15911***	-0.14882***	-0.13645***
				(-5.1073)	(-3.0992)	(-3.1179)
# Proposals Previous Meeting	-0.03039***	-0.00397	-0.04028***	-0.04090***	-0.00781	-0.04465***
	(-7.0368)	(-0.9786)	(-6.7462)	(-6.6053)	(-0.8018)	(-5.8841)
ln Market Capitalization$_{t-1}$	-0.00219	0.00764	-0.02455**	0.01382	0.05371***	-0.01654
	(-0.3648)	(1.3772)	(-2.4401)	(1.3118)	(4.0365)	(-1.1045)
Book-Market$_{t-1}$	0.00781	0.00187	0.01792	0.01258	0.02028	0.01216
	(0.3489)	(0.1100)	(0.4440)	(0.2873)	(0.3517)	(0.2058)
Leverage$_{t-1}$	-0.02224	0.02425	-0.09944	0.01732	0.23256*	-0.09488
	(-0.4555)	(0.5156)	(-1.2288)	(0.1744)	(1.9162)	(-0.7376)
Sales Growth$_{t-1}$	-0.04650	-0.00535	-0.08356*	-0.13425**	-0.21707***	-0.11342
	(-1.5222)	(-0.1353)	(-1.8381)	(-2.1528)	(-3.2363)	(-1.4017)
ROA$_{t-1}$	-0.44952	-1.02189**	-0.22217	-0.27313	-1.60522*	-0.37297
	(-1.2276)	(-2.4291)	(-0.3635)	(-0.4246)	(-1.9134)	(-0.4030)
Capex$_{t-1}$	-0.60707**	-0.21113	-0.92923**	-0.79804**	-0.28426	-1.05421*
	(-2.5222)	(-1.0415)	(-2.4729)	(-2.0721)	(-0.7545)	(-1.9560)
Constant	0.29368***	0.05505	0.89465***	0.27019**	-0.23633*	0.87454***
	(4.4608)	(0.9676)	(8.0551)	(2.3891)	(-1.6959)	(5.4346)
Proposal year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Sponsor FE	YES	YES	YES	NO	NO	NO
Observations	4,938	2,259	2,679	1,628	438	1,190
R-squared	0.218	0.106	0.133	0.179	0.288	0.147
Within R-squared	0.088	0.008	0.081	0.131	0.150	0.093
F-statistic	30.61***	5.44***	17.70***	18.47***	11.22***	12.92***

Notes: This table examines the association between the probability of a firm i's shareholder proposal p getting withdrawn (in a sample of proposals that go up for a vote or are withdrawn before the respective shareholder meeting), and the respective firm i's changes in discretionary mutual fund ownership. Discretionary ownership is estimated as the difference of total changes in mutual fund ownership and the firm-level dollar flow-induced changes in stock ownership by mutual fund i, keeping previous quarters' holding weights of stock j in mutual fund i constant, scaled by the firm j's shares outstanding, following Coval and Stafford (2007); Huang et al. (2023). We aggregate the quarterly discretionary changes in ownership for three consecutive quarters before firm i's last annual meeting, allowing for date drift of the proposal withdrawal across years. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the number of proposals from the previous year's shareholder meeting, either withdrawn or up for a vote. In determining whether the proposal's resolution should be categorized as "SRI" or "GOV" we follow Dikolli et al. (2022). For the full sample of withdrawn or voted-on proposals, in columns (1) and (4), we include the indicator Proposal type = "SRI" which takes on the value 1 when the proposal is categorized as an SRI-related proposal. The reference category is a governance-related proposal. We control for 1-quarter lagged controls, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, stock turnover rate, and capital expenditures (capex). All lagged continuous control variables are winsorized at the 1 and 99 percentiles. OLS regressions include proposal year and Fama-French 12 industry fixed effects. Columns (1)-(3) include primary sponsor fixed effects, columns (4)-(6) reduce the sample of proposals to those whose primary sponsor is an institutional investor (i.e., is denoted by ISS to be sponsored by "Fund", "SRI Fund", or "Public Pension"). The reference category in columns (4)-(6) is "Public Pension". Standard errors are clustered at the firm and proposal level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

A.4.2 Withdrawal and flow-induced ownership change

Table 15: Probability of firm proposal being withdrawn on flow-induced changes in ownership by concentrated and diversified funds

	Concentration by above/ below median fund portfolio Herfindahl Index					
Dependent variable	*D(Withdrawn Proposal)*					
Proposal type	All		GOV		SRI	
	(1)	(2)	(3)	(4)	(5)	(6)
Expected Ownership Concentrated^{ESG}	-0.10595		0.01528		0.01050	
	(-0.2888)		(0.0590)		(0.0172)	
Expected Ownership Concentrated^{Traditional}	-0.06933		-0.03139		-0.25138	
	(-0.3971)		(-0.2063)		(-1.1464)	
Expected Ownership Diversified^{ESG}		0.18455		0.38226		0.41489**
		(1.6098)		(1.5295)		(2.0828)
Expected Ownership Diversified^{Traditional}		0.06094		-0.00746		-0.02437
		(0.2987)		(-0.0412)		(-0.0938)
Proposal type = "SRI"	0.25539***	0.25510***				
	(14.3980)	(14.3735)				
# Proposals Previous Meeting	-0.03017***	-0.02936***	-0.00376	-0.00391	-0.04038***	-0.03860***
	(-6.4281)	(-6.3312)	(-0.8893)	(-0.9291)	(-6.3660)	(-6.1506)
ln Market Capitalization$_{t-1}$	-0.00317	-0.00287	0.00702	0.00722	-0.02589***	-0.02509**
	(-0.5308)	(-0.4786)	(1.2776)	(1.3114)	(-2.6317)	(-2.5340)
Book-Market$_{t-1}$	0.00629	0.00582	0.00116	0.00116	0.01544	0.01316
	(0.2799)	(0.2596)	(0.0682)	(0.0681)	(0.3836)	(0.3266)
Leverage$_{t-1}$	-0.01869	-0.02145	0.02646	0.02566	-0.09492	-0.10106
	(-0.3787)	(-0.4342)	(0.5645)	(0.5478)	(-1.1842)	(-1.2595)
Sales Growth$_{t-1}$	-0.05010*	-0.04792	-0.00795	-0.00785	-0.08956**	-0.08322*
	(-1.6542)	(-1.5687)	(-0.2013)	(-0.1985)	(-1.9891)	(-1.8250)
ROA$_{t-1}$	-0.47812	-0.50787	-1.02749**	-1.03406**	-0.29579	-0.38661
	(-1.3074)	(-1.3883)	(-2.4630)	(-2.4837)	(-0.4890)	(-0.6288)
Capex$_{t-1}$	-0.62846**	-0.59752**	-0.22999	-0.23029	-0.95686**	-0.88763**
	(-2.5603)	(-2.4483)	(-1.1266)	(-1.1352)	(-2.5075)	(-2.3630)
Constant	0.30347***	0.29998***	0.06060	0.05932	0.91091***	0.90118***
	(4.6117)	(4.5321)	(1.0746)	(1.0503)	(8.3371)	(8.1922)
Proposal year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Sponsor FE	YES	YES	YES	YES	YES	YES
Observations	4,938	4,938	2,259	2,259	2,679	2,679
R-squared	0.217	0.217	0.105	0.105	0.132	0.132
Within R-squared	0.087	0.087	0.006	0.006	0.080	0.080
F-statistic	39.53***	30.83***	1.17	1.90**	31.09***	18.89***

Notes: This table examines the association between the probability of a firm i's shareholder proposal p getting withdrawn (in a sample of proposals that go up for a vote or are withdrawn before the respective shareholder meeting), and the respective firm's flow-induced changes in mutual fund ownership in firm i. Expected Ownership is estimated as the firm-level dollar flow-induced changes in stock ownership by mutual fund i, keeping previous quarters' holding weights of stock j in mutual fund i constant, scaled by the firm j's shares outstanding, following Coval and Stafford (2007); Wardlaw (2020). We aggregate the quarterly expected changes in ownership for three consecutive quarters before firm i's last annual meeting, allowing for date drift of the proposal withdrawal across years. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the number of proposals from the previous year's shareholder meeting, either withdrawn or up for a vote. In determining whether the proposal's resolution should be categorized as "SRI" or "GOV" we follow Dikolli et al. (2022). For the full sample of withdrawn or voted-on proposals, in columns (a) and (b), we include the indicator Proposal type = "SRI" which takes on the value 1 when the proposal is categorized as an SRI-related proposal. The reference category is a governance-related proposal. We control for a 1-quarter lagged stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and capital expenditures over total assets. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. OLS regressions include proposal year, Fama-French 12 industry fixed effects, and primary sponsor fixed effects. Standard errors are clustered at the firm and proposal levels, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B Supplementary Material

Appendix B is structured as follows: Section B.1 describes the FactSet holdings construction. Sections B.2, B.3, and B.4 contain parallel results using the Herfindahl-Hirschman (HHI) concentration measure and additional robustness checks for the trades, ownership/distraction, and proposal-withdrawal analyses, respectively.

B.1 Data construction

B.1.1 FactSet holdings data

We match our sample of Morningstar funds to equity ownership data from FactSet, including the holding positions and weights of the respective funds. As we are interested in measuring trades of funds based on the current and last quarter's reporting dates, we exclude funds for which FactSet has gaps in the funds' holdings information. We find that 361 Morningstar *FundId*s exhibit gaps in their holdings data as collected from FactSet Ownership. Additionally, we follow the literature and require that the funds in our sample have at least 10 individual holdings in their portfolios at any given moment. Here, we follow Huang et al. (2023) because we are interested in variation in changes in the portfolio allocations of funds. Work on pressure trading and position changes by Coval and Stafford (2007) and Gantchev et al. (2023) imposes a minimum of 20 holdings per fund during their sample period.

Per quarter (our sample consists of 33 calendar quarters starting on 2014-12 and ending at 2022-12), we retrieved for our sample of funds the local FactSet identifier. In FactSet's ownership module, we use the function "*OS_TOP_HLDG_LOCID*" to gather the identifier for the holdings. FactSet uses the historical ticker, the header ticker, the Sedol, or cusip to identify the individual holdings, the position, and the weight in the fund's portfolio. In total, our sample of funds contains 53,603 unique FactSet holding identifiers.

To identify and link the holdings with company-level data, we match the holding identifiers to FactSet's permanent security identifier "*FSYM_SECURITY_ID*". In cases FactSet did not provide a link between holding identifier, *OS_TOP_HLDG_LOCID*, and the permanent security identifier, "*FSYM_SECURITY_ID*", we would (1) identify the specific funds and quarters in which that holding was present, and (2) we would manually download the specific funds' holdings again using an alternative identifier from the FactSet ownership module, using *OS_TOP_HLDG_SEDOL* or *OS_TOP_HLDG_CUSIP* and *OS_TOP_HLDG_NAME* to assign a different identifier as well as the

correct holding name to the local holding identifier *OS_TOP_HLDG_LOCID*. Moreover, (3) we would use the manually gathered identifier to make a correct match to FactSet's permanent security identifier. In addition to FactSet Prices and FactSet Reference Data, we also retrieve the exact security type of the holdings.

Furthermore, in our fund-holdings panel, we only keep the holdings that are categorized as shares. From FactSet Fundamentals, we retrieve information on whether the stock in our holdings database is the primary security of the respective company. As multiple local FactSet identifiers can be matched to a single FactSet permanent security identifier, we gather this data for both identifiers. We initially filtered out the FactSet permanent identifiers that are not the primary security. We then additionally filter out the remaining FactSet local identifiers that are not deemed a primary security. Hence, our final sample contains 31,824 unique global *FSYM_SECURITY_IDs*.

Lastly, we reduce the fund-quarter observations for which cash as a percentage of assets under management exceeds the 0.5 and 99.5 percentiles. We control for sudden abnormalities in the FactSet ownership data. For example, for the fund Sparinvest SICAV - European Value (ISIN code LU1616402803), FactSet Ownership for $<$ Q1 2017 shows an average percentage of cash and/or short-term positions of about 2.5%. In Q1 2017 and Q2 2017, the weights of the stock holdings are inflated to achieve total stock portfolios of 2,181.69% and 2,286.69%, respectively. Hence, FactSet Ownership sets the total weights of the cash and short-term positions to -2,080.69% and -2,186.69%, respectively, to ensure that the final equity portfolio sums to 100.0%. From Q3 2017 onward, the fund's cash percentage in the portfolio falls to 1.64-2.10%. A search in the official Sparinvest semiannual report for Q2 2017 showed that cash as a percentage of net assets in reality was 3.44%.

