

# Defining Greenwashing \*

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## Abstract

We propose a precise definition of greenwashing in asset management that combines ESG self-labels, sustainability scores of portfolio holdings, and funds' voting behavior. Armed with this definition, we are able to quantify the prevalence of greenwashing in the US mutual fund industry. Although self-labeled ESG funds dominate non-ESG funds in terms of ESG ratings and voting support for ESG proposals, 24% of them are greenwashers according to our definition. Greenwashers are more likely to belong to larger and older fund families and less likely to be offered by signatories of the United Nations Principles for Responsible Investment. Importantly, while retail investors do not distinguish between greenwashers and true ESG funds, institutional investors are not deceived by the former. Our results suggest that accusations of ubiquitous greenwashing in asset management exaggerate the true extent of the problem. However, there is room for regulation aimed at enhanced ESG disclosure, at least for those funds that target retail investors.

**Keywords:** Mutual-fund disclosures; ESG labels; ESG ratings; ESG voting; UNPRI; Greenwashing; Sustainability.

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*If it's easy to tell if milk is fat-free by just looking at the nutrition label, it might be time to make it easier to tell if "green" or "sustainable" funds are really what they say they are.*

— Gary Gensler, March 1, 2022

## 1 Introduction

In 2020, an estimated USD 35.3 trillion, accounting for more than one third of worldwide assets under management, were invested according to Environmental, Social and Governance (ESG) criteria.<sup>1</sup> Surprisingly, despite the strong interest displayed by investors in sustainable investing, the industry still lacks clear standards on what sustainable investment means. This lack of clarity gives rise to the possibility that asset managers opportunistically label themselves as ESG for the purpose of attracting investors' money without actually committing to sustainable investing, a practice known as *greenwashing*. Some industry commentators have claimed that sustainable finance is "rife with greenwash" (Economist, 2021; Fletcher and Oliver, 2022). To address these concerns, since March 2021, new European Union legislation, known as Sustainable Finance Disclosure Regulation (SFDR), asks asset managers to categorize investment products as sustainable and non-sustainable and justify their choice. In May 2022, the SEC proposed a new rule that, if approved, will require funds to adopt a policy to invest at least 80% of their assets in accordance with the investment focus that the funds name suggests, such as when a funds name suggests investment in companies that meet certain ESG criteria. Another proposed SEC rule will ask funds to provide specific information on their ESG investment practices. However, without a consistent definition of what ESG investing really means, it is difficult for market supervisors to define greenwashing and punish infractors. Precisely for this reason, European regulation has been criticized as ineffective (Meager, 2021). In this paper, we propose a new definition of greenwashing in asset management that combines mutual funds' ESG disclosures with portfolios' ESG ratings and funds' voting on ESG proposals,

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<sup>1</sup>Global Sustainable Investment Review 2020 (<http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf>).

and use this definition to investigate greenwashing in the US mutual fund industry.

Greenwashing by mutual funds implies that investors' money is not managed according to their values. But greenwashing also affects the allocation of capital and thus, hampers the advancement of social, environmental and governance causes. Therefore, it is of paramount importance to know whether, beyond anecdotal evidence (e.g., Arons, 2021), mutual funds as a group misrepresent their true commitment to ESG goals.

A fund's commitment to sustainable investing has been typically judged by the ESG scores of the securities it holds in its portfolio (Liang et al., 2020; Gibson et al., 2020). For instance, Morningstar aggregates security-level ESG scores at the portfolio level to produce five sustainability ratings for mutual funds: low, below average, average, above average, or high. Hence, asset managers that claim to invest according to ESG principles but invest in firms with low ESG scores are often regarded as greenwashers. However, a managed portfolio is more than just a collection of securities. Imposing negative screens on firms with poor ESG scores is not the only way in which a fund manager can exert her commitment to sustainable investing. Moreover, divestment from *brown* firms may even be counterproductive for addressing the climate crisis, as sold assets often end up in the hands of opaque private-equity firms (Economist, 2022). Also, if divestment leads to firm liquidation, this will result in layoffs and a reduction in supply of energy and other products, both of which have negative social consequences. Instead, funds can act as activist investors and attempt to improve firms' practices. For instance, they can vote in favor of proposals related to firms' ESG policies. Naturally, ESG activist investors will often hold securities issued by firms with poor ESG ratings precisely because improving those ratings is their goal. Labelling such funds as greenwashers is wrong.

