

Are All ESG Funds Created Equal? Only Some Funds Are Committed

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Abstract

Although flows into ESG funds have risen dramatically, it remains unclear whether these funds are truly committed to sustainable investments and how much their investments matter. We shed light on this debate by examining the incentives of fund managers. We find that conditional on similarly large ESG investments, ESG funds vary in their incentives to engage with portfolio firms. ESG funds with higher incentives to engage – committed ESG funds – hold their ESG investments longer, pay more attention to firms' ESG risk exposure and implement less negative screening. Strikingly, only investments by committed ESG funds contribute to real ESG-improvements, and these funds have outperformed other ESG funds on their ESG holdings. Our paper highlights the importance of incentives when assessing the real impacts of sustainable investments and calls for greater investor awareness of a hidden form of greenwashing.

1. Introduction

Commensurate with investor interest in sustainability, there have been increasing flows into ESG mutual funds (Hartzmark and Sussman, 2019; Ceccarelli, Ramelli and Wagner, 2021; Kim and Yoon, 2021).¹ This trend has the potential to contribute to improved ESG policies in the underlying firms. However, several recent studies cast doubt on whether ESG funds actually exert material impacts on firms' cost of capital or improve corporate conduct (see, e.g., Berk and van Binsbergen, 2021 and Heath et al., 2021). Tariq Fancy, the former head of BlackRock's sustainable investing, bluntly commented that "The major problem that I have is that even if they're [ESG funds] marketed correctly, they actually have no demonstrable impact."²

Mutual funds can potentially pressure firms to make changes through two channels: voice and exit. Berk and van Binsbergen (2021) show that the exit channel is ineffective in decreasing firms' cost of capital and suggest that a more effective strategy to achieve sustainable investment is engagement. Following this evidence, we conjecture that understanding ESG funds' incentives to engage is of first-order importance.

Variation in funds' incentives to engage stems from several factors. First, the structure of management fees generates monetary incentives to engage. Both Dimson, Karakas and Li (2015, 2021) and Barko, Cremers and Renneboog (2021) find that successful ESG engagements by a large institutional investor are followed by improvements in financial performance. Second, for ESG funds, there are purpose-related incentives to engage, which arise from investors' desire to direct their investment dollars in ways that contribute positively toward sustainability. The

¹ By the end of 2019, there exist 303 open-end funds and ETFs that market themselves as contributing to better societal outcomes as well as enhancing investment performance. See Morningstar Sustainable Funds U.S. Landscape Report 2019 and 2020.

² See more details at <https://www.greenbiz.com/article/blackrocks-former-head-sustainable-investing-says-esg-and-sustainability-investing-are>

objective of this paper is to zoom in on ESG funds and explore the heterogeneity in their ESG investment strategies and outcomes, as a function of their incentives to engage with portfolio firms.

Amongst a set of ESG mutual funds, which by definition have similarly large investments in high ESG firms, we categorize funds according to the Lewellen and Lewellen (2022) “Incentive to Engage” measure. The measure represents the sum of a direct component plus an indirect component, averaged across high ESG firms in a fund’s portfolio. The direct component is based on the dollar investment in the firm; it captures the extent to which greater engagement increases the value of the portfolio firm, thereby contributing to higher fund value and higher management fees. The indirect component is based on the fund’s holdings in the firm relative to the holdings of peer funds; it captures the ways in which the mutual fund’s relative performance (compared to peer funds within the same investment style) affects subsequent fund flows.³ After summing the direct and indirect components, we categorize ESG mutual funds as *committed funds* if their incentive measures are above-median, and as nominal funds otherwise.⁴

Our overarching hypothesis is that committed ESG funds will implement more sophisticated and more long-term oriented ESG investment strategies, and they will put more pressure on portfolio firms to improve ESG policies. As such, they will have a greater impact. This hypothesis is based on the premise that ESG fund managers perceive improved ESG policies (of portfolio firms) to positively influence firm financial performance and/or flows into the fund. Several pieces of evidence provide support for this premise. First, in a survey of

³ The mission-orientation of ESG funds potentially influences their incentives to engage in ways that are different from other mutual funds. However, this framework has the advantage of being sufficiently general to capture multiple dynamics. Importantly, it captures the two factors that contribute to management fees, which is arguably a key focus for any mutual fund manager.

⁴ This categorization is conditional on the asset-weighted MSCI ESG score of each fund. Thus, by definition, committed and nominal funds have very similar asset-weighted MSCI ESG score.

institutional investors, Krueger, Sautner and Starks (2020) find that the prospects of higher returns contribute to the decision to incorporate climate risks into investment decisions. Second, ESG funds frequently highlight the relevance of such factors in their prospectuses. For example, Putnam Sustainable Leaders fund states “We believe that companies that exhibit leadership in sustainable business practices also often exhibit more profitable, durable financial returns with lower risk profiles.” Finally, ESG funds that successfully pressure portfolio firms to improve can potentially attract greater fund flows, particularly from ESG conscious investors. Institutional investors in ESG funds may be especially likely to consider such factors, in part because they would be more informed of funds’ engagement activities.

Alternatively, it is possible that fund managers do not believe that ESG-related factors have a direct link with financial performance and that investor flows do not respond to ESG improvements. Statements in prospectuses may simply represent a form of greenwashing. In this case, even committed funds may have little incentive to engage on ESG issues. We conduct four sets of empirical tests to examine the effects of ESG funds’ incentives to engage on ESG issues.

First, if committed funds devote more resources toward engagement, in particular to engagement with high ESG firms, then they should implement a more long-term investment strategy as they work with management to achieve change. Rather than simply employing negative screening, for example by selling after negative ESG-incidents, funds with higher incentives to engage will be more patient toward management. Second, we posit that committed funds pay more attention to portfolio firms’ ESG risks, as they strive to engage with firms on these issues. Third, committed funds’ greater incentives to engage should contribute to more ESG-related improvements among portfolio firms. Finally, we examine how the focus on ESG-related matters relates to fund performance.

Our first set of findings shows that, consistent with predictions, funds' incentives to engage with ESG firms are positively related to their holding periods. Committed ESG funds are significantly less likely to sell high ESG stocks (compared to low ESG stocks) following poor firm financial performance. We also find that these funds tend to hold their high ESG stocks significantly longer than their other stocks. In stark contrast, nominal ESG funds tend to trade ESG stocks and other stocks similarly. These findings are novel as they cannot be explained by any endogenous matching between the horizon of investors and the horizons of their portfolio firms (Starks, Venkat and Zhu, 2021).

To more clearly illustrate how fund investments relate to ESG factors, we examine fund activities around ESG risk incidents. We begin by examining whether committed funds pay more attention than nominal funds to portfolio firms' ESG risks. Our measure of attention equals the frequency with which funds view firm filings on SEC's EDGAR platform, around negative ESG news announcements. Consistent with predictions, we find that committed funds have higher downloads of firm EDGAR filings in the days around such events, compared to nominal funds. Moreover, the difference is concentrated among severe negative ES events, defined as events with large negative market reactions.

Having demonstrated committed funds' greater information production concerning portfolio firms' ESG risks, we next examine the ways in which committed funds act on their information. We find that following severe ESG incidents, committed funds are significantly less likely than nominal funds to exercise negative screening by selling the firms. While prior studies show that institutional investors, particularly sustainable funds, tend to sell after negative ESG news, we find that this tendency is restricted to nominal funds (Chen et al., 2021; Gantchev, Mariassunta and Li, 2022). In fact, nominal funds tend to sell following all negative news events

associated with large negative market reactions, ESG-related or not. The contrast between committed versus nominal ESG funds' investment strategies is again consistent with committed funds' advantages in understanding ESG risks, due to their significant investments in high ESG firms and their greater incentives to both research the firms and to engage with firm management.

The difference in trading behavior between committed funds and nominal funds has significant effects on the composition of firms' owners. Following severe negative ESG news, the portion of a firm's shares owned by committed ESG funds increases, while that of nominal ESG funds decreases. If committed funds are more likely to engage with the firm on ESG-related matters, this shift in ownership should contribute toward real changes in the firm. Indeed, we find that following severe ESG incidents, firms intensively bought by committed funds experience significantly larger reductions in their ESG risk exposure. Firms intensively bought by committed funds following severe ESG incidents subsequently experience a 36% reduction in their risk index, relative to the base case in which funds neither intensively buy nor intensively sell.

Additional tests provide added evidence that the positive relation between committed funds' net purchases and subsequent decreases in firms' ESG profiles represents the effects of funds' engagement with firms as opposed to their ability to select good ESG firms. Following Hartzmark and Sussman (2019), we use the initiation of Morningstar Sustainability Ratings in early 2016 as a shock to flows into high ESG funds. This shock, on average, caused funds to increase the dollars invested within existing portfolio firms (in addition to any investments in new firms), thereby increasing funds' incentives to engage with these firms. Under the premise that the Morningstar shock is exogenous to funds' pre-shock investment choices, this channel enables us to shut down the selection effect and focus on the engagement channel. Using this

setting, we examine two dimensions along which funds' engagement potentially influences firms' ESG-related risks: the RepRisk Risk index, which represents a broad measure of a firm's ESG profile, and firms' on-site toxic emissions, as obtained from the U.S. Environmental Protection Agency (EPA). Results are consistent across both measures: firms overweighted by committed funds prior to the shock experience a significant decrease in ESG risk and a significant decrease in their carbon footprint after the shock. We find that these effects are concentrated within high ESG firms, suggesting that committed funds focus their engagement on firms that have an established reputation for being responsible and would thus wish to avoid an ESG ratings downgrade.

Can funds do well by doing good? In the last part of the paper, we investigate the relation between ESG funds' incentives to engage and fund performance. We find that committed funds have outperformed both the market and their nominal counterparts on their ESG investments. This is consistent with committed funds' engagement contributing not only to better ESG-related outcomes but also to better firm performance.

Our paper contributes to several streams of literature. First, our paper contributes to the literature on mutual funds' engagement on ESG-related issues. While Broccardo, Hart and Zingales (2021) conclude that voice is an effective mechanism to achieve socially desirable outcomes when the majority of investors are socially responsible, our findings indicate that this is only the case if the socially responsible investors have sufficiently high incentives to engage. He, Kahraman and Lowry (2021) and Li, Naaraayanan, and Sachdeva (2021) analyze mutual funds' voting on ES shareholder proposals and show that mutual funds are informed regarding firms' ESG risks, but voting in shareholder proposals rarely succeeds in pressuring firms to change. Relative to their findings, our paper highlights the influence of funds' incentives to

engage and adopts an intuitive approach to examining such incentives for a large sample of ESG funds, where engagement includes both voting and behind-the-scenes conversations. In this sense, our findings relate to Hoepner et al. (2022) and Dimson, Karakas and Li (2015), which both analyze ESG-related engagements but focus solely on one large institutional investor.