B.2 Trades: additional results

B.2.1 HHI concentration: future ES incidents

Table IA.1: Position changes of Herfindahl-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00047**	0.00035***	0.00047**	0.00027***	0.00000	0.00008***
	(2.2057)	(3.7585)	(2.2008)	(2.9816)	(0.0522)	(3.6186)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00085	0.00060	0.00077	0.00057	0.00007	0.00003
	(0.8435)	(1.0140)	(0.7813)	(0.9761)	(0.4187)	(0.2865)
ES Incidents$_{t+4}$	-0.00002	0.00005***	-0.00005***	0.00008***	0.00003***	-0.00003***
	(-0.9683)	(4.0318)	(-2.7708)	(6.8343)	(3.2083)	(-3.7454)
ES Incidents$_{t+4}$ × Concentrate	-0.00027***	-0.00016***	-0.00015***	-0.00005*	-0.00012***	-0.00011***
	(-4.9082)	(-5.1036)	(-2.9701)	(-1.8421)	(-5.1266)	(-7.1657)
MSCI ESG$_{t-1}$	0.00073***	-0.00010**	0.00069***	-0.00009**	0.00004	-0.00001
	(6.5098)	(-2.0732)	(6.3316)	(-2.0072)	(1.2941)	(-0.4431)
ACWI$_{t-1}$	-0.00643***	-0.00362***	-0.00408***	-0.00407***	-0.00235***	0.00045
	(-6.0825)	(-6.4303)	(-4.5873)	(-8.4944)	(-4.1257)	(1.5374)
ln Market Cap$_{t-1}$	0.00361***	-0.00127***	0.00070**	-0.00014	0.00292***	-0.00113***
	(8.4639)	(-4.5191)	(2.2830)	(-0.6514)	(9.6771)	(-6.2255)
Book-Market$_{t-1}$	-0.00528***	-0.00182***	-0.00525***	-0.00199***	-0.00003	0.00017***
	(-9.8433)	(-7.7078)	(-10.1194)	(-8.6555)	(-0.2759)	(2.8876)
Leverage$_{t-1}$	-0.00679***	-0.00189***	-0.00555***	-0.00242***	-0.00124***	0.00053***
	(-5.9329)	(-3.6390)	(-4.9435)	(-4.7577)	(-3.4842)	(3.2004)
ROA$_{t-1}$	-0.05539***	-0.08047***	-0.08108***	-0.07268***	0.02569***	-0.00779***
	(-4.6267)	(-13.7391)	(-6.9539)	(-13.0330)	(7.8290)	(-5.3083)
Sales Growth$_{t-1}$	0.00848***	0.00432***	0.00798***	0.00429***	0.00049***	0.00003
	(8.6598)	(9.0394)	(8.1716)	(9.0254)	(2.9225)	(0.4427)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00010***	0.00003***	-0.00001***
	(7.1116)	(3.4204)	(6.5475)	(3.8801)	(6.4820)	(-5.9628)
Constant	-0.01860***	0.01633***	0.00131	0.01007***	-0.01992***	0.00626***
	(-4.6855)	(6.1990)	(0.4619)	(5.1925)	(-7.0782)	(3.7830)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,365,718	16,778,666	5,365,718	16,778,666	5,365,718	16,778,666
R-squared	0.074	0.070	0.056	0.056	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	32.57***	30.23***	24.28***	31.63***	13.52***	20.97***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.2 HHI concentration: future governance incidents

Table IA.2: Position changes of Herfindahl-based concentrated vs. diversified portfolios ahead of future changes changes in ESG ratings and Governance incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00045**	0.00027***	0.00045**	0.00022**	-0.00000	0.00005**
	(2.0881)	(2.9317)	(2.1073)	(2.3824)	(-0.0542)	(2.5548)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00073	0.00049	0.00071	0.00049	0.00001	0.00000
	(0.7228)	(0.8400)	(0.7193)	(0.8435)	(0.0678)	(0.0336)
G Incidents$_{t+4}$	-0.00015***	-0.00010***	-0.00021***	-0.00002	0.00006***	-0.00008***
	(-3.7813)	(-4.2425)	(-6.1303)	(-0.9836)	(2.6977)	(-5.4854)
G Incidents$_{t+4}$ × Concentrate	-0.00064***	-0.00034***	-0.00039***	-0.00012**	-0.00025***	-0.00021***
	(-6.6499)	(-6.1760)	(-4.3739)	(-2.5533)	(-5.9646)	(-7.4305)
MSCI ESG$_{t-1}$	0.00066***	-0.00017***	0.00062***	-0.00013***	0.00004	-0.00004**
	(5.9766)	(-3.4196)	(5.7468)	(-2.8102)	(1.3727)	(-2.0578)
ACWI$_{t-1}$	-0.00753***	-0.00468***	-0.00519***	-0.00476***	-0.00235***	0.00008
	(-7.1829)	(-8.4438)	(-5.8289)	(-9.9631)	(-4.2084)	(0.2795)
ln Market Cap$_{t-1}$	0.00465***	-0.00013	0.00170***	0.00067***	0.00295***	-0.00080***
	(11.1416)	(-0.4733)	(5.4517)	(3.1919)	(10.1797)	(-4.8006)
Book-Market$_{t-1}$	-0.00449***	-0.00099***	-0.00448***	-0.00135***	-0.00000	0.00036***
	(-8.7016)	(-4.3697)	(-8.9187)	(-6.1063)	(-0.0257)	(5.9160)
Leverage$_{t-1}$	-0.00674***	-0.00182***	-0.00551***	-0.00232***	-0.00122***	0.00050***
	(-5.8811)	(-3.5074)	(-4.9046)	(-4.5720)	(-3.4346)	(3.0505)
ROA$_{t-1}$	-0.05913***	-0.08462***	-0.08456***	-0.07578***	0.02543***	-0.00885***
	(-4.8983)	(-14.2883)	(-7.2084)	(-13.4733)	(7.6395)	(-5.8465)
Sales Growth$_{t-1}$	0.00821***	0.00413***	0.00771***	0.00417***	0.00050***	-0.00005
	(8.4065)	(8.6467)	(7.9053)	(8.7854)	(2.9220)	(-0.6363)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00009***	0.00003***	-0.00001***
	(7.0657)	(3.2507)	(6.5006)	(3.7846)	(6.4295)	(-6.8565)
Constant	-0.02693***	0.00721***	-0.00670**	0.00351*	-0.02023***	0.00370**
	(-6.9363)	(2.8904)	(-2.3250)	(1.8365)	(-7.4314)	(2.4133)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,352,906	16,733,344	5,352,906	16,733,344	5,352,906	16,733,344
R-squared	0.074	0.070	0.056	0.056	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	37.38***	36.02***	28.16***	29.57***	15.05***	25.65***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.3 HHI concentration: raw ESG pillars and disclosed carbon

Table IA.3: Position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in raw pillar ESG scores, self-disclosed carbon intensity, and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI raw ESG$_{t+4}$	0.00175***	0.00123***	0.00164***	0.00096***	0.00011	0.00026***
	(2.8340)	(4.3812)	(2.6501)	(3.4833)	(0.8479)	(4.1915)
ΔMSCI raw ESG$_{t+4}$ × Concentrate	0.00446*	0.00506***	0.00437*	0.00457***	0.00009	0.00049*
	(1.7119)	(3.0783)	(1.6886)	(2.8243)	(0.2086)	(1.9370)
ΔCarbon intensity$^{disclosed}_{t+4}$	-0.00242***	-0.00342***	-0.00244***	-0.00330***	0.00002	-0.00011
	(-2.8246)	(-7.9310)	(-2.8533)	(-7.6934)	(0.1200)	(-1.4022)
ΔCarbon intensity$^{disclosed}_{t+4}$ × Concentrate	0.00543	0.00269	0.00550	0.00260	-0.00006	0.00008
	(1.4979)	(1.1231)	(1.5329)	(1.1021)	(-0.1031)	(0.2175)
ES Incidents$_{t+4}$	-0.00008***	-0.00000	-0.00009***	0.00002	0.00001	-0.00002***
	(-3.1671)	(-0.1422)	(-3.9814)	(1.5897)	(1.1081)	(-3.3770)
ES Incidents$_{t+4}$ × Concentrate	-0.00026***	-0.00015***	-0.00017***	-0.00005	-0.00010***	-0.00010***
	(-3.9659)	(-4.1749)	(-2.6254)	(-1.3398)	(-4.0952)	(-6.6659)
MSCI ESG$_{t-1}$	0.00089***	0.00008	0.00076***	0.00009	0.00013***	-0.00001
	(6.1660)	(1.1435)	(5.4083)	(1.3021)	(3.2688)	(-0.3575)
ACWI$_{t-1}$	-0.00517***	-0.00259***	-0.00246**	-0.00287***	-0.00270***	0.00027
	(-3.6520)	(-3.6909)	(-1.9792)	(-4.6423)	(-3.8150)	(0.7352)
ln Market Cap$_{t-1}$	0.00460***	-0.00110***	0.00116***	0.00040	0.00344***	-0.00150***
	(8.6854)	(-2.9705)	(2.9360)	(1.3800)	(9.1329)	(-6.5595)
Book-Market$_{t-1}$	-0.00592***	-0.00201***	-0.00601***	-0.00243***	0.00009	0.00042***
	(-8.3732)	(-5.7312)	(-8.7324)	(-7.0642)	(0.5275)	(4.6520)
Leverage$_{t-1}$	-0.00860***	-0.00404***	-0.00648***	-0.00448***	-0.00213***	0.00045*
	(-5.1822)	(-4.6082)	(-3.9538)	(-5.2344)	(-4.3279)	(1.7113)
ROA$_{t-1}$	-0.03020*	-0.05642***	-0.06545***	-0.04822***	0.03525***	-0.00821***
	(-1.8430)	(-6.2596)	(-4.0555)	(-5.5020)	(8.4526)	(-3.5375)
Sales Growth$_{t-1}$	0.00437***	0.00344***	0.00364**	0.00350***	0.00074***	-0.00006
	(3.0899)	(4.4665)	(2.5617)	(4.5725)	(3.0498)	(-0.4715)
Stock Return$_{t-1}$	0.00035***	0.00006**	0.00032***	0.00008***	0.00004***	-0.00002***
	(6.4663)	(2.0598)	(5.8106)	(2.7615)	(6.3032)	(-7.9508)
Constant	-0.02901***	0.01302***	-0.00459	0.00427	-0.02442***	0.00874***
	(-5.7871)	(3.6690)	(-1.2050)	(1.5231)	(-6.9405)	(4.0983)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	3,130,172	8,201,100	3,130,172	8,201,100	3,130,172	8,201,100
R-squared	0.093	0.091	0.074	0.077	0.649	0.630
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	24.23***	16.57***	17.49***	14.03***	12.06***	19.27***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI raw ESG$_{t+4}$ is the absolute change in stock i's raw pillar ESG score between t and $t+4$. ΔCarbon intensity$^{disclosed}_{t+4}$ is the relative change in the stock's self-disclosed carbon intensity between quarters t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.4 HHI concentration: trade direction