To illustrate this idea, consider a large mutual fund that claims to have an ESG orientation: Calvert US Large-Cap Value Responsible Index Fund. This fund is part of the Calvert Research and Management family, a pioneer of socially responsible investment, which uses engagement to improve companies' performance on ESG issues (Norton, 2021). Although Calvert US Large-Cap Value Responsible Index Fund fund received a below-average Morningstar sustainability rating in February and March 2020, the fund supported 80.2% of ESG-related resolutions proposed by shareholders in 2020. In contrast, the median fund in our dataset covering the 2016-2020 period voted in favor of ESG initiatives only 44% of the time. It does not seem

sensible to conclude that this fund is a greenwasher simply because it holds in its portfolio stocks of firms with low sustainability ratings.

An additional challenge when evaluating the prevalence of greenwashing is determining which funds market themselves as ESG investment products, especially if regulation does not require managers to declare funds as ESG, as is the case in the US. Prior research on ESG funds has relied on lists of funds managed by members of socially responsible investment associations (e.g., Renneboog et al., 2008; Gil-Bazo et al., 2010). Such lists are incomplete and may suffer from selection bias. Alternatively, recent studies have used the names of signatories of the United Nations Principles of Responsible Investments (UNPRI) (Liang et al., 2020; Kim and Yoon, 2022; Gibson et al., 2020). While these studies are informative about the true level of commitment of signatory asset management firms, not all funds within an asset management firm are marketed as ESG.

Our definition of greenwashing addresses both challenges. First, we define a fund as self-labeled ESG if either its name or its investment objective, as stated in the fund's prospectus, contains terms that denote an ESG-related orientation. Throughout the paper, we refer to these funds as self-labeled ESG funds. Second, we combine funds' ESG ratings with data on funds' voting support for ESG proposals, as a proxy of funds' activism. More specifically, we define a greenwasher as any ESG fund that receives low, below average or average Morningstar sustainability ratings *and* does not vote in support of at least 70% of ESG initiatives proposed by shareholders in one year. The Morningstar sustainability ratings are particularly useful for the purpose of identifying deceptive behavior because we know that mutual investors strongly relied on this particular metric for evaluating a fund's ESG quality when they were first released in 2016 (Hartzmark and Sussman, 2019). We choose the 70% voting support threshold because it is the median of ESG funds' voting support for ESG proposals. In robustness tests, we consider other thresholds, 60% and 80%, which are approximately the top tercile and top decile of the voting distribution, respectively. In essence, according to our definition, a greenwasher is a mutual fund that *claims* to invest according to ESG investment principles but whose claim is not substantiated by the ESG performance of the securities it holds or by its actions to influence firms' ESG policies.

Armed with a precise definition of greenwashing, we study how prevalent greenwashing is

among US mutual funds in the period from 2016 to 2020. We first show that funds self-labeled ESG funds have higher ESG ratings and vote more frequently in favor of ESG initiatives. More specifically, more than 60% of self-labeled ESG funds receive above average or high Morningstar sustainability ratings and only 16% of them have below average or low ratings. In contrast, 40% of non-ESG funds receive above average or high Morningstar sustainability ratings and 25% are rated as below average or low. Regression analysis shows that the association between ESG labels and sustainability ratings is not subsumed by fund and fund-family characteristics. Results are consistent across broad fund classes—including equity and fixed-income funds as well as domestic and international funds— and across the three ESG dimensions. Also, ESG-labeled funds are more likely to vote in favor of environmental and social initiatives, as well as governance initiatives proposed by shareholders, than non-ESG funds. Differences in voting are particularly large in environmental and social resolutions.

However, not all self-labeled ESG funds are committed to sustainable investing. According to our definition, 31 funds out of 130 ESG funds in our sample are greenwashers. Therefore, 23.8% of funds that claim to invest according to ESG principles neither hold securities that result in above average or high sustainability ratings nor vote in support of more than 70% of firms' ESG initiatives. In terms of assets under management, greenwashers account for 30.2% of all assets in ESG funds. The fact that one quarter of investors' money in ESG funds is not managed in a manner consistent with ESG principles justifies concerns by regulators and market commentators. However, claims of ubiquitous greenwashing in the asset management industry seem an exaggeration in light of these numbers.