Second, our paper relates to the growing literature on greenwashing. The identification of which entities are more socially responsible is often not clear. Cohen, Gurun and Nguyen (2021) find that firms with low ESG scores, for example oil and gas firms, produce more green innovation than firms typically identified as ‘green’. Kim and Yoon (2021) and Gibson et al. (2021) find that mutual funds that sign the United Nations Principles for Responsible Investment (PRI) attract large fund inflows, but do not significantly change their ESG-related investments. Our evidence suggests a new form of greenwashing: conditional on the aggregate dollars that funds invest in high ESG firms, the distribution of these dollars and the associated effects on funds’ incentives to engage play a critical role. Our findings therefore call for greater attention to this hidden form of greenwashing.

Lastly, our study complements several recent studies suggesting that investor divestiture might not be the most effective way to influence corporate ESG conduct (see, e.g., Cohen, Gurun and Nguyen, 2021; Berk and van Binsbergen, 2021). There is no clear evidence that firms receiving more capital from ESG funds have a lower cost of capital or better ESG performance (e.g., Heath et al., 2021). Our finding that committed funds influence firm behavior without relying on negative screening suggests that the divestment-oriented strategies of many institutional campaigns, including those led by the PRI, may be misguided.

2. Data and Methodology

2.1 Description of data sources

Our firm-level and fund-level data are compiled from several sources. First, we use MSCI ESG Ratings data to assess firm-level ESG performance. MSCI is the world's largest provider of ESG ratings and provides the most comprehensive coverage (Eccles and Strohle, 2018). Moreover, Berg et al., (2021) conclude that its ESG ratings are less noisy than those of other vendors. MSCI assigns percentage risks to each ESG factor for each company, combines these into a single company-level score, and then normalizes this score relative to industry peers to achieve the overall company ESG rating.⁵ ESG scores range from zero to ten and are updated at least once a year. Each quarter stocks are placed into deciles by their ESG score, and stocks within the top three deciles are classified as high ESG stocks.

We use the Center for Research in Security Prices (CRSP) monthly stock files and Compustat for data on stock returns and financial characteristics. These data are merged with MSCI ESG Ratings data using CUSIP, ticker, and company name. As noted by Pastor et al. (2021), MSCI did not start covering small U.S. stocks until late 2012. Thus, our sample period is from January 2013 to December 2020.

For fund-level data, we rely primarily on the CRSP Survivor-Bias-Free Mutual Fund Database to extract monthly net-of-fees fund returns and fund characteristics and Morningstar Direct for information on fund styles.⁶ Our analyses of funds' sustainable investments focus on actively managed U.S. domestic equity mutual funds. To examine funds' portfolio composition, we extract quarterly equity holdings of mutual funds from the Thomson/Refinitive s12 database. We merge the CRSP Mutual Fund data and fund holding data using the MFLINKS tables available via WRDS (Wermers, 2000). For analyses involving fund prospectuses, we download

⁵ See, <https://www.msci.com/documents/1296102/19165268/ESG+Ratings+Transcript.pdf>

⁶ We match CRSP with Morningstar fund data by fund ticker and cusip.

all Form 497K filings from SEC EDGAR. For analyses involving an exogenous shock to ESG funds' investments, we extract the Morningstar Sustainability Ratings of our sample funds.

We employ the EDGAR server log data and IP demographic data to examine asset managers' views of their portfolio firms' filings around ESG news events. The EDGAR server log data identify the individual (partially masked) IP addresses that view each firm filing each day up to June 2017. Following Wang (2019), we identify an asset management firm's views by matching the IP addresses from EDGAR to the institution that holds a block of corresponding IP addresses.⁷

Lastly, to examine how portfolio firms' ESG risks affect mutual fund investment decisions, we use several proxies. First, to proxy for real environmental activities we use each firm's annual on-site waste release from the Toxics Release Inventory (TRI) dataset, as provided by EPA. These data have been used in several studies to measure firms' environmental risk (see, e.g., Naaraayanan, Sachdeva and Sharma, 2021; Lyu, Shan and Tang, 2021). Second, we employ RepRisk daily news counts to capture negative ESG incidents. We also use the RepRisk Risk Index to measure a firm's overall ESG risk exposure (see, e.g., He, Kahraman and Lowry; 2021 and Gantchev, Mariassunta and Li, 2022), Finally, we use the Ravenpack News Analytics dataset to quantify individual firms' non-ESG related news coverage.⁸ This enables us to contrast funds' trading reactions to ESG risk events with reactions to other news.

2.2. *Committed vs. nominal ESG funds*

We classify all actively managed equity funds into ESG versus non-ESG funds according to the asset weighted MSCI ESG scores of their holdings. This approach is similar to the fund-

⁷ Detailed descriptions can be found in Wang (2019).

⁸ To avoid double counting, we only consider Ravenpack news that is not released on the same day as RepRisk incidents concerning the same firm.

level ESG rating methodologies employed by rating agencies such as Morningstar and to academic work such as Gibson et al. (2021) and Gantchev et al. (2022). Similar to the Morningstar Sustainability Rating, we calculate a fund’s ESG rating in a quarter as the weighted average of the trailing four quarters’ ESG scores of the fund, with the more-recent quarters weighted more heavily.⁹ Each quarter, funds with ESG ratings ranked within the top tercile are classified as ESG funds while the rest are classified as non-ESG funds.¹⁰

Within this set of ESG funds, we compute each individual fund’s “Incentive to Engage” on their high ESG holdings. Following Lewellen and Lewellen (2022), for each stock in a fund’s portfolio, the incentive to engage can be decomposed into two parts: the direct component, which is the stock’s weight, and the flow component, which is the product of flow-to-performance sensitivity and the deviation of the stock’s weight in the fund from the fund’s portfolio benchmark. Intuitively, the direct component captures the direct impact of a holding’s performance on a fund’s AUM and thus on management fees, whereas the flow component captures the indirect impact from performance-related fund flows. A fund’s incentive to engage with high ESG firms is the weighted sum of both direct and flow components across its high ESG stocks. (As described in section 2.1, a stock is classified as a high ESG stock if its score is ranked in the top three deciles according to its MSCI ESG score). That is,

$$Incentive\ to\ Engage = \sum_{i \in E} w_i [w_i + \beta(w_i - v_i)],$$

⁹ To receive a fund-level ESG score, at least 67% of a portfolio’s asset under management must have an MSCI ESG rating. We adopt the weighting scheme of the Morningstar Sustainability Rating when computing the weighted average of the trailing four quarters’ ESG scores of a fund. See more details about the Morningstar Sustainability Rating methodology from https://www.morningstar.com/content/dam/marketing/shared/research/methodology/744156_Morningstar_Sustainability_Rating_for_Funds_Methodology.pdf

¹⁰ Because MSCI’s ESG ratings represent industry-adjusted metrics, high ESG funds do not necessarily exclude firms in brown industries.

where E is the set of high ESG stocks in the fund's portfolio, w_i is the weight of each high ESG stock i in the fund's portfolio, v_i is the weight of stock i in the benchmark portfolio, and β is the flow-to-performance sensitivity of the fund. Flow-to-performance sensitivity is estimated following Lewellen and Lewellen (2022) by regressing fund flows in quarters $t+1$ through $t+12$ on benchmark-adjusted returns in quarter t and summing the slope coefficients. We use the aggregated holdings of all index funds within the same style category as the fund's benchmark portfolio.¹¹

Our classification of firms as committed or nominal is based on the four-quarter moving average of the fund-level incentive to engage measure.¹² We rank all ESG funds into terciles by their ESG scores, and we classify each ESG fund as a committed (nominal) if its incentive to engage is above (below) the median within the tercile. By ranking funds within their ESG score terciles, we ensure that a fund's incentive to engage is not correlated with the weight of high ESG stocks within its portfolio.¹³

We find that an ESG fund's commitment status is highly persistent, likely reflecting a systematic, ESG integrated investment strategy. The probability of an ESG fund remaining in the same commitment group, i.e., either committed or nominal, in the subsequent year is 93%.

2.3. Summary Statistics

¹¹ We employ a similar procedure to calculate funds' incentives to engage on all other stocks, i.e., stocks that are not high ESG. For tests that use both measures, we rescale each, i.e., incentive to engage on high ESG stocks and incentive to engage on other stocks, to make them comparable. Specifically, we divide each measure by the percent of the portfolio held in analogous set of stocks. To provide an example, for a fund that holds 40% of their portfolio in ESG stocks and 60% in other stocks, we would divide the incentive to engage on ESG by 0.40 and the incentive to engage on non-ESG stocks by 0.60.

¹² The use of a four-quarter moving average is analogous to the approach used to calculate the fund-level ESG score.

¹³ The correlation between a fund's incentive measure and the weight of high ESG stocks in the fund is only 0.07.

Table 1 tabulates the summary incentive to engage measure and its two components (the direct component and the flow component), for both committed and nominal ESG funds. Several points are worth highlighting. First, committed funds have significantly higher incentives than nominal funds to engage on high ESG stocks; this includes both higher direct incentives and higher flow incentives. Second, committed funds have significantly stronger incentives to engage on high ESG stocks than on other stocks. We do not observe a similar difference among nominal funds. In sum, even though the two groups of ESG funds, by construction, invest a similar portion of their assets in firms with high ESG performance, committed funds have greater incentives to monitor and engage with their high ESG holdings.

Table 2 shows that both committed and nominal ESG funds allocate 39% of their total net assets (TNA) to high ESG stocks, as compared to 28% for non-ESG funds. Committed funds and nominal funds also have similar fund turnover ratio, performance, flows, family size and proportion of load funds, though committed funds tend to be somewhat younger and smaller.

We find that both committed and nominal ESG funds outperform non-ESG funds during our sample period. This is consistent with the price run-ups experienced by high ESG stocks during the most recent decade, which Pastor, Stambaugh, and Taylor (2021) conclude stemmed from unexpectedly strong preferences by ESG investors. In addition, ESG funds tend to have lower turnover than non-ESG funds, likely driven by their greater asset allocation to high ESG stocks that are typically associated with longer payout periods (Starks, Venkat and Zhu, 2021). On the other hand, there is no evidence that committed funds, which exhibit the lowest turnover among the three groups of funds, are more passive investors. In fact, committed funds appear to be more active funds as indicated by their higher Industry Concentration Index and their higher

Active Share, compared to either nominal funds or non-ESG funds (Kacperczyk, Sialm and Zheng, 2005; Cremers and Petajisto, 2009).