Table IA.4: Buying and selling decisions by number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index							
	(1) *D(Acquire)*		(2) *D(Active buy)*		(3) *D(Active sell)*		(4) *D(Liquidate)*	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	-0.00062***	-0.00066***	0.00129***	0.00095***	0.00085***	0.00087***	-0.00152***	-0.00116***
	(-4.4301)	(-9.1776)	(5.4285)	(5.4801)	(3.5040)	(5.1390)	(-10.1348)	(-14.9991)
ΔMSCI ESG$_{t+4}$ × Concentrate	-0.00063**	0.00006	0.00057	-0.00020	0.00040	-0.00014	-0.00035	0.00028
	(-2.0190)	(0.3090)	(1.0356)	(-0.6068)	(0.7319)	(-0.4148)	(-1.0289)	(1.3912)
ES Incidents$_{t+4}$	-0.00004***	-0.00006***	0.00001	0.00007***	-0.00004*	0.00002	0.00007***	-0.00003***
	(-3.5291)	(-8.1175)	(0.6412)	(3.9844)	(-1.8996)	(0.8349)	(5.5195)	(-3.3620)
ES Incidents$_{t+4}$ × Concentrate	0.00013***	0.00006***	-0.00026***	-0.00011***	0.00003	0.00002	0.00010***	0.00003**
	(5.8228)	(4.5523)	(-6.9742)	(-5.0024)	(0.6345)	(1.0017)	(4.2466)	(2.4473)
MSCI ESG$_{t-1}$	-0.00199***	-0.00114***	0.00251***	0.00072***	0.00191***	0.00103***	-0.00243***	-0.00062***
	(-18.5142)	(-20.5391)	(15.1327)	(4.9346)	(11.3206)	(7.1167)	(-17.1634)	(-11.6132)
ACWI$_{t-1}$	-0.01136***	-0.00677***	0.00434	0.00152	0.00598*	0.00386	0.00104	0.00139
	(-4.6357)	(-5.1266)	(1.3305)	(0.5827)	(1.6690)	(1.3401)	(0.5966)	(1.4331)
ln Market Cap$_{t-1}$	-0.01348***	-0.01056***	0.01830***	0.01346***	0.01028***	0.00930***	-0.01510***	-0.01221***
	(-23.8253)	(-29.4176)	(17.8517)	(14.6983)	(8.1269)	(7.9505)	(-29.3747)	(-34.5272)
Book-Market$_{t-1}$	-0.00972***	-0.00673***	0.00047	-0.00139	0.00157*	0.00465***	0.00770***	0.00347***
	(-18.7233)	(-17.6387)	(0.4766)	(-1.5471)	(1.8165)	(6.1726)	(10.9721)	(8.2837)
Leverage$_{t-1}$	-0.00005	0.00602***	-0.00117	-0.00756***	-0.00976***	-0.01054***	0.01098***	0.01208***
	(-0.0493)	(9.4392)	(-0.7896)	(-6.5206)	(-6.4349)	(-9.5390)	(11.6546)	(22.6670)
ROA$_{t-1}$	-0.15154***	-0.12608***	-0.03376*	-0.20083***	0.29795***	0.41444***	-0.11264***	-0.08755***
	(-14.7328)	(-18.5571)	(-1.6858)	(-11.3498)	(19.2106)	(31.8254)	(-12.1483)	(-15.3131)
Sales Growth$_{t-1}$	0.01684***	0.01206***	0.00401***	0.00522***	-0.01780***	-0.01704***	-0.00306***	-0.00024
	(22.1372)	(25.4904)	(3.4998)	(5.7530)	(-15.7957)	(-20.8686)	(-4.6266)	(-0.6276)
Stock Return$_{t-1}$	0.00094***	0.00060***	-0.00048***	-0.00037***	0.00059***	0.00057***	-0.00104***	-0.00080***
	(23.6121)	(23.1777)	(-11.4957)	(-10.4699)	(11.6248)	(14.4492)	(-22.6456)	(-26.7912)
Constant	0.22942***	0.17472***	0.23080***	0.36108***	0.30952***	0.28890***	0.23028***	0.17530***
	(42.0303)	(52.5058)	(24.3689)	(38.4227)	(26.1197)	(23.9748)	(43.1891)	(50.2972)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	5,365,718	16,778,666	5,365,718	16,778,666	5,365,718	16,778,666	5,365,718	16,778,666
R-squared	0.159	0.160	0.360	0.375	0.369	0.371	0.157	0.146
Within R-squared	0.009	0.006	0.003	0.002	0.002	0.002	0.011	0.008
F-statistic	164.07***	257.53***	91.85***	96.35***	99.41***	250.06***	175.17***	238.90***

Notes: This table reports the regressions of the inter-quarter trading decisions of ESG and traditional mutual funds ahead of future changes in stock ESG scores and future environmental and social (ES) incidents. The outcome variable *D(Active sell)* indicates that the fund decreases its position in a given stock more than expected between quarters $t-1$ and t, given its inter-quarter flows between quarters. *D(Active buy)* indicates that the fund increases its position in a given stock more than expected between quarters $t-1$ and t, given its inter-quarter flows between quarters. *D(Liquidate)* indicates that the fund fully divests from its position in a given stock between quarters $t-1$ and t. *D(Acquire)* indicates that the fund newly invests in a position in a given stock between quarters $t-1$ and t. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.5 HHI concentration: heterogeneity by turnover

Table IA.5: Future incidents and discretionary fund position changes of concentrated and diversified funds: high vs. low turnover ratios

	Discretionary Position Changes			
	Conventional funds		ESG-mandated funds	
RepRisk incident type:	ES	G	ES	G
	(1)	(2)	(3)	(4)
Panel A: Regression coefficients				
Incidents (t+1 to t+4)	−0.0000169	−0.0002453***	−0.0001247***	−0.0003438***
	(0.0000205)	(0.0000342)	(0.0000317)	(0.0000545)
× Concentrated	0.0000022	−0.0000427	−0.0002217**	−0.0006092***
	(0.0000533)	(0.0000875)	(0.0000937)	(0.0001578)
× Low-turnover	0.0001812***	0.0004256***	0.0001606***	0.0003015***
	(0.0000244)	(0.0000412)	(0.0000382)	(0.0000647)
× Concentrated × Low-turnover	−0.0001036*	−0.0001506	0.0001116	0.0003808**
	(0.0000599)	(0.0001000)	(0.0001058)	(0.0001762)
Panel B: Implied slopes by fund type				
Diversified, high-turnover	−0.0000169	−0.0002453***	−0.0001247***	−0.0003438***
	(0.0000205)	(0.0000342)	(0.0000317)	(0.0000545)
Concentrated, high-turnover	−0.0000147	−0.0002880***	−0.0003464***	−0.0009530***
	(0.0000479)	(0.0000784)	(0.0000867)	(0.0001459)
Diversified, low-turnover	0.0001643***	0.0001804***	0.0000359*	−0.0000423
	(0.0000129)	(0.0000216)	(0.0000202)	(0.0000357)
Concentrated, low-turnover	0.0000629**	−0.0000130	−0.0000742*	−0.0002707***
	(0.0000253)	(0.0000440)	(0.0000428)	(0.0000745)
Sample	Traditional	Traditional	ESG	ESG
Controls	Yes	Yes	Yes	Yes
Fund × year-quarter FE	Yes	Yes	Yes	Yes
Observations	16,778,666	16,733,344	5,365,718	5,352,906
Clusters (funds)	7,087	7,087	2,987	2,986

Notes: OLS regression of discretionary position changes on a triple interaction specification of the number of future RepRisk incidents, an indicator for whether the fund is concentrated or considered diversified, and an indicator that considers whether the fund has a below-median turnover rate. Columns (1)–(2) estimate the model on the sample of traditional (non-ESG) funds; columns (3)–(4) repeat the estimation on the sample of ESG-mandated funds. Columns (1) and (3) use the cumulative number of environmental/social incidents from t+1 to t+4 (*ES incidents*$_{t+4}$); columns (2) and (4) use the analogous count of governance incidents (*G incidents*$_{t+4}$). In all columns, *Concentrated* is an indicator for funds that have an above-median portfolio Herfindahl index, and *Low-turnover* is an indicator for below-median portfolio turnover. Each specification also includes the full triple interaction of the same fund characteristics with ΔMSCI$_{t+4}$, one-quarter lagged firm-level controls (log size, book-to-market, leverage, ROA, sales growth, past returns, MSCI ESG score, ACWI membership), and fund×year-quarter fixed effects. Standard errors in parentheses are clustered at the fund level; post regression estimation $\frac{dy}{dx}$ slopes are presented for the four groups in Panel B. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

B.2.6 HHI concentration: heterogeneity by expense ratio

Table IA.6: Future incidents and fund discretionary position changes of concentrated and diversified funds: high vs. low expense ratios

	Discretionary Position Changes			
	Conventional funds		ESG funds	
Incident type:	ES	G	ES	G
	(1)	(2)	(3)	(4)
Panel A: Regression coefficients				
Incidents (t+1 to t+4)	0.0000046	−0.0001448***	−0.0001151***	−0.0003229***
	(0.0000216)	(0.0000376)	(0.0000397)	(0.0000679)
× Concentrated	−0.0000038	−0.0000552	−0.0001144	−0.0003757***
	(0.0000442)	(0.0000755)	(0.0000768)	(0.0001299)
× Low-expense	0.0001103***	0.0001812***	0.0000879*	0.0001615**
	(0.0000264)	(0.0000451)	(0.0000457)	(0.0000765)
× Concentrated × Low-expense	−0.0000560	−0.0000678	−0.0000392	0.0000600
	(0.0000598)	(0.0001009)	(0.0001090)	(0.0001886)
Panel B: Implied slopes by fund type				
Diversified, high-expense	0.0000046	−0.0001448***	−0.0001151***	−0.0003229***
	(0.0000216)	(0.0000376)	(0.0000397)	(0.0000679)
Concentrated, high-expense	0.0000008	−0.0002000***	−0.0002295***	−0.0006986***
	(0.0000373)	(0.0000631)	(0.0000638)	(0.0001077)
Diversified, low-expense	0.0001149***	0.0000365	−0.0000272	−0.0001614***
	(0.0000143)	(0.0000233)	(0.0000223)	(0.0000385)
Concentrated, low-expense	0.0000551	−0.0000866	−0.0001808**	−0.0004770***
	(0.0000369)	(0.0000613)	(0.0000730)	(0.0001287)
Sample	Traditional	Traditional	ESG	ESG
Controls	Yes	Yes	Yes	Yes
Fund × year-quarter FE	Yes	Yes	Yes	Yes
Observations	16,778,666	16,733,344	5,365,718	5,352,906
Clusters (funds)	7,087	7,087	2,987	2,986

Notes: OLS regression of discretionary position changes on a triple interaction specification of the number of future RepRisk incidents, an indicator for whether the fund is concentrated or considered diversified, and an indicator that considers whether the fund has a below-median expense ratio. Columns (1)–(2) estimate the model on the sample of traditional (non-ESG) funds; columns (3)–(4) repeat the estimation on the sample of ESG-mandated funds. Columns (1) and (3) use the cumulative number of environmental/social incidents from t+1 to t+4 (*ES incidents*$_{t+4}$); columns (2) and (4) use the analogous count of governance incidents (*G incidents*$_{t+4}$). In all columns, *Concentrated* is an indicator for funds that have an above-median portfolio Herfindahl index, and *Low-expense* is an indicator for a below-median expense ratio. Each specification also includes the full triple interaction of the same fund characteristics with ΔMSCI$_{t+4}$, one-quarter lagged firm-level controls (log size, book-to-market, leverage, ROA, sales growth, past returns, MSCI ESG score, ACWI membership), and fund×year-quarter fixed effects. Standard errors in parentheses are clustered at the fund level; post regression estimation $\frac{dy}{dx}$ slopes are presented for the four groups in Panel B. $^{*}\,p < 0.10$, $^{**}\,p < 0.05$, $^{***}\,p < 0.01$.

B.2.7 Raw ESG pillar scores (number of holdings)

Table IA.7: Position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in raw pillar ESG ratings and ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI raw ESG$_{t+4}$	0.00083*	0.00037**	0.00086**	0.00016	-0.00003	0.00021***
	(1.9174)	(2.0114)	(1.9932)	(0.8866)	(-0.3243)	(5.0711)
ΔMSCI raw ESG$_{t+4}$ × Concentrate	0.00364	0.00670***	0.00376	0.00655***	-0.00012	0.00015
	(1.5637)	(4.3184)	(1.6256)	(4.2667)	(-0.3309)	(0.6768)
ES Incidents$_{t+4}$	-0.00001	0.00006***	-0.00004**	0.00010***	0.00003***	-0.00004***
	(-0.5720)	(4.5387)	(-2.1984)	(8.8285)	(2.9166)	(-5.9355)
ES Incidents$_{t+4}$ × Concentrate	-0.00032***	-0.00021***	-0.00020***	-0.00015***	-0.00011***	-0.00006***
	(-5.4314)	(-6.4026)	(-3.6342)	(-4.9415)	(-5.0887)	(-4.0422)
MSCI ESG$_{t-1}$	0.00071***	-0.00011**	0.00067***	-0.00010**	0.00004	-0.00001
	(6.4461)	(-2.2714)	(6.2875)	(-2.2157)	(1.2297)	(-0.4180)
ACWI$_{t-1}$	-0.00618***	-0.00353***	-0.00389***	-0.00391***	-0.00229***	0.00039
	(-5.8626)	(-6.3563)	(-4.3847)	(-8.2860)	(-4.0402)	(1.3280)
ln Market Cap$_{t-1}$	0.00345***	-0.00131***	0.00058*	-0.00021	0.00287***	-0.00110***
	(8.0947)	(-4.7214)	(1.9130)	(-0.9803)	(9.5632)	(-6.1542)
Book-Market$_{t-1}$	-0.00526***	-0.00181***	-0.00522***	-0.00199***	-0.00004	0.00019***
	(-9.9045)	(-7.7459)	(-10.1580)	(-8.7681)	(-0.3516)	(3.1541)
Leverage$_{t-1}$	-0.00659***	-0.00191***	-0.00539***	-0.00246***	-0.00120***	0.00055***
	(-5.8126)	(-3.7116)	(-4.8472)	(-4.8821)	(-3.3986)	(3.3783)
ROA$_{t-1}$	-0.05554***	-0.08036***	-0.08074***	-0.07231***	0.02520***	-0.00805***
	(-4.6731)	(-13.7871)	(-6.9786)	(-13.0536)	(7.7366)	(-5.4789)
Sales Growth$_{t-1}$	0.00839***	0.00431***	0.00792***	0.00429***	0.00047***	0.00002
	(8.6282)	(9.1022)	(8.1611)	(9.1098)	(2.7987)	(0.2869)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00010***	0.00003***	-0.00001***
	(7.1234)	(3.4484)	(6.5621)	(3.9186)	(6.4509)	(-6.1026)
Constant	-0.01755***	0.01648***	0.00202	0.01044***	-0.01957***	0.00604***
	(-4.4184)	(6.3545)	(0.7130)	(5.4530)	(-6.9919)	(3.7088)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,419,800	17,002,065	5,419,800	17,002,065	5,419,800	17,002,065
R-squared	0.076	0.071	0.057	0.057	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	32.39***	33.57***	24.58***	35.31***	13.17***	19.04***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI raw ESG$_{t+4}$ is the absolute change in stock i's raw pillar ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.8 Raw ESG pillar scores (HHI)