To understand the motives for greenwashing and, at the same time, provide investors and market supervisors with hints on where to look for it, we study how the likelihood of greenwashing depends on fund and fund-family characteristics. Greenwashers are more frequently found in larger and older assets management companies. Importantly, mutual funds in fund families that are signatories of the United Nations Principles for Responsible Investment (UNPRI) are 33% less likely to greenwash.

In 2018, Morningstar granted an ESG label to funds that its analysts considered as such. However, in January 2020, Morningstar removed the ESG label from funds managing over \$1 trillion as it found they did not meet adequate environmental, social and governance standards.

We find that funds that lost their label were indistinguishable from funds that we classify as non-ESG funds in terms of ratings. Also, they showed little voting support for ESG initiatives. These findings raise questions on why those funds received an ESG label in the first place. Importantly, none of the funds that we classify as greenwashers and which had a Morningstar ESG label in December 2019 lost it in the January 2020 revision.

Finally, we ask whether investors are able to distinguish between greenwashers and true ESG funds. In flow regressions, we find that true ESG funds receive more inflows of investors' money than otherwise similar non-ESG funds. In contrast, inflows to greenwashers are significantly lower than those of non-ESG funds. This effect is driven by institutional investors. While retail investors do not discriminate between true ESG funds and greenwashers, institutional investors appear to be able to identify greenwashers and show a strong preference for *true* ESG funds.

Our results carry important implications for the debate on the costs and benefits of regulating ESG disclosures. Compliance with detailed disclosure requirements is costly and this burden is particularly heavy for smaller asset management companies. Our results suggest that even without regulated ESG disclosures, our ESG label extracted from mutual funds' prospectuses is informative about both ESG ratings and funds' voting on ESG proposals. Although 40% of funds that claim to be ESG receive low, below average, or average sustainability ratings, according to our definition, which also considers the voting decisions of on ESG proposals, only 24% of mutual funds that market themselves as ESG can be reasonably regarded as greenwashers. Moreover, funds that target institutional investors seem pressured to avoid greenwashing. Therefore, our results suggest that regulatory efforts should focus on funds that target retail investors.

Our paper contributes to an emerging literature that studies whether institutional investors that have signed the UNPRI pledge "walk the talk," i.e., they invest according to ESG principles (Gibson et al., 2020; Kim and Yoon, 2022; Liang et al., 2020). Gibson et al. (2020) show that UNPRI signatories outside the US have better aggregate portfolio ESG scores than those of non-signatories. However, they also find that UNPRI signatories in the US do not have better ESG scores than non-UNPRI institutions, and in fact, ESG scores of signatories that do not report any form of ESG incorporation are even *worse* than those of non-signatories, which the authors interpret as evidence of greenwashing. Similarly, Kim and Yoon (2022) find that

UNPRI signatories do not improve fund-level weighted average ESG scores after endorsement. They do not find evidence, either of ESG engagement or voting, and also conclude that UNPRI signatories engage in greenwashing. Finally, Liang et al. (2020) find that hedge fund signatories underperform non-signatories in terms of risk-adjusted returns. Such underperformance is fully driven by hedge funds with low ESG scores. The authors interpret this evidence as consistent with agency problems leading some hedge funds to both underperform and engage in greenwashing. Consistently with those studies, we find that US mutual funds managed by UNPRI and non-UNPRI signatories receive similar ESG ratings. We find no differences, either, in voting support for ESG initiatives. However, we show that mutual funds managed by UNPRI signatories are significantly *less* likely to manage greenwashers than non-signatories. Therefore, while the mere fact of signing UNPRI does not lead to more ESG-oriented investment by US asset managers, it does appear to deter asset managers from offering funds that falsely claim to be ESG in their prospectuses.