2.4 Validation of ESG fund classification

Data on institutional investors' engagement activities have been mostly limited to information on a single or a very small set of asset managers (e.g., Dimson, Karakaş, and Li, 2015; Barko et al., 2021; Becht, Franks, and Wagner, 2021; Hoepner et al., 2021, and Azar et al., 2021). To verify that the Lewellen and Lewellen (2022) incentive to engage measure provides an effective way to identify institutional investors with greater incentives to engage on portfolio firms' ESG conduct, we cross validate our committed versus nominal fund classification.

First, we assess committed and nominal funds' dedication to sustainable investments according to the Morningstar ESG Commitment Level measure, which was introduced in 2020. Unlike the quantitative Morningstar Sustainability Rating, which measures the extent to which a fund invests in firms with low ESG risk, the Morningstar ESG Commitment Level is based on the investment process and the extent of active engagement on ESG issues (Morningstar, 2020).¹⁴ We find that among the short list of asset managers with Morningstar ESG Commitment Level of Leader or Advanced in 2020, the only two U.S. companies, Calvert and Parnassus, are indeed classified as committed ESG fund families under our classification (i.e., families with more assets held by committed ESG funds). Moreover, 10 out of the 12 US asset managers that are rated as having Commitment Level of Basic or Low are classified as nominal ESG families (i.e., families with more assets held by nominal ESG funds).

¹⁴ The majority of the rated funds are ESG funds being tagged as "sustainable investment" by Morningstar.

Second, as an additional metric of ESG funds' level of dedication, we conduct a textual analysis on the Principal Investment Strategies (PIS section) of each fund prospectus. Following prior studies (see, e.g., Li et al., 2021, Heath et al., 2021), we compile a list of ESG keywords and their synonyms and examine their occurrence in the PIS. Our findings provide further evidence of committed funds being more likely to consider sustainable investments as a main pillar of their investment strategies. In untabulated results, we find that committed funds have a significantly higher average likelihood of mentioning ESG keywords across our sample period, compared to either nominal funds or non-ESG funds.

3. Comparing Investment Strategies across Different Types of ESG Funds

3.1 Are ESG funds more patient investors?

Section 2 shows that both committed and nominal ESG funds invest heavily in high ESG stocks, but there are significant differences in incentives to engage. We conjecture that these differing incentives lead to different investment strategies.

Our fundamental prediction is that higher incentives to engage should correlate with longer investment duration and with more patient investment. This prediction is based on several factors. First, engagement requires time: if a fund seeks to increase the value of a certain firm through engagement, the fund will tend to hold that firm longer. Second, following Starks, Venkat and Zhu (2021), we predict that funds' incentives to engage will cause them to be more patient toward management of high-ESG firms. ESG-related investments can take time to pay off, and in some cases the required investments can contribute to short-term underperformance.

However, a fund that is engaging with firm management will have a better understanding of these issues, and therefore be less likely to sell the company.

We test these concepts in Tables 3 – 4. We begin our discussion with the investment strategies of committed funds. As shown in Table 1, committed funds have significantly higher incentives to engage on their ESG stocks than on other stocks. We thus predict that committed funds will be less likely to sell a high ESG stock following poor performance, compared to other stocks. In contrast, nominal funds have similar incentives to engage on both ESG and non-ESG stocks, meaning we would not expect significantly different investment strategies.

As shown in Table 3, we regress *Net Trades* of each fund in each firm on *Poor Performance* and the interaction between *Poor Performance* and *High ESG Stock*. *Net Trades* are measured as the dollar amount of a fund's trading of a stock (multiplied by 100) during the quarter, scaled by the fund's portfolio value in the prior quarter. In columns 1, 3, and 5 (columns 2, 4, and 6), *Poor Performance* equals one if the stock is ranked in the bottom quintile by earnings surprise (3-month stock returns) in the prior quarter, and zero otherwise. We measure earnings surprise as the difference between the firm's actual earnings and the median analyst forecast during the quarter.¹⁵ *High ESG Stock* is a dummy equal to one if the stock is categorized as such. We include fund-by-quarter fixed effects, thereby controlling for any differences in funds' investment horizon, for example as may arise from differences in investment style. The analysis is done separately for committed funds, nominal funds and non-ESG funds.

As expected, funds tend to sell loser stocks, as indicated by the significantly negative coefficient on *Poor Performance* in all columns. However, as shown in Columns 1 and 2,

¹⁵ We extract median analyst forecasts from I/B/E/S. Earnings surprise is scaled by stock price as of the fiscal quarter end corresponding to the reported earnings.

committed funds do not exhibit this tendency among their high ESG stocks (as evidenced by the fact that the sum of the coefficients on *Poor Performance* and *High ESG Stock* \times *Poor Performance* is positive). Relative to both nominal funds and non-ESG funds, committed funds are significantly less likely to sell a poor performing stock if the stock has high ESG performance.¹⁶ These results are consistent with committed funds' higher incentives to engage leading them to obtain a better understanding of the long-term value of sustainable corporate activities; this makes them more willing to maintain their investments in high ESG firms even during periods of poor short-term performance.

Table 4 examines whether committed funds' greater propensity to hold high ESG stocks through periods of poor performance translates more generally into a longer-term ESG investment horizon. Following Cremers and Pareek (2016), each quarter we measure duration as the weighted number of months that each stock has been held continuously in the fund portfolio, where the weight represents the dollar value of the position relative to fund NAV. For each fund, we compute the holdings-weighted average duration for two subportfolios: the fund's high ESG stocks and the fund's other stocks. If a fund always makes longer term investments in ESG stocks than in other stocks, the duration difference between its two subportfolios, denoted as duration gap, will be positive.

In conducting this analysis, we account for the fact that duration of individual holdings also depends on stock and fund characteristics. For example, since value stocks tend to have longer term investment value than growth stocks, funds may hold value stocks longer. Also, if some funds trade less actively, then they may hold all investments longer irrespectively their

¹⁶ The difference in the interaction term between *Poor Performance* and *High ESG Stock* is significant between committed and nominal ESG funds as well as between committed and non-ESG funds at 5% (1%) when performance is measured by earnings surprise (stock returns).

ESG status. To control for such factors, we measure the difference between each fund's high ESG and other holdings, for the following factors: stock book-to-market ratio, fund turnover, and fund active share. Importantly, an advantage of focusing on the duration gap between high ESG and other holdings within a fund is that we control for differences in holding duration across funds, which might be attributed to some unobserved fund-level factors.

Looking at Table 4, we first analyze the cross-sectional difference in duration gap across fund types. In Column 1, we restrict the sample to ESG funds, and we regress the duration gap between high ESG firms and other firms on a dummy variable indicating committed funds, a set of fund-level characteristics, and time fixed-effects. The significantly positive coefficient on the committed dummy indicates that, on average, the duration gap of committed funds is about 1.6 months larger than that of nominal funds. This finding supports our predictions: committed funds take a more long-run approach towards their ESG firms than their other firms, and nominal funds have less of a differential between the two types of stocks.

In Column 2, we expand the sample to all funds, meaning the benchmark category is non-ESG funds. Results indicate that the duration gap of committed (nominal) funds is 2.6 (0.9) months larger than that of non-ESG funds. Although both committed and nominal funds hold ESG stocks longer than other stocks as compared to non-ESG funds, this difference in investment horizon is not as pronounced among nominal funds.

Having documented the longer duration gap of committed funds compared to other funds, Column 3 further examines whether there is any significant change in the duration gap when a fund switches from a non-ESG fund to an ESG fund. Specifically, in Column 3, we add fund fixed-effects to the specification to study within-fund variations. The results indicate that when a fund switches from a non-ESG fund to a committed ESG fund, the duration gap between high

ESG and other holdings becomes significantly larger. However, there is no such increase in investment horizon when a non-ESG fund switches to a nominal ESG fund. Moreover, the significant difference between the coefficients on committed fund and nominal fund indicates that among ESG funds, the duration gap widens if a nominal fund becomes a committed fund. In aggregate, results in Tables 3 and 4 indicate that ESG funds with higher incentives to engage, i.e., the committed funds, have significantly different investment strategies than other funds. They tend to hold their ESG stocks for longer periods and they are more willing to maintain investment positions even following periods of underperformance.

3.2 Reactions to ESG risk incidents

If committed funds are better positioned to understand ESG-related risks, then they should keep a closer eye on portfolio firms' ESG risks and adopt a more sophisticated approach toward ESG-related risk events. To examine fund reactions to portfolio firms' ESG risk events, we rely on RepRisk ESG news. RepRisk systematically identifies and assesses material ESG risks by screening and analyzing information from a wide range of public sources on a daily basis. In addition to providing a regularly updated ESG risk index for their approximately 155,000 covered firms, RepRisk News provides time-stamped data on ESG risk incidents concerning individual firms.

First, we examine the extent of research that ESG funds conduct on firms around negative ESG incidents. This sheds light on the attention funds devote to the firms, in the days immediately surrounding these events. Second, we examine funds' trading activities during these times, which offers more direct evidence on investment choices, albeit at a lower frequency since we can only infer fund trades from quarterly changes in fund holdings.

3.2.1 Evidence on funds' research of portfolio firms

Following evidence by Crane, Crotty and Umar (2021) and Wang (2019) that sophisticated investors collect information from financial filings to improve performance, we examine ESG funds' information acquisition around ESG risk incidents. Since the identity of downloading institutions can only be determined at the fund family level (as discussed in Section 2), we compare the views of SEC financial filings by committed versus nominal ESG fund families.

First, we classify a fund family as an ESG family if the fraction of assets accounted for by ESG funds is ranked in the top tercile in a given quarter. Second, within ESG families, we classify a family as committed or nominal. If the fraction of family TNA held by committed ESG funds is above median then the family is classified as committed; otherwise we classify the family as nominal. Internet Appendix Figure A1 shows the histogram of the fraction of committed ESG funds within individual ESG families. There exists pronounced clustering of families in both tails of the distribution, suggesting that the composition of committed and nominal ESG funds within an ESG family is not random.¹⁷ That is, a common level of incentives to engage is likely to be shared across funds within a family.

Figure 1 illustrates the probability of each family type viewing firm financial statements on the EDGAR platform, during the ten days around the negative ES news announcement day. The left-hand panel focuses on severe ESG news events, defined as cases in which the three-day cumulative abnormal returns (CAR) around the news announcement day falls into the bottom

¹⁷ The clustering of families in each tail is not driven by families with only one ESG fund. Only 10% of families have one ESG fund. We also try imposing the restriction that a family's number of ESG funds is greater than three and find the figure to be very similar.

quintile (where quintiles are defined each quarter). All other ESG news events are considered non-severe, and these are shown in the right-hand panel.