Table IA.8: Position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in raw pillar ESG ratings and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI raw ESG$_{t+4}$	0.00076*	0.00031	0.00076	0.00016	0.00001	0.00014***
	(1.6512)	(1.6187)	(1.6392)	(0.8719)	(0.0708)	(3.4835)
ΔMSCI raw ESG$_{t+4}$ × Concentrate	0.00349*	0.00546***	0.00382*	0.00491***	-0.00033	0.00056***
	(1.7432)	(4.4037)	(1.9188)	(4.0120)	(-0.9271)	(2.8392)
ES Incidents$_{t+4}$	-0.00002	0.00005***	-0.00005***	0.00008***	0.00003***	-0.00003***
	(-0.9931)	(3.9872)	(-2.7992)	(6.7906)	(3.2083)	(-3.7571)
ES Incidents$_{t+4}$ × Concentrate	-0.00027***	-0.00016***	-0.00015***	-0.00005*	-0.00012***	-0.00011***
	(-4.8934)	(-5.0396)	(-2.9510)	(-1.7808)	(-5.1385)	(-7.1473)
MSCI ESG$_{t-1}$	0.00071***	-0.00011**	0.00067***	-0.00010**	0.00004	-0.00001
	(6.4210)	(-2.2622)	(6.2695)	(-2.1802)	(1.1950)	(-0.4918)
ACWI$_{t-1}$	-0.00643***	-0.00362***	-0.00408***	-0.00407***	-0.00234***	0.00045
	(-6.0759)	(-6.4413)	(-4.5866)	(-8.5013)	(-4.1190)	(1.5302)
ln Market Cap$_{t-1}$	0.00362***	-0.00126***	0.00070**	-0.00013	0.00292***	-0.00113***
	(8.4801)	(-4.4888)	(2.3032)	(-0.6173)	(9.6763)	(-6.2178)
Book-Market$_{t-1}$	-0.00529***	-0.00183***	-0.00526***	-0.00200***	-0.00004	0.00017***
	(-9.8621)	(-7.7457)	(-10.1318)	(-8.6868)	(-0.2920)	(2.8653)
Leverage$_{t-1}$	-0.00681***	-0.00189***	-0.00558***	-0.00242***	-0.00123***	0.00053***
	(-5.9469)	(-3.6401)	(-4.9618)	(-4.7492)	(-3.4758)	(3.1891)
ROA$_{t-1}$	-0.05502***	-0.08020***	-0.08072***	-0.07246***	0.02570***	-0.00774***
	(-4.5975)	(-13.6990)	(-6.9261)	(-12.9993)	(7.8375)	(-5.2785)
Sales Growth$_{t-1}$	0.00846***	0.00430***	0.00796***	0.00427***	0.00049***	0.00003
	(8.6423)	(9.0101)	(8.1520)	(9.0011)	(2.9333)	(0.4075)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00010***	0.00003***	-0.00001***
	(7.1092)	(3.4203)	(6.5450)	(3.8809)	(6.4821)	(-5.9738)
Constant	-0.01853***	0.01629***	0.00136	0.01004***	-0.01989***	0.00625***
	(-4.6585)	(6.1918)	(0.4767)	(5.1811)	(-7.0721)	(3.7827)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,365,509	16,777,183	5,365,509	16,777,183	5,365,509	16,777,183
R-squared	0.074	0.070	0.056	0.056	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	32.68***	30.94***	24.63***	32.43***	13.82***	20.63***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI raw ESG$_{t+4}$ is the absolute change in stock i's raw pillar ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.9 Log-transformed RepRisk ES incidents

Table IA.9: Position changes of concentrated vs. diversified portfolios ahead of future changes in ESG ratings and log ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00052**	0.00038***	0.00053**	0.00026***	-0.00000	0.00012***
	(2.5330)	(4.2106)	(2.5773)	(2.9398)	(-0.0941)	(5.5946)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00025	0.00034	0.00019	0.00053	0.00006	-0.00019*
	(0.2187)	(0.4627)	(0.1677)	(0.7299)	(0.3240)	(-1.7074)
ln ES Incidents$_{t+4}$	-0.00083***	0.00065***	-0.00110***	0.00080***	0.00027***	-0.00014**
	(-3.4637)	(4.9491)	(-4.9918)	(6.7260)	(2.8614)	(-2.2503)
ln ES Incidents$_{t+4}$ × Concentrate	-0.00716***	-0.00537***	-0.00521***	-0.00341***	-0.00195***	-0.00196***
	(-7.0742)	(-8.2650)	(-5.4089)	(-5.4955)	(-5.4503)	(-8.4811)
MSCI ESG$_{t-1}$	0.00078***	-0.00011**	0.00074***	-0.00012***	0.00004	0.00001
	(6.9186)	(-2.2502)	(6.7620)	(-2.6385)	(1.2772)	(0.7934)
ACWI$_{t-1}$	-0.00600***	-0.00371***	-0.00367***	-0.00436***	-0.00233***	0.00064**
	(-5.6626)	(-6.6678)	(-4.1262)	(-9.2145)	(-4.0383)	(2.1203)
ln Market Cap$_{t-1}$	0.00406***	-0.00108***	0.00110***	0.00018	0.00296***	-0.00126***
	(9.1475)	(-3.7766)	(3.4501)	(0.8299)	(9.5068)	(-6.6379)
Book-Market$_{t-1}$	-0.00459***	-0.00166***	-0.00462***	-0.00173***	0.00003	0.00007
	(-8.9177)	(-7.3643)	(-9.2873)	(-7.9093)	(0.2307)	(1.2004)
Leverage$_{t-1}$	-0.00595***	-0.00204***	-0.00471***	-0.00271***	-0.00124***	0.00067***
	(-5.2275)	(-3.9295)	(-4.2193)	(-5.3436)	(-3.4849)	(3.8803)
ROA$_{t-1}$	-0.06078***	-0.08136***	-0.08565***	-0.07329***	0.02487***	-0.00806***
	(-5.1010)	(-14.0110)	(-7.3819)	(-13.2747)	(7.6490)	(-5.5416)
Sales Growth$_{t-1}$	0.00817***	0.00429***	0.00771***	0.00429***	0.00046***	0.00000
	(8.4224)	(9.1084)	(7.9640)	(9.1522)	(2.7350)	(0.0087)
Stock Return$_{t-1}$	0.00033***	0.00008***	0.00031***	0.00009***	0.00003***	-0.00001***
	(7.0612)	(3.3969)	(6.5135)	(3.8471)	(6.3417)	(-5.8756)
Constant	-0.02271***	0.01472***	-0.00232	0.00738***	-0.02039***	0.00734***
	(-5.5650)	(5.5514)	(-0.7944)	(3.7936)	(-7.0369)	(4.2907)
Controls	YES	YES	YES	YES	YES	YES
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,420,009	17,003,550	5,420,009	17,003,550	5,420,009	17,003,550
R-squared	0.076	0.071	0.057	0.057	0.637	0.620
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	34.44***	35.24***	26.54***	32.74***	12.84***	26.04***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ln ES incidents denote the natural logarithm of 1 + the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.10 Log-transformed RepRisk governance incidents

Table IA.10: Position changes of concentrated vs. diversified portfolios ahead of future changes in ESG ratings and log Governance incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00053***	0.00036***	0.00055***	0.00025***	-0.00001	0.00011***
	(2.5852)	(3.8820)	(2.6682)	(2.7436)	(-0.2630)	(5.0439)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00009	0.00023	0.00011	0.00043	-0.00002	-0.00020*
	(0.0788)	(0.3179)	(0.0982)	(0.5969)	(-0.1157)	(-1.7883)
ln G Incidents$_{t+4}$	-0.00112***	-0.00007	-0.00137***	0.00033**	0.00025*	-0.00040***
	(-3.6609)	(-0.3998)	(-4.9382)	(2.1827)	(1.8638)	(-4.3610)
ln G Incidents$_{t+4}$ × Concentrate	-0.01036***	-0.00720***	-0.00763***	-0.00492***	-0.00273***	-0.00228***
	(-8.8184)	(-9.6854)	(-6.8752)	(-7.0420)	(-6.1967)	(-7.8812)
MSCI ESG$_{t-1}$	0.00073***	-0.00013***	0.00069***	-0.00013***	0.00004	0.00000
	(6.5173)	(-2.5870)	(6.3500)	(-2.7306)	(1.2737)	(0.0777)
ACWI$_{t-1}$	-0.00652***	-0.00402***	-0.00415***	-0.00453***	-0.00237***	0.00051*
	(-6.1713)	(-7.2996)	(-4.6490)	(-9.6220)	(-4.1493)	(1.7088)
ln Market Cap$_{t-1}$	0.00460***	-0.00047*	0.00154***	0.00061***	0.00306***	-0.00108***
	(10.3462)	(-1.7178)	(4.6557)	(2.9241)	(10.0346)	(-6.0252)
Book-Market$_{t-1}$	-0.00436***	-0.00121***	-0.00446***	-0.00136***	0.00010	0.00015***
	(-8.6418)	(-5.5352)	(-9.1062)	(-6.4194)	(0.9201)	(2.8179)
Leverage$_{t-1}$	-0.00610***	-0.00164***	-0.00491***	-0.00234***	-0.00119***	0.00070***
	(-5.3834)	(-3.1756)	(-4.4216)	(-4.6466)	(-3.3430)	(4.0693)
ROA$_{t-1}$	-0.06398***	-0.08496***	-0.08818***	-0.07597***	0.02420***	-0.00899***
	(-5.3324)	(-14.4592)	(-7.5600)	(-13.6175)	(7.3677)	(-6.0470)
Sales Growth$_{t-1}$	0.00809***	0.00416***	0.00765***	0.00418***	0.00045***	-0.00002
	(8.3480)	(8.8214)	(7.8933)	(8.9126)	(2.6835)	(-0.3182)
Stock Return$_{t-1}$	0.00033***	0.00008***	0.00031***	0.00009***	0.00003***	-0.00001***
	(7.0156)	(3.2989)	(6.4779)	(3.8044)	(6.2084)	(-6.5913)
Constant	-0.02683***	0.00989***	-0.00563*	0.00387**	-0.02120***	0.00602***
	(-6.5872)	(3.8967)	(-1.8826)	(2.0459)	(-7.4379)	(3.6742)
Observations	5,407,170	16,957,892	5,407,170	16,957,892	5,407,170	16,957,892
R-squared	0.076	0.071	0.057	0.057	0.637	0.621
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	37.12***	38.12***	27.91***	32.99***	14.46***	26.45***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ln G incidents denote the natural logarithm of 1 + the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.11 Dummy indicators for future ES incidents