Consistent with existing evidence on institutional investors' views of SEC filings, both committed and nominal ESG fund families exhibit elevated attention to a firm when it is exposed to an ESG risk event. However, committed funds' attention is higher than that of nominal funds in the days immediately around the news release day, and the difference is significant on the first two days following the announcement. There is also some indication that committed funds' heightened interest begins prior to the news announcement, potentially reflecting awareness of the issue before it is covered widely by the news media. In contrast, nominal funds exhibit increased downloading mostly on the announcement day. In sum, the main takeaway from Figure 1 is that committed ESG funds pay more attention to firms' ESG risks.

3.2.2 Evidence from trading activities

Following evidence in Figure 1 regarding ESG funds' research around firm ESG risk events, in this subsection we examine how they trade on these events. Severe ESG risk events, by definition, are accompanied by significant negative market reactions, and in many cases they result in the downgrading of a firm's ESG rating. These dynamics trigger divestiture by ESG funds that implement negative screening. However, committed funds have stronger incentives to engage with portfolio firms and through such engagement are more likely to understand the nature of individual ESG risk events. Committed funds' greater research around these events further contributes to such an understanding. Based on these factors, we predict that committed funds will exhibit different trading patterns around ESG incidents, compared to nominal funds.

We examine fund trading during the quarter a firm is exposed to ESG risk events, classifying these events as either severe or non-severe. We also control for non-ESG news, as captured by Ravenpack News Analytics, which we classify as severe or non-severe using the same algorithm. Specifically, we classify it as ‘Severe Non-ESG Negative News’ if the three-day announcement CAR ranks in the bottom quintile across all news events in a quarter, and as ‘Other Non-ESG News’ otherwise. Importantly, while Reprisk focuses exclusively on adverse ESG incidents and as such represents negative news, the ‘Other Non-ESG News’ category includes both small negative and positive news. To capture additional factors that potentially influence fund trading responses, we control for the following set of stock characteristics measured as of the quarter before the event: the natural logarithm of market capitalization, book-to-market, stock performance, and Amihud illiquidity.

Results are shown in Table 5. The dependent variable is a measure of fund trades during the event quarter (*NetTrade*), defined as dollar trades as a fraction of fund portfolio value. Columns 1 and 2 estimate fund-security level regressions where the dependent variable is the fund’s *NetTrade*. Columns 3 and 4 show security level regressions where the dependent variable is the aggregate change in the number of shares held by a fund type, scaled by the number of shares outstanding in basis points. The fund-security level analyses give equal weight to individual funds, while the aggregated security-level analyses give more weight to larger funds, which tend to make larger trades.

Consistent with predictions, results in columns 1 – 2 show significant differences in trading among the different fund types. Within the set of ESG funds, only nominal funds are significantly more likely to sell the stock following severe ESG events. The contrast between committed and nominal ESG funds is striking. While Chen et al. (2021) and Gantchev et al.

(2022) conclude that institutional investors, and particularly ESG-conscious investors, are more likely to sell after ESG incidents, our findings show that this effect is limited to the subset of ESG funds with weak incentives to engage.

The finding from the fund-security level regressions that only nominal funds are significantly more likely to sell around severe ESG negative news implies that the ownership composition of the stocks will change during these times. Columns 3 – 4 provide support for this conjecture. When we estimate regressions at the security level, we observe that the ownership of nominal funds significantly decreases following these events, whereas the ownership of committed funds significantly increases.

4. Real Impacts on Firms' ESG performance?

In this section, we evaluate whether committed funds' ESG integrated investment strategies influence the ESG-related factors of the underlying firms. We begin in section 4.1 with an analysis of changes in portfolio firms' ESG risks following trading by committed versus nominal funds. Section 4.2 examines the broader question of the real effects of ESG investments, using a two-stage regression framework that both controls for other factors and addresses endogeneity concerns.

4.1. Changes in ESG performance following trades by ESG funds

We focus on the same set of Reprisk ESG risk incidents as examined in Section 3.2. For firms subject to severe ESG risk exposure in quarter t , we examine their RepRisk ESG risk index (RRI) during quarters $t+1$ through $t+4$, separately for firms bought or sold by each type of fund.

Since the RepRisk ESG risk index dynamically captures and quantifies reputational risk exposure related to ESG issues, a reduction in the index suggests improved ESG performance.

To quantify funds' trading in each stock, we classify a stock as subject to intensive buy (sell) by committed funds if the stock is in the top (bottom) quintile among committed funds' trading during quarter t . We label these cases 'Committed buy' and 'Committed sell', respectively. 'Nominal buy' and 'Nominal sell' are defined analogously. To account for changes in firms' ESG risk over time that are unrelated to intensive trades by ESG funds, we consider the case where a stock is not intensively traded by either committed or nominal funds as the baseline case. We estimate regressions in which the dependent variable represents the change in the Reprisk ESG risk index over periods ranging from one to four quarters after the quarter of a risk incident. Specifically, the dependent variables in columns 1 – 4 represent $\Delta RRI_{t, t+1}$, $\Delta RRI_{t, t+2}$, $\Delta RRI_{t, t+3}$, and $\Delta RRI_{t, t+4}$, respectively. Control variables include firm size and book-to-market as of the end of quarter t , and stock returns during quarter t .

It is important to note that a relation between fund trading and changes in the risk index could potentially represent one of two phenomena: the fund predicting changes in risk and buying on that information (selection channel), or fund engagement with firms causing the firm to modify their behavior in ways that lower their risk (engagement channel).

Looking first at column 1 of Table 6, we observe significantly negative coefficients on both *Committed Buy* and *Nominal Buy*. This evidence of firm risk falling within just one quarter of fund buying is arguably more likely driven by the selection channel. In contrast, columns 2 and 3 show that only *Committed Buy* is significantly related to decreases in fund risk at longer horizons, that is, at horizons where the engagement channel is more likely to play a role. In

economic terms, the firms intensely bought by committed funds experience a risk reduction of 15.8% after two quarters. Compared to the base case of firms that are neither bought nor sold, this represents a 36% reduction.¹⁸

Although nominal funds tend to sell firms experiencing severe ESG risk incidents as shown in Table 5, this negative screening based investment strategy does not appear to have any significant disciplinary effects on firms' ESG performance. This finding echoes the view that investor divestiture might not be the most effective way to influence corporate ESG conduct (see, e.g., Cohen, Gurun and Nguyen, 2021; Berk and van Binsbergen, 2021). Instead, continued investments by committed funds that tend to engage firm management turn out to be associated with more persistent improvements in portfolio firms ESG conduct. Our evidence thus complements prior findings in the literature that successful ESG engagements by large institutional investors are often followed by improvements in ESG performance (e.g., Dimson, Karakaş, and Li, 2015; Barko et al. (2021); Becht, Franks, and Wagner, 2021; Hoepner et al., 2021, and Azar et al., 2021).

4.2. The causal impact of investments by committed funds

A positive relation between fund buying and changes in a firm's ESG risk, as shown in the prior subsection, can reflect both a selection channel and an engagement channel. In this subsection, we turn to a natural experiment to more robustly distinguish between the two channels. To isolate the effects of the engagement channel, we compare firms' ESG performance following an exogenous capital infusion to ESG funds. Hartzmark and Sussman (2019) find that

¹⁸ When all dummies (committed and nominal, buy and sell) are set to zero, the average change in RRI from t to $t+2$ is -11.6%. The coefficient on Committed Buy of -4.225% indicates that the total change in RRI when committed funds purchase is -15.8%; $(15.8 - 11.6) / 11.6 = 36\%$,

following the introduction of the Morningstar Sustainability Rating in 2016, funds ranked as low sustainability experienced net outflows while those categorized as high sustainability attracted large inflows. As shown in Hartzmark and Sussman (2019), such additional inflows are unrelated to fund performance and the fundamentals of fund holdings. As such, these inflows represent an exogenous shock to ESG funds' TNA, which will, on average, lead to increased positions within the portfolio firms.

Consistent with Hartzmark and Sussman (2019), Figure 2 shows that around the introduction of the Morningstar Sustainability Rating, ESG funds experience significant inflows relative to non-ESG funds. Time 0 represents the end of March 2016, the end of the quarter in which Morningstar introduced this rating. Flows into funds are tracked from 15 months prior to this date through 15 months after. To more clearly contrast flows into ESG funds before and after the rating introduction, cumulative flows are set to zero both in month -15 (to track the evolution of flows prior to the rating introduction) and in month 0 (to track the evolution of flows after the rating introduction).¹⁹

To shut down the selection channel and focus solely on the engagement channel, we fix the portfolios of firms held by each fund as of the quarter prior to the shock. We then examine whether those firms that were part of an ESG fund's portfolio before the shock subsequently experience significant changes in their ESG performance. We estimate regressions at the annual level, which provides two advantages over the quarterly level employed in Table 6. First, effective engagement can take an extended period, which can be better captured at the annual

¹⁹ See, e.g., the following blog that discusses the introduction of Morningstar Sustainability Rating in August 2015. <http://www.justmeans.com/blogs/sustanalytics-and-morningstar-partner-to-launch-first-esg-scores-for-funds>

level. Second, our focus enables us to examine outcome measures that are not available at the quarterly interval.

We employ two measures of firms' ESG performance: each firm's annual RepRisk Risk Index and each firm's annual toxic release, as available from the Toxics Release Inventory (TRI) Program of the U.S. Environmental Protection Agency (EPA). The former provides an overall assessment of a firm's ESG performance while the latter provides a more precise measure of a firm's environmental practices. Firms' on-site toxic release captures pollutants released on-site to the environment, including air, surface water, land, and underground (Lyu, Shan and Tang, 2021). The analysis is estimated at the stock-year level, comparing the real effects of fund investments across firms with different levels of investments by committed versus nominal funds.

Our first step is to isolate the effects of the exogenous fund flows on ESG funds' additional investments into portfolio firms. We follow the approach of Doshi, Elkamhi, and Simutin (2015). Focusing on the last quarter of 2015, we create an aggregate portfolio representing the sum of all ESG company shares held by committed funds. For each of these ESG companies, we calculate its weight in this 'committed' portfolio minus its weight in the market portfolio. This difference represents an estimate of the stock's overweighting by committed funds. The dummy variable *High Committed Overweight* equals one if this measure is in the top quintile. We employ an analogous approach to calculate each stock's overweighting by nominal funds and to create the *High Nominal Overweight* dummy.

We regress the logarithm of the RepRisk Risk Index and the logarithm of the TRI on-site release on the interaction terms *High Committed Overweight* \times *Post* and *High Nominal Overweight* \times *Post*, where *Post* is a dummy variable equal to one in the post-2015 period. These

interaction terms capture the extent to which an exogenous increase in funds' ownership of high ESG stocks relates to subsequent changes in firm operations, specifically to a decrease in ESG-related risk or to a decrease in emissions. As such, they isolate the effects of the engagement channel. We predict a significant negative coefficient on *High Committed Overweight* \times *Post*: the exogenous increase in investment by committed funds, combined with committed funds' incentives to engage, should lead to a decrease in ESG-related risk and to a decrease in toxic emissions. In contrast, we do not predict a similar effect on *High Nominal Overweight* \times *Post*.

Looking first at Columns 1 and 3 of Table 7, results are consistent with predictions. Committed funds' higher incentives to engage have real effects. Greater overweighting by such funds leads to significant decreases in ESG-related risk (as captured by the RRI Risk Index) and to significant decreases in emissions. In contrast, although firms heavily overweighted by nominal funds also receive additional investment, there is no significant change in either of these ESG performance metrics.

In columns 2 and 4, we examine in more detail the years in which these changes occur. We substitute year dummies for the *Post* dummy. That is, we separately interact *High Committed Overweight* with individual year dummies for 2013 to 2018. Consistent with predictions, we observe strong positive effects in years 2016 – 2018. We also observe some effects in 2015, consistent with the runup in flows that coincided with early Morningstar discussions (as similarly documented by Hartzmark and Sussman).

Table 8 explores these findings in more depth, by examining heterogeneity across firm types. We predict that the observed changes in firms following the Morningstar shock, as shown in Table 7, will be concentrated within high ESG firms. Several factors underlie this prediction. First, as reported in Table 1, committed funds' incentives to engage are significantly higher on

ESG stocks than on non-ESG stocks. Second, high ESG firms should be more affected by the exogenous capital infusion following the introduction of the Morningstar Sustainability rating if funds respond to increased inflows by maintaining similar percentage allocations across portfolio stocks.²⁰ That is, high ESG firms should be more affected by the exogenous capital infusion from committed funds since these funds allocate more concentrated portfolio weights to these firms. Third, prior literature suggests that ESG engagement may be more likely to succeed when targets have relatively high ESG ratings. Such firms have already demonstrated that they care about ESG issues, and Barko et al (2021) find that firms with high ex ante ESG ratings experience ratings downgrades following the revelation of their ESG problems. These firms likely have strong incentives to respond to engagements, as a way to avoid such negative outcomes.

Results are consistent with predictions. Columns 1 and 2 of Table 8 indicate that exogenous shocks to capital within committed funds are followed by significant ESG-related improvements among high ESG stocks. In contrast, effects are weaker within non-ESG stocks, particularly with respect to future emissions. Finally, consistent with nominal funds participating in less engagement, we do not find similar effects among nominal funds.

Overall, the results to this point illustrate that committed and nominal ESG funds employ very different sustainable investment strategies. Nominal ESG funds, given their more dispersed investments towards ESG compliant firms, face fewer incentives to engage with their portfolio companies on ESG related issues. Therefore, they are more likely to walk away from firms exposed to severe ESG risk. In contrast to nominal funds' simplistic negative screening strategy, committed funds appear to adopt ESG integrated investment strategies that are more

²⁰ This assumption is consistent with the fact that individual firms' portfolio weight in a fund remains relatively stable during the quarters leading up to the event. Specifically, 83% of overweighted firms by a fund at the end of 2014 remain as overweighted at the end of 2015.

sophisticated and rely more on independent research rather than merely stock market signals. As a result, committed funds' continued investments are more effective in improving firms' ESG performance than divestiture by nominal funds.

5. Performance and Flows of ESG Funds

5.1 Performance of ESG funds

Prior studies have found mixed evidence regarding the performance of institutional investors engaging in sustainable investments. In particular, there is no consensus regarding whether funds can “do well by doing good.” On the one hand, evidence that good ESG practices help reduce firms' downside risk and increase their long-term value suggests that high sustainability funds could outperform due to their portfolios' tilt towards high ESG stocks (see, e.g., Hoeper et al., 2021; Chen et al., 2021). On the other hand, several studies suggest that high sustainability funds may underperform due to the constraints imposed on their portfolios and financial losses may even be the necessary condition for them to achieve impacts (Renneboog, Ter Horst, and Zhang, 2008; Riedl and Smeets, 2017; Barber, Morse, and Yasuda, 2021; Liang, Sun, and Teo, 2020; Oehmke and Opp, 2020).

We examine in Table 9 whether committed funds' greater focus on ES-related issues comes at the expense of financial performance. Note that committed ESG funds are likely to be more informed ESG investors, compared to their nominal counterparts. This conjecture is supported by evidence on their greater research around negative ES events and their higher incentives to engage, as well as evidence that their engagement contributes to ES-related improvements in underlying firms. We employ three alternative measures of performance. In

Columns 1 and 2, the dependent variable, fund performance, is measured as the DGTW (1997) characteristics-adjusted returns of fund holdings over a 12-month horizon. In columns 3 and 4, the dependent variable similarly represents DGTW (1997) characteristics-adjusted returns; however, these returns are measured only across the subset of the fund's holdings that represent ESG stocks in column 3, and only across all other stocks in column 4. We regress these measures of fund performance on a *Committed* fund dummy, a *Nominal* fund dummy, and a battery of fund characteristics that have been shown to affect fund performance.

Looking first at column 1, the sample includes all funds, meaning the benchmark category is non-ESG funds. The significantly positive coefficients on both *Committed* and *Nominal* indicates that both types of ESG funds outperform non-ESG funds during our sample period. The finding that ESG funds do not underperform, at least during our sample period, is potentially consistent with Chen et al.'s (2021) conclusion that funds with a higher propensity to integrate ESG considerations into their portfolio decisions earn superior risk-adjusted returns. Alternatively, this finding could simply be explained by the unexpectedly strong preferences of investors for high ESG stocks', which contributed to ESG stocks' great run-up during the most recent decade (Pastor, Stambaugh, and Taylor, 2021). An additional observation from Column 1 is that committed and nominal ESG funds perform roughly equally. Column 2 shows that this conclusion is robust to restricting the sample to just ESG funds, as evidenced by the insignificant coefficient on the *Committed* dummy in this specification.

In columns 3 and 4, we examine in more depth the question of whether attention to ESG-related issues contributes positively or negatively to returns by separately examining returns on high ESG stocks and all other stocks, respectively. Evidence throughout the paper indicates that committed funds devote more resources to their ESG holdings, in terms of both attention and

engagement. Does this give them an information advantage which contributes positively to returns on their ESG stocks, or does it constrain their investments in ways that have a negative influence on this portion of their portfolio?

Results in column 3, where the dependent variable is DGTW (1997) abnormal returns on ESG stocks, indicate that attention to ESG stocks has given committed funds an advantage, at least during our sample period. Committed funds significantly outperform nominal funds on their ESG investments, with an economic magnitude of approximately 50 bps per year. In contrast, column 4 indicates that committed funds and nominal funds have not performed significantly differently on their non-ESG stocks.

The finding that committed funds outperform nominal funds only on the subset of ESG stocks is striking along several dimensions. First, given that both committed and nominal funds invest a similar percent of AUM in ESG stocks (as shown in Table 2), committed funds' outperformance cannot be explained by greater holdings in ESG stocks, as the conclusions of Pastor et al. (2021) might suggest. Second, committed funds' outperformance also cannot be attributed to them having higher active share and industry concentration index— attributes that could be related to managerial skill in general (Kacperczyk, Sialm and Zheng, 2005; Cremers and Petajisto, 2009). This is because committed and nominal funds perform similarly on other holdings (as shown in column 4).

5.2 Flows of ESG funds

Our findings thus far suggest that even among funds that adopt ESG-themed investment strategies, there exists significant heterogeneity in terms of their approach to sustainable investments. Committed ESG funds do more independent research of firms' ESG risks, and they

make more long-term oriented investments in firms with good ESG practices. Moreover, consistent with their higher incentives to engage, committed funds' investments also have a bigger impact on portfolio firms' ESG performance. In this subsection, we pose two questions related to whether committed funds are rewarded for these qualities. First, are investors aware of these differences among ESG funds? Second, are committed funds rewarded for their more sophisticated ESG integration? We address these questions through an examination of fund flows.

We calculate fund flows as the quarterly changes in fund TNA, adjusted for fund returns. We regress fund flows on a *Committed* dummy and a *Nominal* dummy. We control for fund performance, measured by either three-year net-of-fee returns or the Carhart (1997) four-factor alpha estimated using monthly fund returns over the past 36 months. In addition to fund performance, we also control for fund characteristics such as expense ratio, turnover, the logarithm of fund TNA, the logarithm of fund age, prior-quarter fund flows, and flows of the fund's investment style. Results are presented in Table 10.

Looking first at patterns over the full sample period, as shown in Column 1 and 2, we find little evidence of either nominal or committed funds attracting abnormal flows. However, subsequent columns suggest that there has been a shift during our sample period. While columns 5 and 6 show no effect during the pre-2016 period, columns 3 and 4 indicate that both committed and nominal funds have attracted significantly positive abnormal flows over the post-2016 period. The post-2016 period is somewhat unique, because the introduction of the Morningstar Sustainability Rating contributed to heightened investor attention to sustainable investments following.

To address our question of whether committed funds are rewarded for their greater engagement with and influence on ESG firms, we compare the coefficients on *Committed* and *Nominal*. None of the columns provide any evidence that the coefficient on *Committed* is greater than that of *Nominal*. That is, we find no evidence that committed funds are rewarded with additional flows beyond those that can be explained by differences in fund performance. This finding is consistent with Heeb et al. (2022) that investors are not necessarily willing to pay more for sustainable investments that have larger impacts. Despite their recent preferences for sustainable investments, average mutual fund investors are not sophisticated enough to differentiate between sustainable investments that are better positioned to have social impacts and opportunistic window dressing behavior that aims to attract investor flows. Our evidence again calls for greater investor awareness on the heterogeneity across different types of ESG funds.

6. Conclusion

Regulatory authorities and academic studies often measure sustainable investments by asset managers' dollar investments in high ESG firms. Yet, several recent studies find no evidence that funds engaging in sustainable investments are able to either exert material impacts on firms' cost of capital or improve corporate conduct (see, e.g., Berk and van Binsbergen, 2021 and Heath et al., 2021). We hypothesize that in order for the capital market to be an effective mechanism influencing corporate ESG conduct, investors need to have incentives to monitor and engage with portfolio firms on ESG-related matters.