Table IA.11: Position changes of concentrated vs. diversified portfolios ahead of future changes instances of ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00055***	0.00038***	0.00056***	0.00025***	-0.00001	0.00013***
	(2.6458)	(4.1644)	(2.7212)	(2.8215)	(-0.2169)	(5.8367)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00044	0.00047	0.00032	0.00060	0.00013	-0.00013
	(0.3839)	(0.6441)	(0.2774)	(0.8368)	(0.6728)	(-1.2023)
$= 1$ ES Incidents$_{t+4}$	-0.00146***	0.00082***	-0.00172***	0.00030	0.00026***	0.00052***
	(-2.5854)	(3.2614)	(-3.0374)	(1.1926)	(2.6114)	(10.6050)
$= 1$ ES Incidents$_{t+4}$ × Concentrate	-0.01254***	0.00165	-0.01109***	0.00387*	-0.00144***	-0.00222***
	(-4.0497)	(0.7816)	(-3.5887)	(1.8417)	(-2.8857)	(-7.2914)
> 1 ES Incidents$_{t+4}$	0.00109	0.00106***	0.00076	0.00130***	0.00033*	-0.00024**
	(1.5193)	(3.2070)	(1.0719)	(4.1208)	(1.9452)	(-2.1184)
> 1 ES Incidents$_{t+4}$ × Concentrate	-0.00452	-0.01392***	-0.00209	-0.01177***	-0.00242***	-0.00215***
	(-1.3160)	(-6.2755)	(-0.6163)	(-5.3538)	(-3.7483)	(-4.9967)
MSCI ESG$_{t-1}$	0.00077***	-0.00011**	0.00073***	-0.00012***	0.00004	0.00001
	(6.8820)	(-2.2127)	(6.7241)	(-2.5910)	(1.2748)	(0.7643)
ACWI$_{t-1}$	-0.00561***	-0.00370***	-0.00327***	-0.00441***	-0.00235***	0.00071**
	(-5.2721)	(-6.5752)	(-3.6626)	(-9.2642)	(-4.0336)	(2.3358)
ln Market Cap$_{t-1}$	0.00340***	-0.00118***	0.00046	0.00027	0.00294***	-0.00145***
	(7.5831)	(-4.0450)	(1.4586)	(1.2608)	(9.1280)	(-7.2695)
Book-Market$_{t-1}$	-0.00530***	-0.00174***	-0.00530***	-0.00162***	0.00001	-0.00012**
	(-9.8302)	(-7.5959)	(-10.2717)	(-7.3463)	(0.0437)	(-2.0960)
Leverage$_{t-1}$	-0.00630***	-0.00202***	-0.00508***	-0.00257***	-0.00121***	0.00055***
	(-5.5308)	(-3.9108)	(-4.5508)	(-5.0803)	(-3.4450)	(3.2999)
ROA$_{t-1}$	-0.05807***	-0.08105***	-0.08290***	-0.07390***	0.02483***	-0.00714***
	(-4.8832)	(-13.9646)	(-7.1477)	(-13.3607)	(7.7621)	(-5.0344)
Sales Growth$_{t-1}$	0.00833***	0.00432***	0.00787***	0.00427***	0.00046***	0.00005
	(8.5697)	(9.1426)	(8.1101)	(9.0871)	(2.7748)	(0.7397)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00009***	0.00003***	-0.00001***
	(7.1175)	(3.4149)	(6.5695)	(3.8372)	(6.3765)	(-5.4972)
Constant	-0.01713***	0.01540***	0.00306	0.00656***	-0.02019***	0.00884***
	(-4.1558)	(5.6950)	(1.0557)	(3.3557)	(-6.7768)	(4.9342)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,420,009	17,003,550	5,420,009	17,003,550	5,420,009	17,003,550
R-squared	0.076	0.071	0.057	0.057	0.637	0.620
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	28.73***	30.20***	22.05***	28.47***	10.80***	23.16***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. $= 1$ ES Incidents$_{t+4}$ is given value 1 if the number of environmental and social RepRisk incidents of firm j in quarter $t+4$ is 1. > 1 ES Incidents$_{t+4}$ is given value 1 if the number of environmental and social RepRisk incidents of firm j in quarter $t+4$ is higher than 1. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.12 Severe future ES incidents

Table IA.12: Position changes of concentrated vs. diversified portfolios ahead of future changes in ESG ratings and severe ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$	0.00052**	0.00038***	0.00054***	0.00027***	-0.00001	0.00011***
	(2.5383)	(4.1640)	(2.6326)	(2.9845)	(-0.3182)	(5.2166)
ΔMSCI ESG$_{t+4}$ $\times$ Concentrate	0.00067	0.00059	0.00052	0.00068	0.00015	-0.00009
	(0.5780)	(0.8039)	(0.4514)	(0.9407)	(0.8063)	(-0.8312)
ES Incidents$^{severe}_{t+4}$	-0.00007	0.00016***	-0.00009*	0.00025***	0.00003	-0.00009***
	(-1.1912)	(4.7309)	(-1.7340)	(7.9645)	(0.9927)	(-5.0683)
ES Incidents$^{severe}_{t+4}$ $\times$ Concentrate	-0.00090***	-0.00067***	-0.00055***	-0.00043***	-0.00034***	-0.00024***
	(-4.9144)	(-6.3213)	(-3.1275)	(-4.2131)	(-5.5449)	(-6.0807)
MSCI ESG$_{t-1}$	0.00073***	-0.00010**	0.00070***	-0.00011**	0.00004	0.00000
	(6.5793)	(-2.1381)	(6.4293)	(-2.3095)	(1.2105)	(0.1977)
ACWI$_{t-1}$	-0.00610***	-0.00358***	-0.00367***	-0.00412***	-0.00243***	0.00054*
	(-5.7570)	(-6.4094)	(-4.1339)	(-8.6990)	(-4.2313)	(1.7983)
ln Market Cap$_{t-1}$	0.00338***	-0.00125***	0.00037	-0.00001	0.00302***	-0.00124***
	(7.8301)	(-4.4356)	(1.2132)	(-0.0413)	(9.7369)	(-6.6056)
Book-Market$_{t-1}$	-0.00527***	-0.00175***	-0.00537***	-0.00185***	0.00011	0.00010*
	(-9.8622)	(-7.5858)	(-10.4261)	(-8.2444)	(0.9167)	(1.7030)
Leverage$_{t-1}$	-0.00653***	-0.00190***	-0.00537***	-0.00248***	-0.00116***	0.00058***
	(-5.7596)	(-3.6963)	(-4.8259)	(-4.9287)	(-3.2915)	(3.5384)
ROA$_{t-1}$	-0.05731***	-0.08100***	-0.08174***	-0.07276***	0.02443***	-0.00824***
	(-4.8195)	(-13.9420)	(-7.0579)	(-13.1734)	(7.5546)	(-5.6815)
Sales Growth$_{t-1}$	0.00836***	0.00433***	0.00791***	0.00433***	0.00045***	0.00000
	(8.6013)	(9.1613)	(8.1562)	(9.1992)	(2.6575)	(0.0448)
Stock Return$_{t-1}$	0.00034***	0.00008***	0.00031***	0.00009***	0.00003***	-0.00001***
	(7.1299)	(3.4359)	(6.5849)	(3.8795)	(6.3160)	(-5.7682)
Constant	-0.01715***	0.01599***	0.00369	0.00885***	-0.02084***	0.00714***
	(-4.2781)	(6.0675)	(1.3182)	(4.6374)	(-7.2303)	(4.1944)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,420,009	17,003,550	5,420,009	17,003,550	5,420,009	17,003,550
R-squared	0.076	0.071	0.057	0.057	0.637	0.620
Within R-squared	0.000	0.000	0.000	0.000	0.002	0.001
F-statistic	32.33***	32.19***	23.91***	32.71***	14.67***	22.32***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t(Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES Incidents$^{severe}_{t+4}$ denote the cumulative number of severe environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund $\times$ year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.13 Alternative ESG fund definition: MSCI ESG Leaders

Table IA.13: Position changes of concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents, split for MSCI (non-)ESG Leaders

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG Leader	Non-Leader	ESG Leader	Non-Leader	ESG Leader	Non-Leader
ΔMSCI ESG$_{t+4}$	0.00110***	0.00035**	0.00118***	0.00033*	-0.00008	0.00002
	(3.5605)	(2.0191)	(3.8195)	(1.9020)	(-1.2514)	(0.5916)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00436***	-0.00288**	0.00424***	-0.00257**	0.00012	-0.00031
	(3.0318)	(-2.1902)	(2.9742)	(-1.9651)	(0.5993)	(-1.6062)
ES Incidents$_{t+4}$	0.00000	0.00006***	-0.00001	0.00005**	0.00001	0.00001
	(0.0909)	(2.9852)	(-0.5100)	(2.5529)	(1.6016)	(1.1957)
ES Incidents$_{t+4}$ × Concentrate	-0.00022***	-0.00025***	-0.00011**	-0.00015**	-0.00011***	-0.00009***
	(-3.9660)	(-4.0269)	(-2.0302)	(-2.5346)	(-6.9607)	(-4.4047)
MSCI ESG$_{t-1}$	0.00002	0.00038***	0.00013	0.00038***	-0.00011**	-0.00000
	(0.1289)	(4.0210)	(0.7068)	(4.0733)	(-2.3034)	(-0.1607)
ACWI$_{t-1}$	-0.00209	-0.00411***	-0.00032	-0.00344***	-0.00177**	-0.00067
	(-1.4665)	(-4.4586)	(-0.2479)	(-4.2266)	(-2.3095)	(-1.5713)
ln Market Cap$_{t-1}$	0.00126**	-0.00030	0.00137***	0.00011	-0.00011	-0.00040
	(2.1084)	(-0.7254)	(2.7007)	(0.3265)	(-0.2860)	(-1.5738)
Book-Market$_{t-1}$	-0.00522***	-0.00282***	-0.00526***	-0.00270***	0.00004	-0.00012
	(-6.9752)	(-6.7452)	(-7.1624)	(-6.5283)	(0.2539)	(-1.3353)
Leverage$_{t-1}$	-0.00375**	-0.00626***	-0.00297	-0.00612***	-0.00078	-0.00015
	(-1.9706)	(-6.1289)	(-1.5776)	(-6.0021)	(-1.6436)	(-0.5709)
ROA$_{t-1}$	-0.09253***	-0.04846***	-0.10808***	-0.05168***	0.01555***	0.00322
	(-5.1699)	(-4.9651)	(-6.1344)	(-5.4246)	(3.8113)	(1.3385)
Sales Growth$_{t-1}$	0.00858***	0.00543***	0.00847***	0.00501***	0.00011	0.00043***
	(7.2533)	(6.2659)	(7.1666)	(5.8252)	(0.6239)	(3.1455)
Stock Return$_{t-1}$	0.00036***	0.00002	0.00035***	0.00002	0.00001**	-0.00000
	(7.0502)	(0.6742)	(6.8501)	(0.7386)	(2.0566)	(-0.6559)
Constant	-0.00307	0.00656*	-0.00486	0.00502	0.00178	0.00155
	(-0.5336)	(1.6890)	(-1.0051)	(1.6072)	(0.4993)	(0.6504)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	2,584,038	5,562,613	2,584,038	5,562,613	2,584,038	5,562,613
R-squared	0.079	0.071	0.063	0.056	0.653	0.630
Within R-squared	0.000	0.000	0.000	0.000	0.000	0.000
F-statistic	19.21***	12.77***	18.15***	11.32***	10.38***	5.03***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t(Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG Leader by MSCI, 0 otherwise. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.14 Stock-year-quarter fixed effects: future ES incidents

Table IA.14: Trading the same stocks: position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00091	0.00020	0.00082	0.00045	0.00008	-0.00025**
	(0.7631)	(0.2626)	(0.6978)	(0.6114)	(0.4316)	(-2.2238)
ES Incidents$_{t+4}$ × Concentrate	-0.00031***	-0.00019***	-0.00021***	-0.00014***	-0.00010***	-0.00005***
	(-5.1617)	(-5.6919)	(-3.6323)	(-4.4161)	(-4.4930)	(-3.4780)
Constant	0.01135***	-0.00032***	0.00436***	0.00387***	0.00700***	-0.00419***
	(130.4613)	(-7.4738)	(51.3639)	(95.2127)	(233.7240)	(-253.6748)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Stock-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,418,715	17,003,509	5,418,715	17,003,509	5,418,715	17,003,509
R-squared	0.096	0.083	0.078	0.068	0.644	0.624
Within R-squared	0.000	0.000	0.000	0.000	0.000	0.000
F-statistic	13.58***	16.22***	6.87***	9.90***	10.10***	9.51***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. Regressions include fund × year-quarter fixed effects and stock × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

Table IA.15: Trading the same stocks: position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00075	0.00023	0.00069	0.00033	0.00007	-0.00009
	(0.7309)	(0.3893)	(0.6746)	(0.5466)	(0.3745)	(-0.9176)
ES Incidents$_{t+4}$ × Concentrate	-0.00027***	-0.00014***	-0.00017***	-0.00004	-0.00011***	-0.00010***
	(-4.9136)	(-4.5479)	(-3.1613)	(-1.4194)	(-4.7859)	(-6.7724)
Constant	0.01176***	-0.00016***	0.00462***	0.00396***	0.00713***	-0.00412***
	(132.4673)	(-3.4668)	(53.9418)	(88.2205)	(217.2988)	(-196.3026)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Stock-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,364,413	16,778,625	5,364,413	16,778,625	5,364,413	16,778,625
R-squared	0.095	0.082	0.077	0.067	0.644	0.625
Within R-squared	0.000	0.000	0.000	0.000	0.000	0.000
F-statistic	12.29***	10.38***	5.26***	1.15	11.48***	24.94***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. Regressions include fund × year-quarter fixed effects and stock × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.15 Stock-year-quarter fixed effects: future governance incidents