Holding portfolio weight on ESG firms constant, we classify ESG funds with high (low) incentives to engage with ESG firms as committed (nominal) ESG funds. We find that committed ESG funds exhibit more sophisticated ESG integration, compared to nominal funds. Specifically, they tend to make more long-time oriented investments in high ESG stocks and are significantly less likely to sell following poor short-term financial performance. Consistent with their purpose-related mandates, committed funds demonstrate greater attention to portfolio firms' ESG risk exposure with more intensive information production surrounding ESG risk incidents. In contrast to nominal funds' selling of stocks that are associated with severe ESG risk incidents, committed funds tend to hold or even buy these stocks as they intend to work with management to achieve change. Indeed, we find that firms intensively bought by committed funds subsequently experience significantly larger recovery in their ESG risk exposure, relative to those intensively sold by nominal funds.

Consistent with committed ESG funds' true ESG-themed strategies, we find that committed funds both outperform their nominal counterparts on their high ESG investments and exert greater real impacts on firms' ESG metrics. However, we do not find evidence that average investors are sophisticated enough to differentiate committed ESG investments versus opportunistic window dressing behavior aimed to attract investor flows. Conditional on performance, we find no evidence that committed funds attract higher flows.

Our study highlights the importance of understanding funds' incentives to engage firms on ESG-related issues. By proposing an effective and intuitive approach to distinguishing true ESG integration from a hidden form of "green washing" among ESG funds, we show that not all ESG funds are created equal; committed ESG funds are significantly more likely to pressure firms into improving their environmental and social impacts. Our paper also suggests that

engagement, as opposed to divestiture, is likely to be a more effective mechanism to influence corporate ESG conduct.

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Figure 1
Filing Downloads around Negative ESG News

This figure plots the probability of a committed (nominal) fund family downloading a firm’s filings on EDGAR during the days surrounding negative ESG news separately for severe and other ESG negative news. For each negative ESG news release, we calculate the three-day cumulative market-adjusted abnormal return (CAR) of the firm around the release and consider a news event as a severe ESG negative news if its CAR is ranked in the bottom quintile in a given quarter. The x-axis shows the days relative to the ESG news release ($t = 0$). The shaded area plots the 95% confidence interval.

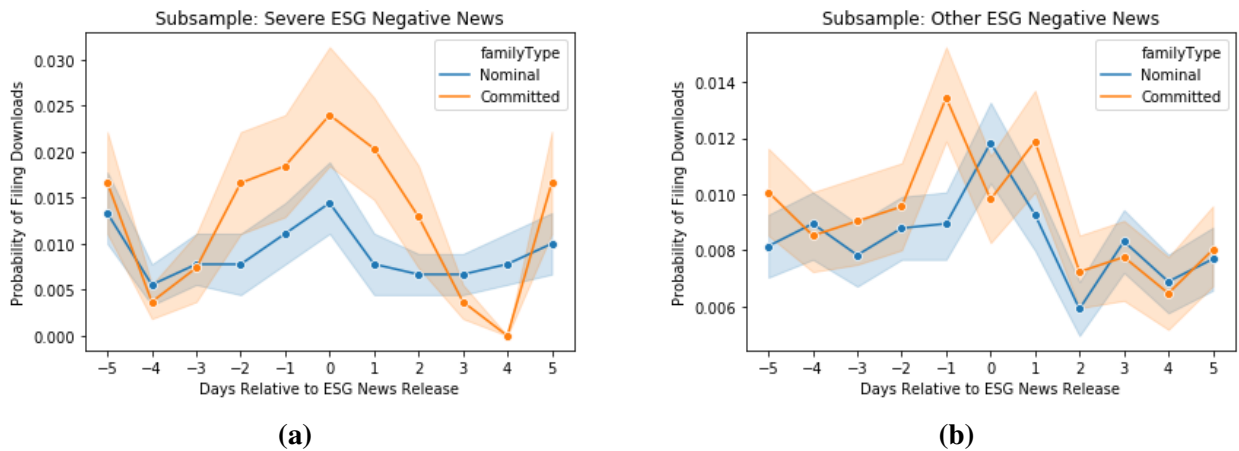


Figure 2

Flows to ESG Funds around the Introduction of Morningstar Sustainability Ratings

This figure plots the cumulative flows to funds around the introduction of Morningstar Sustainability Ratings, separately for high, medium and low ESG funds as determined by their asset-based ESG score tercile rankings in December 2015. The x-axis denotes the number of months relative to the month of the introduction, March 2016. The y-axis denotes cumulative fund flows. Following Hartzmark and Sussman (2019), we accumulate fund flows after removing year-by-month fixed effects for 15 months before and after the introduction. Cumulative flows are set to zero both in month -15 and in month 0. Shaded areas indicate the 95% confidence interval.

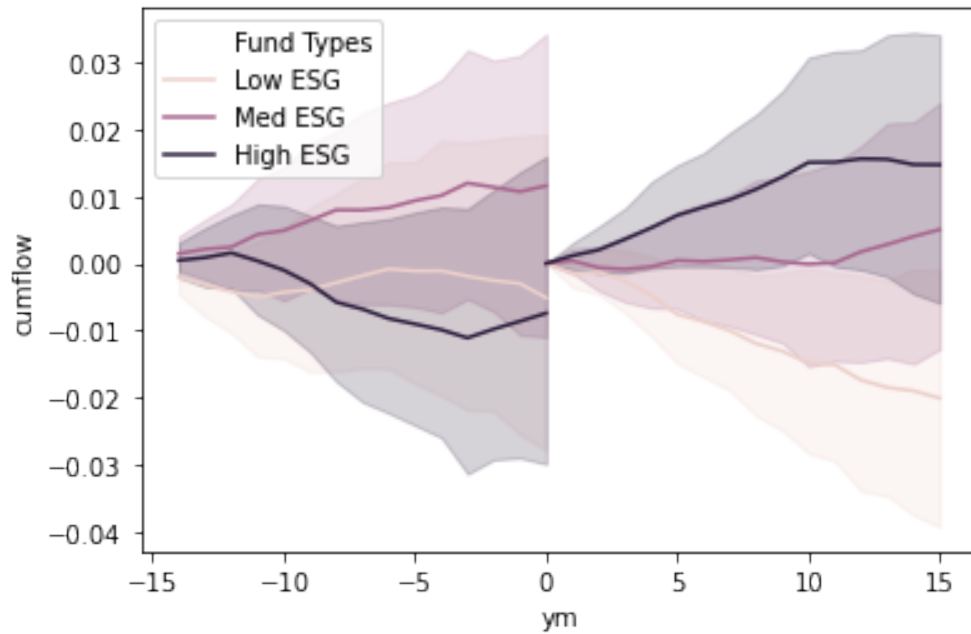


Table 1
Incentive to Engage with High ESG Firms

This table reports the Lewellen and Lewellen (2022) “Incentive to Engage” measure among high ESG stocks held by committed and nominal funds. Stocks ranked within the top three deciles according to their MSCI ESG scores are classified as high ESG stocks. The *Direct Component of Incentive to Engage* = $\sum_{i \in E} w_i^2$, *Flow Component of Incentive to Engage* = $\beta \sum_{i \in E} w_i(w_i - v_i)$, and *Incentive to Engage* is the sum of the two components, where E is the set of high ESG firms in the fund’s portfolio, w_i is the weight of high ESG stock i , v_i is its weight in the benchmark portfolio, and β is the fund’s flow-performance sensitivity computed as the sum of average slopes from cross sectional regressions of net inflow on lagged benchmark-adjusted returns in the past 12 quarters. Benchmark portfolio is proxied by aggregating holdings of all index funds within the fund’s style category. We also test the statistical significance of the differences between incentive to engage with high ESG and other firms for committed and nominal funds, respectively, in the last row.

	Committed	Nominal
Incentive to engage with high ESG firms	0.090	0.038
Direct component	0.042	0.018
Flow component	0.048	0.019
Incentive to engage with other firms	0.072	0.034
Difference: Incentive to engage with high ESG vs other firms	0.018***	0.004

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2
Fund Characteristics

This table reports fund characteristics of committed, nominal, and non-ESG funds. *Weight on High ESG Stocks* is the weight of high ESG stocks in fund portfolio. *Expense Ratio* is the annual operating expenses relative to AUM in percentage. *Turnover Ratio* is annual fund turnover ratio. *Age* is the number of years since fund inception. *Load* is a dummy variable indicating funds charging front or rear load fees. *TNA* is the total net assets of a fund in billion dollars. *Family TNA* is the total net assets of all funds in the fund family in billion dollars. *Quarterly Return* is the quarterly return net of fees in percentage. *Quarterly 4-factor Alpha* is Carhart four-factor alpha estimated from 36-month rolling regressions. *Quarterly Flow* is quarterly fund flow in percentage, estimated as TNA at the end of quarter minus last quarter's TNA times this quarter's return, divided by last quarter's TNA. *Industry Concentration Index* is the sum of the squared deviations of portfolio weights for each of the 10 different industries held by the fund relative to their market portfolio weights, following Kacperczyk et al. (2005). *Active Share* is the share of a fund's portfolio holdings that differ from the benchmark portfolio holdings, following Cremers and Petajisto (2009). The last two columns report differences in fund characteristics between committed and nominal funds and between committed and non-ESG funds.

	Committed	Nominal	Non-ESG	C - N	C - Non
Weight on High ESG Stocks	0.39	0.39	0.28	0.00	0.11***
Expense Ratio (%)	1.12	1.00	1.08	0.12***	0.04
Turnover Ratio (%)	57.00	60.13	72.83	-3.13	-15.83***
Age (year)	20.82	22.73	19.70	-1.91**	1.12
Load	0.71	0.69	0.72	0.02	-0.01
TNA (billion)	1.54	3.00	2.13	-1.46***	-0.59**
Family TNA (billion)	165.51	189.19	195.53	-23.68	-30.02
Quarterly Return (%)	3.15	3.23	2.60	-0.08	0.55***
Carhart 4-factor Alpha (%)	-0.50	-0.44	-0.78	-0.06	0.28***
Quarterly Flow (%)	-1.42	-1.30	-1.43	-0.12	0.01
Industry Concentration Index	0.27	0.19	0.22	0.08***	0.04***
Active Share	0.85	0.75	0.82	0.10***	0.03***

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3
Fund Trading Responses to Poor Performance

This table examines whether funds' trading responses to poor past performance differ between high ESG and other stocks. The dependent variable $Net\ Trades_{ij}$ is the dollar amount of fund i 's trading of stock j from quarter $t - 1$ to quarter t , scaled by the fund's portfolio value in quarter $t - 1$, expressed in percentage. The dummy variable $Poor\ Performance$ is equal to one if a stock is ranked in the bottom quintile by either prior-quarter earnings surprise (columns 1, 3 and 5) or three-month stock returns (columns 2, 4 and 6), and zero otherwise. The dummy variable $High\ ESG\ Stock$ is equal to one if a stock's MSCI ESG score is ranked in the top three deciles during the quarter, and zero otherwise. We then regress $NetTrade$ on $Poor\ Performance$, $High\ ESG\ Stock$, their interaction term, and control variables including the natural logarithm of the stock's market capitalization, book-to-market, stock returns, and Amihud illiquidity measure in quarter $t - 1$. All regressions include $fund \times time$ fixed-effects. Columns (1) and (2) report the results for committed ESG funds, (3) and (4) for nominal ESG funds, (5) and (6) for non-ESG funds. Standard errors are clustered at the fund level.

	Committed ESG Funds		Nominal ESG Funds		Non-ESG Funds	
	(1) NetTrade	(2) NetTrade	(3) NetTrade	(4) NetTrade	(5) NetTrade	(6) NetTrade
Poor Performance	-0.010** (-2.31)	-0.012** (-2.07)	-0.008*** (-4.13)	-0.014*** (-5.77)	-0.007*** (-6.01)	-0.007*** (-4.65)
High ESG Stock \times Poor Performance	0.016*** (2.71)	0.016** (2.45)	0.002 (1.03)	-0.000 (-0.15)	-0.000 (-0.30)	-0.005*** (-3.42)
Past Performance Measure	Lag SUE Y	Lag 3-month Return Y	Lag SUE Y	Lag 3-month Return Y	Lag SUE Y	Lag 3-month Return Y
Fund X Time FE	Y	Y	Y	Y	Y	Y
Stock Control	229096	239525	647956	685731	2367859	2561766
N	0.0514	0.0507	0.0305	0.0301	0.0358	0.0358
Adjusted R^2						

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4
Duration Gap between High ESG Holdings and Others

This table examines the difference in holding duration between high ESG holdings and other holdings for committed, nominal, and non-ESG funds, respectively. For each fund-stock-quarter observation, the holding duration is the weighted number of months that a stock has been held continuously in that fund's portfolio, following Cremers and Pareek (2016). For each fund-quarter observation, we then aggregate individual stocks' duration separately for high ESG and other stocks, weighted by their portfolio weights. The dependent variable, duration gap, is the difference in holding duration between a fund's high ESG and other holdings. We also calculate differences in average book-to-market, market capitalization, and gross profitability between each fund's high ESG and non-ESG sub-portfolios. The independent variables include book-to-market difference, market capitalization difference, gross profitability difference, fund expense ratio, turnover ratio, the natural logarithm of total net assets, industry concentration index, active share, flow and return volatility in the past year, and funds' prior-year returns. Column (1) estimates the duration gap among ESG funds. Column (2) and (3) estimate the duration gap among both ESG and non-ESG funds. Columns (2) and (3) include quarter fixed effects while column (3) include both quarter and fund fixed-effects. Standard errors are clustered at the fund level.

	(1)	(2)	(3)
	Duration Gap	Duration Gap	Duration Gap
Committed	1.521* (1.89)	2.636*** (3.60)	0.186** (2.53)
Nominal		0.897* (1.93)	-0.022 (-0.37)
B/M Dif	-0.729 (-1.12)	1.942*** (7.17)	-0.219 (-0.71)
Size Dif	2.180*** (11.60)	2.024*** (23.43)	1.822*** (20.01)
Profitability Dif	-2.768*** (-3.93)	-1.749*** (-4.63)	-2.456*** (-7.24)
Expense Ratio	-1.202 (-0.07)	9.942 (1.05)	-2.047 (-0.08)
Turnover Ratio	-0.293*** (-3.61)	-0.306*** (-7.55)	-0.175*** (-3.12)
Log(TNA)	-0.022 (-0.71)	-0.060*** (-3.68)	0.122*** (2.65)
ICI	-1.847*** (-2.81)	-2.438*** (-8.27)	-2.521*** (-5.02)
Active Share	-0.362 (-1.05)	0.149 (0.72)	0.896** (2.01)
Flow Volatility	-6.877*** (-5.53)	1.048* (1.72)	1.257** (2.35)
Return Volatility	0.954 (0.17)	-0.938 (-0.29)	-4.123 (-1.00)
Past Year Return	1.622*** (2.66)	0.650* (1.85)	-0.250 (-0.75)
Sample	ESG Funds	All Funds	All Funds
Time FE	Y	Y	Y
Fund FE	N	N	Y
N	9595	28160	28137
Adjusted R ²	0.0772	0.101	0.388

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5
Fund Trading Following ESG Risk Incidents

This table examines how funds trade stocks experiencing negative ESG news. In columns (1) and (2), the regressions are estimated at fund-security level with fund-time fixed-effects, and the dependent variable is a fund's dollar trading of a stock during the quarter, scaled by the fund's portfolio value as of the prior-quarter end, expressed in percentage. In columns (3) and (4), the regressions are estimated at aggregated security level with time fixed-effects, and the dependent variable is the change in the number of shares held by a particular fund type, scaled by the number of shares outstanding in basis points. Negative ESG news are based on RepRisk ESG risk incidents and non-ESG related news are collected from Ravenpack. We define a news event concerning a stock as severe if the stock's three-day cumulative market-adjusted abnormal return (CAR) is ranked in the bottom quintile in a given quarter. The independent variables include *Severe ESG Negative News*, *Other ESG Negative News*, *Severe Non-ESG News*, and *Other Non-ESG News*, all measured as natural logarithm of the number of news. All regression specifications control for stock characteristics including the natural logarithm of market capitalization, book-to-market, past stock performance, and Amihud illiquidity, measured as of the quarter before the news event. We also report the differences in coefficients between severe ESG negative news and severe non-ESG news and the corresponding significance levels under F-test. Standard errors are clustered at the fund level in columns (1) and (2), and at the stock level in columns (3) and (4).

	Fund-Security Level		Security Level	
	(1) Committed	(2) Nominal	(3) Committed	(4) Nominal
Severe ESG Negative News	0.005 (0.38)	-0.015** (-2.42)	4.219** (2.33)	-5.073** (-2.12)
Other ESG Negative News	0.016 (0.76)	0.002 (0.61)	-0.079 (-0.09)	1.225 (1.03)
Severe Non-ESG Negative News	0.021* (1.71)	-0.010 (-1.59)	0.150 (0.20)	-2.477*** (-2.78)
Other Non-ESG News	-0.007 (-0.38)	0.006 (1.09)	1.496** (2.08)	3.202*** (3.73)
Severe ESG - Severe Non-ESG	-0.016	-0.005	4.069*	-2.595
FE	Fund-Time	Fund-Time	Time	Time
Controls	Y	Y	Y	Y
N	134621	370990	21902	21902
Adjusted R^2	0.0882	0.0351	0.167	0.183

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6
Changes in ESG Risk Index Following Severe ESG Risk Incidents

This table examines changes in the RepRisk Risk Index (RRI) following severe ESG risk incidents. The dependent variables are the relative change in RRI from quarter t to quarter $t+k$, where k ranges from one quarter to four quarters. The independent variables include indicator variables *Committed Buy*, *Committed Sell*, *Nominal Buy* and *Nominal Sell*. We classify a stock as subject to intensive buy (sell) by committed funds if the stock is in the top (bottom) quintile among committed funds' trading during quarter t . *Nominal Buy* and *Nominal Sell* are defined analogously. Control variables include the logarithm of market capitalization, book-to-market, and stock returns during quarter t . All regressions include quarter fixed effects. Standard errors are clustered at the stock level.

	(1)	(2)	(3)	(4)
	$\Delta RRI_{t,t+1}$	$\Delta RRI_{t,t+2}$	$\Delta RRI_{t,t+3}$	$\Delta RRI_{t,t+4}$
Committed Buy	-2.042* (-1.78)	-4.255*** (-3.09)	-3.297** (-1.96)	-0.689 (-0.39)
Committed Sell	-1.449 (-1.34)	-1.890 (-1.27)	-2.858* (-1.68)	-1.957 (-1.02)
Nominal Buy	-2.498** (-2.02)	0.009 (0.01)	-1.556 (-0.95)	0.775 (0.41)
Nominal Sell	-1.160 (-0.99)	1.495 (1.01)	2.149 (1.33)	3.778** (2.00)
Firm Size	2.895*** (12.24)	4.807*** (16.43)	7.484*** (19.89)	8.497*** (18.70)
Book-to-Market	0.248 (0.20)	-1.261 (-0.89)	-0.375 (-0.20)	-0.064 (-0.03)
Stock Returns	-0.012 (-0.00)	-1.596 (-0.57)	-2.154 (-0.59)	-2.332 (-0.54)
Time FE	Y	Y	Y	Y
N	2212	2073	1997	1894
Adjusted R^2	0.0607	0.120	0.188	0.198

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7
Real Effects of Investments by ESG Funds

This table examines whether investments by ESG funds help improve portfolio firms' ESG performance using the introduction of the Morningstar Sustainability Rating as an exogenous flow shock to ESG funds. The unit of observation is at the stock-year level. The dependent variables include the natural logarithm of the RepRisk Risk Index (columns 1 and 2) and the natural logarithm of a firm's on-site release from EPA emission data (column 3 and 4). For each stock held by ESG funds as of the last quarter of 2015, we calculate *Committed (Nominal) Overweight* as the weight in committed (nominal) funds' aggregate portfolio relative to its market portfolio weight, following Doshi et al. (2015). The dummy variable *High Committed (Nominal) Overweight* is equal to one if the stock is ranked in the top quintile by the overweight measure. The dummy variable *Post* is equal to one for years after 2015, and 0 if otherwise. We also include a set of year dummies to examine the pre-trend. All regressions control for the logarithm of market capitalization, book-to-market, 12-month returns during the year. All regressions include firm and time fixed-effects. Standard errors are clustered at the firm level.