Table IA.16: Trading the same stocks: position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and governance incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00074	0.00010	0.00075	0.00037	-0.00001	-0.00027**
	(0.6263)	(0.1286)	(0.6386)	(0.4992)	(-0.0434)	(-2.3737)
G Incidents$_{t+4}$ × Concentrate	-0.00079***	-0.00042***	-0.00055***	-0.00032***	-0.00024***	-0.00010***
	(-7.7514)	(-7.3342)	(-5.7506)	(-5.9926)	(-5.4962)	(-3.6758)
Constant	0.01161***	-0.00022***	0.00454***	0.00396***	0.00706***	-0.00417***
	(121.2661)	(-4.4359)	(49.7982)	(86.6366)	(181.4647)	(-190.7070)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Stock-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,405,885	16,957,851	5,405,885	16,957,851	5,405,885	16,957,851
R-squared	0.096	0.083	0.078	0.068	0.644	0.624
Within R-squared	0.000	0.000	0.000	0.000	0.000	0.000
F-statistic	30.12***	26.90***	16.71***	18.00***	15.13***	10.58***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. Regressions include fund × year-quarter fixed effects and stock × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

Table IA.17: Trading the same stocks: position changes of number-of-stocks-based concentrated vs. diversified portfolios ahead of future changes in ESG ratings and governance incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
	(a)	(b)	(c)	(d)	(e)	(f)
Fund sample	ESG	Traditional	ESG	Traditional	ESG	Traditional
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00066	0.00018	0.00066	0.00029	-0.00000	-0.00011
	(0.6354)	(0.3017)	(0.6451)	(0.4854)	(-0.0077)	(-1.0790)
G Incidents$_{t+4}$ × Concentrate	-0.00066***	-0.00031***	-0.00041***	-0.00010**	-0.00025***	-0.00020***
	(-6.8013)	(-5.6436)	(-4.5721)	(-2.1348)	(-5.8947)	(-7.0507)
Constant	0.01197***	-0.00009*	0.00476***	0.00399***	0.00721***	-0.00408***
	(120.0577)	(-1.6665)	(50.5705)	(79.8817)	(174.5310)	(-150.4657)
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Stock-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	5,351,610	16,733,303	5,351,610	16,733,303	5,351,610	16,733,303
R-squared	0.095	0.082	0.077	0.067	0.644	0.625
Within R-squared	0.000	0.000	0.000	0.000	0.000	0.000
F-statistic	23.19***	15.94***	10.62***	2.38*	17.52***	27.11***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator. Regressions include fund × year-quarter fixed effects and stock × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.16 Triple interaction with ESG fund: future ES incidents (number of holdings)

Table IA.18: Position changes of concentrated vs. diversified portfolios ESG and conventional funds ahead of future changes changes in ESG ratings and ES incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
ÈSG fund indicator	(a) MS General ESG	(b) MSCI ESG Leader	(c) MS General ESG	(d) MSCI ESG Leader	(e) MS General ESG	(f) MSCI ESG Leader
ΔMSCI ESG$_{t+4}$	0.00046***	0.00025	0.00037***	0.00024	0.00009***	0.00001
	(5.0477)	(1.4609)	(4.1646)	(1.4171)	(4.1500)	(0.2375)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00054	-0.00285**	0.00064	-0.00254*	-0.00010	-0.00031
	(0.7418)	(-2.1691)	(0.8895)	(-1.9446)	(-0.9125)	(-1.6010)
ΔMSCI ESG$_{t+4}$ × ESG Fund	-0.00020	0.00110***	-0.00013	0.00115***	-0.00007	-0.00005
	(-0.9436)	(3.2390)	(-0.6206)	(3.3948)	(-1.4421)	(-0.6860)
ΔMSCI ESG$_{t+4}$ × Concentrate × ESG Fund	-0.00010	0.00713***	-0.00025	0.00670***	0.00015	0.00043
	(-0.0724)	(3.6378)	(-0.1822)	(3.4394)	(0.6860)	(1.5503)
ES Incidents$_{t+4}$	0.00003**	0.00005**	0.00010***	0.00004*	-0.00007***	0.00001
	(2.1512)	(2.1969)	(8.5214)	(1.8662)	(-8.3981)	(0.9044)
ES Incidents$_{t+4}$ × Concentrate	-0.00021***	-0.00024***	-0.00015***	-0.00015**	-0.00005***	-0.00009***
	(-6.2372)	(-3.9898)	(-4.9646)	(-2.5029)	(-3.5974)	(-4.3715)
ES Incidents$_{t+4}$ × ESG Fund	0.00004	-0.00002	-0.00013***	-0.00003	0.00017***	0.00001
	(1.5247)	(-0.7252)	(-5.9713)	(-0.9895)	(9.6319)	(0.3710)
ES Incidents$_{t+4}$ × Concentrate × ESG Fund	-0.00013*	0.00001	-0.00005	0.00003	-0.00007***	-0.00002
	(-1.9118)	(0.1718)	(-0.8355)	(0.3862)	(-2.7800)	(-0.7407)
Controls	YES	YES	YES	YES	YES	YES
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	22,423,559	8,146,651	22,423,559	8,146,651	22,423,559	8,146,651
R-squared	0.073	0.074	0.057	0.059	0.627	0.639
Within R-squared	0.000	0.000	0.000	0.000	0.001	0.000
F-statistic	34.87***	17.98***	36.69***	15.79***	17.44***	8.74***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Leader takes the value 1 if fund i is designated an ESG Leader by MSCI, 0 otherwise. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator, 0 otherwise. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.17 Triple interaction with ESG fund: future ES incidents (HHI)

Table IA.19: Position changes of concentrated vs. diversified portfolios ESG and conventional funds ahead of future changes changes in ESG ratings and ES incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
ÈSG fund indicator	(a) MS General ESG	(b) MSCI ESG Leader	(c) MS General ESG	(d) MSCI ESG Leader	(e) MS General ESG	(f) MSCI ESG Leader
ΔMSCI ESG$_{t+4}$	0.00042***	0.00011	0.00035***	0.00012	0.00006***	-0.00001
	(4.4998)	(0.6045)	(3.8597)	(0.6619)	(3.0932)	(-0.2330)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00063	-0.00158	0.00058	-0.00143	0.00005	-0.00014
	(1.0771)	(-1.4141)	(0.9984)	(-1.2922)	(0.5327)	(-0.7928)
ΔMSCI ESG$_{t+4}$ × ESG Fund	-0.00022	0.00143***	-0.00017	0.00143***	-0.00005	-0.00001
	(-0.9627)	(3.9206)	(-0.7660)	(3.9578)	(-0.9020)	(-0.1317)
ΔMSCI ESG$_{t+4}$ × Concentrate × ESG Fund	0.00014	0.00459***	0.00019	0.00447***	-0.00004	0.00012
	(0.1236)	(2.7584)	(0.1617)	(2.7067)	(-0.2148)	(0.4638)
ES Incidents$_{t+4}$	0.00002	0.00003	0.00008***	0.00001	-0.00005***	0.00002
	(1.6231)	(1.2720)	(6.4606)	(0.4330)	(-6.5498)	(1.6450)
ES Incidents$_{t+4}$ × Concentrate	-0.00016***	-0.00015***	-0.00005*	-0.00003	-0.00010***	-0.00012***
	(-4.9002)	(-2.6429)	(-1.8041)	(-0.5240)	(-6.7858)	(-5.3947)
ES Incidents$_{t+4}$ × ESG Fund	0.00004	-0.00003	-0.00012***	-0.00003	0.00016***	-0.00000
	(1.4502)	(-1.0388)	(-5.3795)	(-1.0741)	(9.0338)	(-0.0811)
ES Incidents$_{t+4}$ × Concentrate × ESG Fund	-0.00013**	0.00002	-0.00010*	0.00001	-0.00002	0.00001
	(-1.9898)	(0.3116)	(-1.7409)	(0.1659)	(-0.8292)	(0.4659)
Controls	YES	YES	YES	YES	YES	YES
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	22,144,384	8,093,055	22,144,384	8,093,055	22,144,384	8,093,055
R-squared	0.071	0.073	0.056	0.058	0.627	0.639
Within R-squared	0.000	0.000	0.000	0.000	0.001	0.000
F-statistic	33.20***	16.75***	34.83***	15.25***	18.83***	7.05***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Leader takes the value 1 if fund i is designated an ESG Leader by MSCI, 0 otherwise. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator, 0 otherwise. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.18 Triple interaction with ESG fund: future governance incidents (number of holdings)

Table IA.20: Position changes of concentrated vs. diversified portfolios ESG and conventional funds ahead of future changes changes in ESG ratings and Governance incidents

	Concentration by above/ below median number of holdings					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
ÈSG fund indicator	(a) MS General ESG	(b) MSCI ESG Leader	(c) MS General ESG	(d) MSCI ESG Leader	(e) MS General ESG	(f) MSCI ESG Leader
ΔMSCI ESG$_{t+4}$	0.00038***	0.00017	0.00031***	0.00017	0.00007***	0.00000
	(4.1920)	(1.0137)	(3.5034)	(1.0111)	(3.2276)	(0.0443)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00040	-0.00286**	0.00053	-0.00252*	-0.00013	-0.00034*
	(0.5474)	(-2.1784)	(0.7338)	(-1.9310)	(-1.1779)	(-1.7566)
ΔMSCI ESG$_{t+4}$ × ESG Fund	-0.00015	0.00116***	-0.00008	0.00118***	-0.00007	-0.00003
	(-0.6770)	(3.3990)	(-0.3789)	(3.4866)	(-1.3118)	(-0.3723)
ΔMSCI ESG$_{t+4}$ × Concentrate × ESG Fund	-0.00012	0.00700***	-0.00023	0.00665***	0.00011	0.00035
	(-0.0877)	(3.5688)	(-0.1665)	(3.4138)	(0.4885)	(1.2479)
G Incidents$_{t+4}$	-0.00014***	-0.00012***	0.00002	-0.00012***	-0.00016***	-0.00000
	(-5.7273)	(-3.0997)	(0.8412)	(-3.4493)	(-9.5584)	(-0.1894)
G Incidents$_{t+4}$ × Concentrate	-0.00045***	-0.00058***	-0.00034***	-0.00040***	-0.00011***	-0.00018***
	(-7.8796)	(-5.5767)	(-6.4955)	(-3.9624)	(-3.9577)	(-4.5810)
G Incidents$_{t+4}$ × ESG Fund	0.00016***	0.00008	-0.00018***	0.00002	0.00034***	0.00006*
	(3.2221)	(1.3192)	(-4.7941)	(0.3278)	(9.8029)	(1.8762)
G Incidents$_{t+4}$ × Concentrate × ESG Fund	-0.00036***	0.00007	-0.00020*	0.00016	-0.00016***	-0.00009*
	(-3.1174)	(0.4158)	(-1.8324)	(1.0330)	(-3.1466)	(-1.9473)
Controls	YES	YES	YES	YES	YES	YES
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	22,365,062	8,123,943	22,365,062	8,123,943	22,365,062	8,123,943
R-squared	0.073	0.074	0.057	0.059	0.627	0.639
Within R-squared	0.000	0.000	0.000	0.000	0.001	0.000
F-statistic	45.74***	21.57***	39.38***	18.30***	21.99***	9.04***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Leader takes the value 1 if fund i is designated an ESG Leader by MSCI, 0 otherwise. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator, 0 otherwise. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.2.19 Triple interaction with ESG fund: future governance incidents (HHI)

Table IA.21: Position changes of concentrated vs. diversified portfolios ESG and conventional funds ahead of future changes changes in ESG ratings and Governance incidents

	Concentration by above/ below median fund portfolio Herfindahl Index					
	(1) Position Changes		(2) Discret. Position Changes		(3) Expected Position Changes	
ÈSG fund indicator	(a) MS General ESG	(b) MSCI ESG Leader	(c) MS General ESG	(d) MSCI ESG Leader	(e) MS General ESG	(f) MSCI ESG Leader
ΔMSCI ESG$_{t+4}$	0.00034***	0.00004	0.00029***	0.00006	0.00005**	-0.00002
	(3.6725)	(0.2020)	(3.2160)	(0.3125)	(2.2120)	(-0.4864)
ΔMSCI ESG$_{t+4}$ × Concentrate	0.00053	-0.00161	0.00050	-0.00147	0.00002	-0.00014
	(0.8981)	(-1.4451)	(0.8661)	(-1.3236)	(0.2481)	(-0.7946)
ΔMSCI ESG$_{t+4}$ × ESG Fund	-0.00016	0.00146***	-0.00012	0.00144***	-0.00004	0.00001
	(-0.7195)	(4.0049)	(-0.5339)	(3.9746)	(-0.8424)	(0.1976)
ΔMSCI ESG$_{t+4}$ × Concentrate × ESG Fund	0.00014	0.00460***	0.00020	0.00458***	-0.00006	0.00002
	(0.1214)	(2.7651)	(0.1734)	(2.7724)	(-0.2947)	(0.0941)
G Incidents$_{t+4}$	-0.00016***	-0.00015***	-0.00003	-0.00017***	-0.00013***	0.00001
	(-6.1952)	(-3.8102)	(-1.4447)	(-4.6933)	(-7.7159)	(0.4714)
G Incidents$_{t+4}$ × Concentrate	-0.00033***	-0.00040***	-0.00012**	-0.00017*	-0.00021***	-0.00023***
	(-6.0101)	(-4.0722)	(-2.5140)	(-1.8051)	(-7.1677)	(-5.5709)
G Incidents$_{t+4}$ × ESG Fund	0.00016***	0.00005	-0.00016***	0.00001	0.00032***	0.00005
	(3.0339)	(0.8039)	(-4.2055)	(0.0980)	(9.1438)	(1.3564)
G Incidents$_{t+4}$ × Concentrate × ESG Fund	-0.00033***	0.00010	-0.00027***	0.00012	-0.00006	-0.00002
	(-2.9409)	(0.6681)	(-2.6508)	(0.8505)	(-1.1326)	(-0.4652)
Controls	YES	YES	YES	YES	YES	YES
Fund-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	22,086,250	8,070,433	22,086,250	8,070,433	22,086,250	8,070,433
R-squared	0.072	0.073	0.056	0.058	0.627	0.639
Within R-squared	0.000	0.000	0.000	0.000	0.001	0.000
F-statistic	42.83***	20.12***	36.81***	17.67***	23.88***	7.35***

Notes: OLS regressions on mutual fund trades. Position Changes is the change in the position of fund i in stock j in quarter t (Gantchev et al., 2023; Giannetti and Jotikasthira, 2024). Expected Position Changes are estimated as the dollar flow-induced trades, keeping previous quarters' holding weights constant. Discretionary Position Changes are estimated as *Position Changes*$_{i,j,t}$ − *Expected Position Changes*$_{i,j,t}$. Position Changes, Expected Position Changes, and Discretionary Position Changes are trimmed at the 0.5 and 99.5 percentiles. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ΔMSCI ESG$_{t+4}$ is the absolute change in stock i's ESG score between t and $t+4$. ESG Leader takes the value 1 if fund i is designated an ESG Leader by MSCI, 0 otherwise. ESG Fund takes the value 1 if fund i is designated an ESG fund by Morningstar's "General ESG Fund" indicator, 0 otherwise. We control for the previous quarter's stock-level industry-adjusted MSCI ESG score, a dummy indicating whether stock i was included in the MSCI All Country World Index (ACWI), the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and quarterly stock return. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. Regressions include fund × year-quarter fixed effects. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.3 Ownership and shareholder distraction: additional results

B.3.1 HHI concentration: Shareholder distraction and incidents (Poisson)

Table IA.22: Standardized Poisson regressions of future firm ES and G incidents on shareholder distraction of concentrated vs. diversified shareholders

	Concentration by above/ below median fund portfolio Herfindahl Index					
Dependent Variable	ES Incidents$_{t+4}$		G Incidents$_{t+4}$		ES Incidents$^{severe}_{t+4}$	
	(1)	(2)	(3)	(4)	(5)	(6)
Fund distraction measure	ESG	Traditional	ESG	Traditional	ESG	Traditional
Distraction Concentrated^{ESG}	0.002		0.009*		-0.012	
	(0.410)		(1.732)		(-0.755)	
Distraction Diversified^{ESG}	-0.001		-0.016***		-0.014	
	(-0.280)		(-2.892)		(-0.829)	
ΔTotal Ownership Concentrated^{ESG}	-0.001		-0.002		-0.003	
	(-1.159)		(-0.856)		(-0.690)	
ΔTotal Ownership Diversified^{ESG}	-0.001*		-0.001		-0.004*	
	(-1.951)		(-0.835)		(-1.819)	
Distraction Concentrated^{Traditional}		0.009***		0.018***		0.021**
		(3.691)		(4.873)		(2.422)
Distraction Diversified^{Traditional}		-0.004		-0.027***		0.017
		(-0.846)		(-3.802)		(0.992)
ΔTotal Ownership Concentrated^{Traditional}		0.001		-0.000		0.008***
		(0.789)		(-0.033)		(2.839)
ΔTotal Ownership Diversified^{Traditional}		-0.000		-0.003		-0.004
		(-0.302)		(-1.527)		(-1.357)
ln Market Capitalization$_t$	0.138***	0.169***	0.230***	0.278***	0.426***	0.522***
	(40.281)	(39.908)	(39.422)	(41.783)	(30.878)	(33.376)
Book-Market$_t$	0.027***	0.036***	0.051***	0.068***	0.089***	0.117***
	(8.023)	(9.943)	(9.494)	(11.902)	(8.145)	(10.118)
Leverage$_t$	0.006*	0.009**	0.020***	0.024***	0.025**	0.037***
	(1.777)	(2.221)	(3.279)	(3.362)	(2.050)	(2.588)
ROA$_t$	-0.017***	-0.021***	-0.030***	-0.040***	-0.052***	-0.065***
	(-7.903)	(-8.143)	(-9.813)	(-11.095)	(-7.395)	(-7.618)
Sales Growth$_t$	-0.007***	-0.009***	-0.020***	-0.024***	-0.054***	-0.059***
	(-3.662)	(-4.007)	(-4.791)	(-5.313)	(-7.370)	(-7.444)
Quarterly Stock Return$_t$	-0.010***	-0.011***	-0.023***	-0.026***	-0.029***	-0.034***
	(-8.436)	(-6.917)	(-11.686)	(-10.488)	(-7.185)	(-6.503)
Return Volatility$_t$	0.017***	0.024***	0.023***	0.033***	0.052***	0.072***
	(4.996)	(5.624)	(3.857)	(4.615)	(3.591)	(4.197)
Industry-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	86,363	123,885	85,948	123,246	86,363	123,885
Pseudo R-squared	0.535***	0.531***	0.493***	0.489***	0.428***	0.425
χ^2-statistic	2520.29***	2380.51***	2242.71***	2474.63***	1763.18***	1767.77

Notes: This table examines the association between future firm ES and G associated incidents, and measures of shareholder distraction, which is an inverse measure of monitoring intensity (we follow Chen et al., 2020). Shareholder distraction is the weighted average exposure of firm shareholders to the shock industries, which are exogenous shocks to unrelated Fama-French 12 industries held by firm i's institutional shareholders, to identify the quarters during which shareholders are likely to be distracted and hence shift attention away from focal firm i. We aggregate these measures separately for concentrated and for diversified funds. We control for the total changes in mutual fund ownership by diversified and concentrated portfolios, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, scaled by firm j's shares outstanding, following Coval and Stafford (2007); Huang et al. (2023). ES incidents denote the cumulative number of environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. G incidents denote the cumulative number of governance RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ES Incidents$^{severe}_{t+4}$ denote the cumulative number of severe environmental and social RepRisk incidents of firm j of future quarters $t+1$ to $t+4$. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, quarterly stock return, and 252-day stock return volatility. All continuous control variables are winsorized at the 1 and 99 percentiles. Poisson regressions include Fama-French 12 industry × year-quarter fixed effects. Coefficients are standardized, standard errors are clustered at the firm level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.3.2 HHI concentration: Shareholder distraction and incidents (LPM)

Table IA.23: Linear probability models of multiple future firm ES and G incidents on shareholder distraction of concentrated vs. diversified shareholders

	Concentration by above/ below median fund portfolio Herfindahl Index					
Dependent Variable	>1 ES Incidents$_{t+4}$		>1 G Incidents$_{t+4}$		>1 ES Incidents$^{severe}_{t+4}$	
	(1)	(2)	(3)	(4)	(5)	(6)
Fund distraction measure	ESG	Traditional	ESG	Traditional	ESG	Traditional
Distraction Concentrated^{ESG}	1.02193***		1.22839***		0.66254***	
	(6.5099)		(8.6460)		(5.9277)	
Distraction Diversified^{ESG}	-0.04865		-0.66922***		-0.42536***	
	(-0.2513)		(-3.9442)		(-3.1512)	
ΔTotal Ownership Concentrated^{ESG}	-0.72480*		-0.25144		-0.50229*	
	(-1.8852)		(-0.7057)		(-1.9210)	
ΔTotal Ownership Diversified^{ESG}	-0.52220		-0.66843**		-0.21895	
	(-1.4764)		(-2.2862)		(-0.9780)	
Distraction Concentrated^{Traditional}		0.55456***		0.60537***		0.35343***
		(8.3518)		(9.6959)		(7.3576)
Distraction Diversified^{Traditional}		-0.10991**		-0.20415***		-0.03211
		(-2.1764)		(-5.1572)		(-1.0432)
ΔTotal Ownership Concentrated^{Traditional}		0.03025		-0.32641		-0.08655
		(0.0912)		(-1.0077)		(-0.3165)
ΔTotal Ownership Diversified^{Traditional}		-0.03815		-0.14617		-0.01195
		(-0.2914)		(-1.3836)		(-0.1330)
ln Market Capitalization$_t$	0.09041***	0.07398***	0.07218***	0.05631***	0.04365***	0.03367***
	(25.7448)	(27.6252)	(20.4015)	(21.6832)	(14.2794)	(15.3786)
Book-Market$_t$	0.04771***	0.03503***	0.04189***	0.03036***	0.02471***	0.01707***
	(10.2333)	(11.4414)	(9.8786)	(11.3370)	(7.5074)	(8.7653)
Leverage$_t$	0.02827	0.02042	0.03115**	0.01975*	0.00597	0.00419
	(1.5522)	(1.5758)	(2.1140)	(1.9350)	(0.5249)	(0.5271)
ROA$_t$	-0.67940***	-0.53545***	-0.55146***	-0.42916***	-0.32156***	-0.26389***
	(-8.9951)	(-11.6957)	(-8.5180)	(-10.8949)	(-6.4431)	(-8.7002)
Sales Growth$_t$	-0.01667***	-0.01029***	-0.01330***	-0.00948***	-0.01130***	-0.00667***
	(-5.0007)	(-4.8528)	(-4.6311)	(-5.3350)	(-6.6568)	(-6.3416)
Quarterly Stock Return$_t$	-0.00051***	-0.00043***	-0.00043***	-0.00034***	-0.00023***	-0.00017***
	(-8.3271)	(-10.3193)	(-8.7726)	(-10.3568)	(-5.8384)	(-6.5487)
Return Volatility$_t$	1.03104***	1.30207***	0.31159	0.75182***	0.33485*	0.53971***
	(3.5314)	(6.7295)	(1.3260)	(4.9065)	(1.7413)	(4.2336)
Constant	-0.69578***	-0.54666***	-0.55537***	-0.41771***	-0.33753***	-0.25780***
	(-23.2651)	(-24.2252)	(-19.1250)	(-19.6850)	(-13.5701)	(-14.3526)
Industry-Year-Quarter FE	YES	YES	YES	YES	YES	YES
Observations	86,363	123,885	85,948	123,246	86,363	123,885
R-squared	0.192	0.173	0.154	0.137	0.108	0.093
Within R-squared	0.161	0.149	0.141	0.129	0.088	0.079
F-statistic	71.56***	73.69***	46.34***	46.87***	25.10***	24.94***