	(1)	(2)	(3)	(4)
	log(Annual RRI)	log(Annual RRI)	Log(Emission)	Log(Emission)
High Committed Overweight × Post	-0.235** (-2.11)		-0.181* (-1.80)	
High Nominal Overweight × Post	-0.0859 (-0.78)		-0.00772 (-0.08)	
High Committed Overweight × Year 2013		-0.0607 (-0.63)		-0.126 (-0.86)
High Committed Overweight × Year 2014		-0.196 (-1.50)		-0.171 (-0.87)
High Committed Overweight × Year 2015		-0.372** (-2.46)		-0.298* (-1.70)
High Committed Overweight × Year 2016		-0.456*** (-2.96)		-0.436* (-1.95)
High Committed Overweight × Year 2017		-0.445*** (-2.87)		-0.143 (-0.68)
High Committed Overweight × Year 2018		-0.346** (-2.22)		-0.421* (-1.69)
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
N	6877	6877	2361	2361
Adjusted R ²	0.493	0.494	0.961	0.961

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8
Real Effects of Investments by ESG Funds on High ESG versus Other Stocks

This table examines whether the effect of committed funds' investments on firms' ESG performance varies across high ESG versus other stocks. We repeat the analysis in Table 8 separately for high ESG versus other stocks. The dependent variables include the natural logarithm of the RepRisk Risk Index (columns 1 and 2) and the natural logarithm of a firm's on-site release from EPA emission data (column 3 and 4). For each stock held by ESG funds as of the last quarter of 2015, we calculate *Committed (Nominal) Overweight* as the weight in committed (nominal) funds' aggregate portfolio relative to its market portfolio weight, following Doshi et al. (2015). The dummy variable *High Committed (Nominal) Overweight* is equal to one if the stock is ranked in the top quintile by the overweight measure. The dummy variable *Post* is equal to one for years after 2015, and 0 if otherwise. We also include a set of year dummies to examine the pre-trend. All regressions control for the logarithm of market capitalization, book-to-market, 12-month returns during the year. All regressions include firm and time fixed-effects. Standard errors are clustered at the firm level.

	High ESG Stocks		Other Stocks	
	(1) log(Annual RRI)	(2) log(Emission)	(4) log(Annual RRI)	(5) log(Emission)
High Committed Overweight \times Post	-0.266** (-2.33)	-0.250* (-1.82)	-0.250* (-1.81)	-0.0462 (-0.32)
High Nominal Overweight \times Post	-0.0886 (-0.79)	0.125 (0.91)	0.118 (0.85)	-0.0801 (-0.56)
Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
N	2959	1406	3370	1363
Adjusted R^2	0.474	0.961	0.473	0.962

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9
DGTW Characteristic-Adjusted Abnormal Returns of ESG Funds

This table analyzes the DGTW (1997) characteristic-adjusted abnormal returns of fund portfolios. In columns (1) and (2), the dependent variables are fund-level weighted DGTW (1997) characteristic-adjusted abnormal returns over the next four quarters. In columns (3) and (4), the dependent variables are weighted abnormal returns of ESG holdings and other holdings, respectively. The independent variables are ESG fund type dummies (nominal or committed funds), expense ratio, turnover ratio, the natural logarithm of total net assets, industry-concentration index (ICI), active share, past-year return and flow volatility, and past-year performance during the current quarter. All regressions include time fixed-effects. Standard errors are clustered at the fund level.

	(1)	(2)	(3)	(4)
	DGTW Excess Ret	DGTW Excess Ret	DGTW on ESG Stocks	DGTW on non-ESG Stocks
Nominal	0.682*** (5.80)			
Committed	0.769*** (4.58)	0.120 (0.71)	0.520** (2.30)	-0.062 (-0.33)
Expense Ratio	-0.001 (-0.00)	-0.118 (-0.30)	-0.572 (-1.17)	0.071 (0.16)
Turnover Ratio	0.229* (1.82)	0.594** (2.56)	0.299 (1.25)	0.669** (2.51)
Log(TNA)	0.134*** (3.37)	0.152** (2.51)	0.103 (1.40)	0.185*** (2.78)
ICI	0.105 (0.12)	0.963 (0.67)	2.561* (1.79)	0.303 (0.18)
Active Share	-1.324** (-2.38)	-2.055** (-2.38)	-6.581*** (-6.02)	0.573 (0.63)
Flow Volatility	0.392 (0.26)	-1.567 (-0.64)	-2.676 (-0.97)	0.149 (0.05)
Return Volatility	0.226* (1.92)	0.290 (1.28)	-0.019 (-0.07)	0.493** (2.05)
Past Year Return	8.026*** (7.77)	3.573* (1.78)	-0.055 (-0.03)	5.288** (2.38)
Sample	All Funds	ESG Funds	ESG Funds	ESG Funds
Time FE	Y	Y	Y	Y
N	29055	9866	9866	9866
Adjusted R ²	0.0394	0.0421	0.0818	0.0598

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10
Flows to ESG Funds

This table examines net flows into ESG funds, after controlling for fund performance and characteristics. We regress a fund's quarterly net flows, in percentage, on dummy variables indicating committed and nominal funds, respectively. The independent variables include fund performance measured by past three-year net-of-expense returns (columns 1, 3 and 5) or Carhart four-factor alphas (columns 2, 4 and 6), expense ratio, turnover ratio, the natural logarithm of the fund's total net assets, the natural logarithm of fund age, total quarterly flows into a fund's style category, and quarterly fund flows, all measured as of the prior quarter. All regressions include style and time fixed-effects. Standard errors are clustered at the fund level.

	(1)	(2)	(3)	(4)	(5)	(6)
	Flow _{t+1}	Flow _{t+1}	Flow _{t+1}	Flow _{t+1}	Flow _{t+1}	Flow _{t+1}
Nominal	0.529* (1.84)	0.468 (1.63)	0.500* (1.72)	0.528* (1.84)	0.468 (1.00)	0.268 (0.58)
Committed	0.189 (1.01)	0.150 (0.80)	0.624** (2.11)	0.659** (2.22)	-0.225 (-0.96)	-0.378 (-1.62)
Performance	7.352*** (10.85)	8.267*** (4.83)	8.730*** (9.55)	12.17*** (4.93)	7.727*** (7.36)	14.10*** (6.15)
Expense Ratio	-1.145*** (-4.08)	-1.117*** (-4.03)	-1.475*** (-4.28)	-1.258*** (-3.62)	-0.815** (-1.98)	-0.728* (-1.77)
Turnover Ratio	1.076*** (2.75)	1.163*** (2.90)	0.824* (1.84)	0.903* (1.94)	1.503** (2.15)	1.678** (2.38)
Log(TNA)	-0.440*** (-6.17)	-0.442*** (-6.28)	-0.375*** (-4.93)	-0.372*** (-4.97)	-0.537*** (-4.48)	-0.579*** (-4.91)
Log(Fund Age)	-1.000*** (-6.43)	-0.493*** (-3.36)	-1.228*** (-5.57)	-0.529** (-2.51)	-0.855*** (-4.53)	-0.377** (-2.22)
Style Flow	-0.001* (-1.67)	-0.001 (-1.34)	0.000 (0.18)	0.000 (0.44)	-0.113** (-2.17)	-0.124** (-2.38)
Flow	0.376*** (17.33)	0.371*** (17.18)	0.341*** (11.17)	0.332*** (10.85)	0.405*** (15.06)	0.387*** (14.21)
Sample	Full	Full	Post-2016	Post-2016	Pre-2016	Pre-2016
Performance measure	Return	FF4	Return	FF4	Return	FF4
Style FE	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
N	34638	34638	17735	17735	16903	16903
Adjusted R ²	0.0807	0.0820	0.0853	0.0879	0.0807	0.0842

t-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Internet Appendix

Figure A1

Histogram of the Fraction of Committed ESG Funds in ESG Families

This figure plots the histogram of the fraction of committed ESG funds in ESG families. A fund is defined as an ESG fund if its asset-based ESG score is ranked in the top tercile in a quarter. Within ESG funds, a fund is classified as a committed (nominal) ESG fund if its *Incentive to Engage* measure is in the above-median (below-median) group. A fund family is classified as an ESG family if the fraction of its ESG funds by total assets is ranked in the top tercile in a quarter. Lastly, within an ESG family, we calculate the fraction of committed ESG funds relative to all ESG funds based on total net assets and plot the histogram.

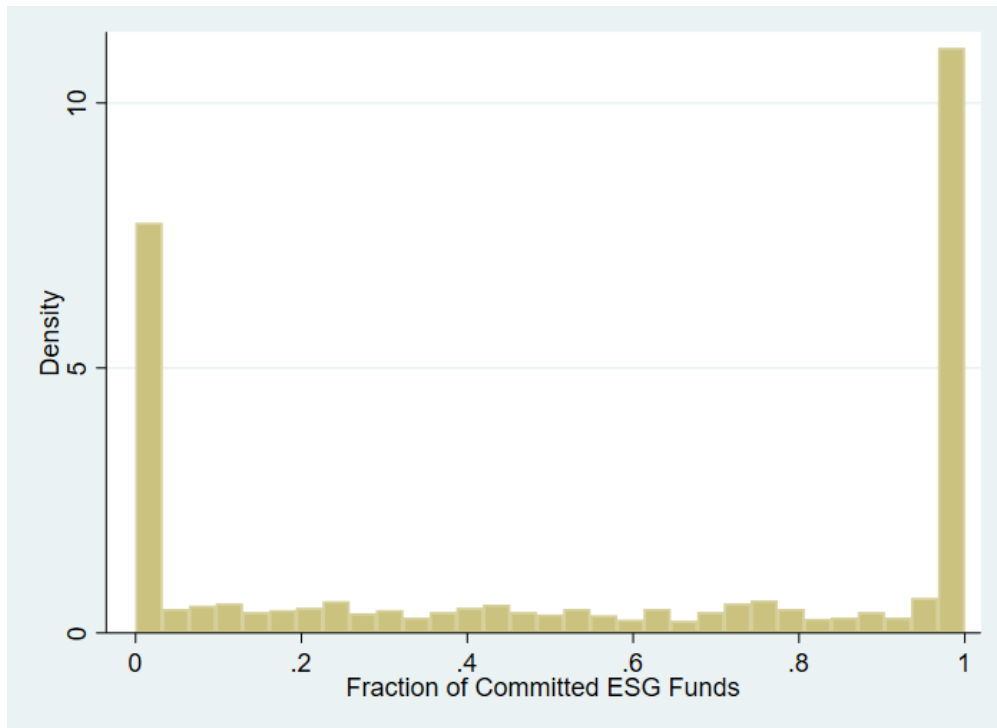


Figure A2

ESG Score Distribution across Brown and Non-brown Industries

This figure plots the MSCI ESG score distribution across brown and non-brown industries. Brown industries are defined as the ten lowest-ranked industries according to the MSCI environmental scores of individual firms within an industry as in Pastor et al. (2021).