Notes: This table examines the association between future instances of more than a single firm ES and G associated incident, and measures of shareholder distraction, which is an inverse measure of monitoring intensity (we follow Chen et al., 2020). Shareholder distraction is the weighted average exposure of firm shareholders to the shock industries, which are exogenous shocks to unrelated Fama-French 12 industries held by firm i's institutional shareholders, to identify the quarters during which shareholders are likely to be distracted and hence shift attention away from focal firm i. We aggregate these measures separately for concentrated and for diversified funds. We control for the total changes in mutual fund ownership by diversified and concentrated portfolios, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, which is the sum of changes in expected ownership and discretionary ownership by our sample of mutual funds, scaled by firm j's shares outstanding, following Coval and Stafford (2007); Huang et al. (2023). >1 ES Incidents$_{t+4}$ is given value 1 if the number of environmental and social RepRisk incidents of firm j in quarter $t+4$ is higher than 1. >1 G Incidents$_{t+4}$ is given value 1 if the number of governance RepRisk incidents of firm j in quarter $t+4$ is higher than 1. >1 ES Incidents$^{severe}_{t+4}$ is given value 1 if the number of severe environmental and social RepRisk incidents of firm j in quarter $t+4$ is higher than 1. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, quarterly stock return, and 252-day stock return volatility. All continuous control variables are winsorized at the 1 and 99 percentiles. OLS regressions include Fama-French 12 industry $\times$ year-quarter fixed effects. Standard errors are clustered at the firm level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.4 Proposal withdrawal: additional results

B.4.1 HHI concentration: Withdrawal and discretionary ownership change

Table IA.24: Probability of firm proposal being withdrawn on changes in discretionary ownership by concentrated and diversified funds

	Concentration by above/ below median fund portfolio Herfindahl Index					
Dependent variable	*D(Withdrawn Proposal)*					
Sponsor type	All			Institutional investors		
	(1)	(2)	(3)	(4)	(5)	(6)
Proposal type	All	GOV	SRI	All	GOV	SRI
Discretionary Ownership Concentrated^{ESG}	0.72193***	0.63461***	0.81603***	1.19615***	0.99387*	0.88551***
	(4.0098)	(3.0836)	(3.5092)	(6.0662)	(1.8740)	(3.4981)
Discretionary Ownership Concentrated^{Traditional}	0.05499	-0.09570	0.11526	0.06470	0.59626	-0.07583
	(0.5030)	(-0.9081)	(0.8878)	(0.3145)	(1.1939)	(-0.3577)
Discretionary Ownership Diversified^{ESG}	-0.12654	0.00230	-0.34897	-0.52180	-0.97096	-0.38254
	(-0.4720)	(0.0084)	(-1.0389)	(-1.4819)	(-1.4048)	(-0.8421)
Discretionary Ownership Diversified^{Traditional}	0.00853	-0.00285	0.16204	0.02117	-0.47234**	0.20527
	(0.0971)	(-0.0278)	(1.4038)	(0.1867)	(-2.3980)	(1.4935)
Proposal type = "SRI"	0.25514***			0.25764***		
	(14.3830)			(8.2368)		
Primary sponsor = "SRI fund"				-0.01866	-0.22855***	0.01681
				(-0.5472)	(-2.8384)	(0.4423)
Primary sponsor = "Fund"				-0.15863***	-0.14578***	-0.13548***
				(-5.0811)	(-3.0485)	(-3.1028)
# Proposals Previous Meeting	-0.03056***	-0.00360	-0.04066***	-0.04083***	-0.00935	-0.04399***
	(-6.9422)	(-0.8753)	(-6.6742)	(-6.3195)	(-0.9248)	(-5.6305)
ln Market Capitalization$_{t-1}$	-0.00227	0.00705	-0.02409**	0.01359	0.05415***	-0.01682
	(-0.3746)	(1.2594)	(-2.3790)	(1.2901)	(4.0784)	(-1.1219)
Book-Market$_{t-1}$	0.00861	0.00192	0.02070	0.01435	0.02220	0.01371
	(0.3847)	(0.1134)	(0.5135)	(0.3278)	(0.3821)	(0.2318)
Leverage$_{t-1}$	-0.02193	0.02470	-0.09885	0.02217	0.22404*	-0.08935
	(-0.4480)	(0.5271)	(-1.2216)	(0.2236)	(1.8567)	(-0.6949)
Sales Growth$_{t-1}$	-0.04897	-0.00673	-0.08664*	-0.13756**	-0.22143***	-0.11523
	(-1.6135)	(-0.1707)	(-1.9303)	(-2.2342)	(-3.2882)	(-1.4361)
ROA$_{t-1}$	-0.43081	-1.00214**	-0.17913	-0.24730	-1.62436*	-0.33575
	(-1.1567)	(-2.3717)	(-0.2889)	(-0.3810)	(-1.9260)	(-0.3596)
Capex$_{t-1}$	-0.59544**	-0.21410	-0.88146**	-0.76515**	-0.35821	-1.01184*
	(-2.4706)	(-1.0582)	(-2.3297)	(-1.9655)	(-0.9426)	(-1.8569)
Constant	0.29349***	0.05948	0.88613***	0.26717**	-0.23372*	0.86993***
	(4.4138)	(1.0421)	(7.9204)	(2.3603)	(-1.6708)	(5.3972)
Proposal year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Sponsor FE	YES	YES	YES	NO	NO	NO
Observations	4,938	2,259	2,679	1,628	438	1,190
R-squared	0.218	0.106	0.133	0.178	0.285	0.146
Within R-squared	0.088	0.007	0.081	0.131	0.147	0.092
F-statistic	28.76***	2.47***	18.46***	17.57***	10.33***	12.73***

Notes: This table examines the association between the probability of a firm i's shareholder proposal p getting withdrawn (in a sample of proposals that go up for a vote or are withdrawn before the respective shareholder meeting), and the respective firm i's changes in discretionary mutual fund ownership. Discretionary ownership is estimated as the difference of total changes in mutual fund ownership and the firm-level dollar flow-induced changes in stock ownership by mutual fund i, keeping previous quarters' holding weights of stock j in mutual fund i constant, scaled by the firm j's shares outstanding, following Coval and Stafford (2007); Huang et al. (2023). We aggregate the quarterly discretionary changes in ownership for three consecutive quarters before firm i's last annual meeting, allowing for date drift of the proposal withdrawal across years. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the number of proposals from the previous year's shareholder meeting, either withdrawn or up for a vote. In determining whether the proposal's resolution should be categorized as "SRI" or "GOV" we follow Dikolli et al. (2022). For the full sample of withdrawn or voted-on proposals, in columns (1) and (4), we include the indicator Proposal type = "SRI" which takes on the value 1 when the proposal is categorized as an SRI-related proposal. The reference category is a governance-related proposal.We control for 1-quarter lagged controls, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, stock turnover rate, and capital expenditures (capex). All lagged continuous control variables are winsorized at the 1 and 99 percentiles. OLS regressions include proposal year and Fama-French 12 industry fixed effects. Columns (1)-(3) include primary sponsor fixed effects, columns (4)-(6) reduce the sample of proposals to those whose primary sponsor is an institutional investor (i.e., is denoted by ISS to be sponsored by "Fund", "SRI Fund", or "Public Pension"). The reference category in columns (4)-(6) is "Public Pension". Standard errors are clustered at the firm and proposal level, and t-statistics are reported in parentheses. * p¡0.10, ** p¡0.05, *** p¡0.01.

B.4.2 Withdrawal and flow-induced ownership change: institutional sponsors (HHI)

Table IA.25: Probability of firm proposal sponsored by an institutional investor being withdrawn on flow-induced changes in ownership by concentrated and diversified funds

	Concentration by above/ below median fund portfolio Herfindahl Index					
Dependent variable	*D(Withdrawn Proposal)*					
Proposal type	All		GOV		SRI	
	(1)	(2)	(3)	(4)	(5)	(6)
Expected Ownership Concentrated^{ESG}	0.15164		2.44372		0.16739	
	(0.2624)		(1.2543)		(0.1696)	
Expected Ownership Concentrated^{Traditional}	-0.16711		-0.58383		-0.32045	
	(-0.7540)		(-1.6071)		(-1.1068)	
Expected Ownership Diversified^{ESG}		0.53513**		1.66216		0.85651***
		(2.5760)		(1.3912)		(3.6608)
Expected Ownership Diversified^{Traditional}		-0.05713		-0.58054*		-0.00072
		(-0.2181)		(-1.7206)		(-0.0023)
Proposal type = "SRI"	0.25268***	0.25324***				
	(7.8775)	(7.9088)				
Primary sponsor = "SRI fund"	-0.02059	-0.02139	-0.24874***	-0.25100***	0.00928	0.00749
	(-0.5980)	(-0.6175)	(-2.8461)	(-2.8688)	(0.2426)	(0.1934)
Primary sponsor = "Fund"	-0.14677***	-0.14586***	-0.14156***	-0.14223***	-0.11903***	-0.11627***
	(-4.5633)	(-4.5541)	(-2.6166)	(-2.6282)	(-2.6999)	(-2.6409)
# Proposals Previous Meeting	-0.03949***	-0.03915***	-0.00941	-0.00940	-0.04265***	-0.04073***
	(-5.5974)	(-5.6366)	(-0.8220)	(-0.8327)	(-5.2756)	(-5.2673)
ln Market Capitalization$_{t-1}$	0.00213	0.00284	0.05357***	0.05321***	-0.03488**	-0.03341**
	(0.1913)	(0.2529)	(3.7482)	(3.7216)	(-2.2765)	(-2.1499)
Book-Market$_{t-1}$	-0.01053	-0.01051	0.02306	0.02069	-0.01661	-0.01717
	(-0.2173)	(-0.2173)	(0.3566)	(0.3206)	(-0.2498)	(-0.2586)
Leverage$_{t-1}$	-0.00791	-0.01243	0.28472**	0.28073**	-0.13607	-0.15093
	(-0.0759)	(-0.1195)	(2.3362)	(2.3031)	(-1.0101)	(-1.1207)
Sales Growth$_{t-1}$	-0.11819**	-0.11619**	-0.18020**	-0.17843**	-0.10672	-0.09932
	(-2.0263)	(-1.9912)	(-2.3582)	(-2.3484)	(-1.4529)	(-1.3448)
ROA$_{t-1}$	-0.35834	-0.39208	-1.95826*	-1.95114*	-0.16138	-0.25231
	(-0.5460)	(-0.5984)	(-1.9168)	(-1.9139)	(-0.1749)	(-0.2699)
Capex$_{t-1}$	-1.11580***	-1.09926***	-0.51230	-0.52745	-1.37985**	-1.29962**
	(-2.7277)	(-2.7183)	(-1.1921)	(-1.2216)	(-2.3807)	(-2.2496)
Constant	0.41591***	0.40953***	-0.24821	-0.24279	1.09196***	1.07817***
	(3.3541)	(3.2964)	(-1.5906)	(-1.5563)	(6.4058)	(6.2903)
Proposal year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Sponsor FE	NO	NO	NO	NO	NO	NO
Observations	1,627	1,627	431	431	1,185	1,185
R-squared	0.205	0.205	0.317	0.318	0.193	0.193
Within R-squared	0.122	0.122	0.131	0.133	0.094	0.094
F-statistic	15.92***	16.49***	6.03***	6.09***	13.80***	12.72***

Notes: This table examines the association between the probability of a firm i's shareholder proposal p getting withdrawn (in a sample of proposals that go up for a vote or are withdrawn before the respective shareholder meeting), and the respective firm's flow-induced changes in mutual fund ownership in firm i. We reduce the sample of proposals to those whose primary sponsor is an institutional investor (i.e., is denoted by ISS to be sponsored by "Fund", "SRI Fund", or "Public Pension"). Expected Ownership is estimated as the firm-level dollar flow-induced changes in stock ownership by mutual fund i, keeping previous quarters' holding weights of stock j in mutual fund i constant, scaled by the firm j's shares outstanding, following Coval and Stafford (2007); Wardlaw (2020). We aggregate the quarterly expected changes in ownership for three consecutive quarters before firm i's last annual meeting, allowing for date drift of the proposal withdrawal across years. ESG funds are those designated as ESG funds by Morningstar's "General ESG Fund" indicator. We control for the number of proposals from the previous year's shareholder meeting, either withdrawn or up for a vote. In determining whether the proposal's resolution should be categorized as "SRI" or "GOV" we follow Dikolli et al. (2022). For the full sample of withdrawn or voted-on proposals, in columns (a) and (b), we include the indicator Proposal type = "SRI" which takes on the value 1 when the proposal is categorized as an SRI-related proposal. The reference category is a governance-related proposal. We include an indicator for the primary sponsor of proposal p, the reference category for *Primary sponsor* is "Public Pension". We control for a 1-quarter lagged stock-level industry-adjusted MSCI ESG score, the natural logarithm of firm market capitalization, book-to-market, leverage ratio, return on assets, 12-month sales growth, and capital expenditures over total assets. All lagged continuous control variables are winsorized at the 1 and 99 percentiles. OLS regressions include proposal year and Fama-French 12 industry fixed effects. Standard errors are clustered at the firm and proposal levels, and t-statistics are reported in parentheses. * pj0.10, ** pj0.05, *** pj0.01.