Our paper also contributes to a recent literature that attempts to understand whether ESG funds vote according to their advertised goal and fiduciary responsibility. Dikolli et al. (2021) and Michaely et al. (2022) investigate whether funds voting behaviour is consistent with their stated mandate. Dikolli et al. (2021) show that the ESG funds (funds classified by Morningstar as Sustainable Investment Overall) are no more likely than other mutual funds to support shareholders proposals, and that the type of proposal is determinant (ES proposals are less likely than G proposals to receive votes in support from ESG and non-ESG funds). Michaely et al. (2022) show that ES funds support many ES proposals, and that their support is higher than that of non-ES funds. However, when ES funds belong to non-ES families, ES funds support the ES proposals that pass or fail by large margins, but their vote is more aligned with their families preferences when the proposal is close to the majority threshold.

More generally, our paper contributes to a broad literature concerned with the effect of Corporate Social Responsibility (CSR)/ESG on shareholder value and risk (Fatemi et al., 2015; Ferrell et al., 2016; Fernando et al., 2017; Dumitrescu and Zakriya, 2021), expected returns (Pedersen et al., 2021; Pástor et al., 2021) and the performance of CSR/ESG mutual funds (Renneboog et al., 2008; Gil-Bazo et al., 2010; Nofsinger and Varma, 2014; El Ghouli and Karoui, 2017).

## 2 Data

### 2.1 Morningstar Mutual Fund Sustainability Ratings, Scores and Proxy Voting Records

On March 1, 2016, Morningstar introduced the Morningstar Sustainability Ratings for mutual funds portfolios.<sup>2</sup> The objective is to help investors gauge how well the companies held in a fund perform on environmental, social, and governance issues relative to the portfolios peer group. Morningstar sustainability ratings have been used in academic research by Hartzmark and Sussman (2019) and Gantchev et al. (2021).

To compute sustainability ratings, Morningstar first calculates a portfolio sustainability score as an asset-weighted average of company-level ESG scores, as provided by Sustainalytics. Initially, Sustainalytics gave each company a score in terms of a number of indicators measuring the firm's preparedness, disclosure, and performance in each of the three ESG pillars. Based on their Morningstar portfolio sustainability score, funds are assigned percent ranks within their Morningstar category and a sustainability rating is assigned depending on this rank. More specifically, Morningstar assigns 1, 2, 3, 4, or 5 globes, to funds ranking in the 0-10, 10-32.5, 32.5-67.5, 67.5-90, and 90-100 percentile buckets, respectively. Throughout the paper, we follow Morningstar's nomenclature and refer to globes 1, 2, 3, 4, and 5, as "low," "below average," "average," "above average," and "high," respectively.

Since August 2018, a fund's Morningstar sustainability rating is computed using its historical portfolio sustainability score, defined as the 12-month weighted moving average of the fund's portfolio sustainability score. Also, the Morningstar global category is used to determine the fund's peer group.<sup>3</sup> Unfortunately, old Morningstar sustainability ratings before August 2018 became unavailable after the methodology change in 2018. However, Morningstar portfolio sustainability scores are still provided for each portfolio and pillar. We use these portfolio sustainability scores to recover portfolio sustainability ratings for the missing period following

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<sup>2</sup>Complete details and methodology of the initial launch can be found at <https://newsroom.morningstar.com/newsroom/news-archive/press-release-details/2016/Morningstar-Introduces-Industrys-First-Sustainability-Rating-for-20000-Funds-Globally-Giving-Investors-New-Way-to-Evaluate-Investments-Based-on-Environmental-Social-and-Governance-ESG-Factors/default.aspx>

<sup>3</sup>Complete documentation can be found at <https://www.morningstar.com/content/dam/marketing/shared/Company/Trends/Sustainability/Detail/Documents/Morningstar-Sustainability-Rating-Methodology-0916.pdf?con=10356>

the methodology described in Morningstar (2016).

In September 2019, company-level ESG scores were replaced with Sustainalytics new ESG Risk Ratings (Pelizzon et al., 2021).<sup>4</sup> Sustainalytics ESG Risk Ratings measure the degree to which a company's economic value is at risk driven by ESG factors.

To obtain funds' voting records, Morningstar collects data from the SEC N-PX filings, and standardizes votes in all shareholder-initiated resolutions and all management-initiated resolutions for a given fund and year under the following classification: % support, % against and % abstained. Table 2 reports the different types of resolutions that are considered as ESG-related.

## **2.2 Mutual Fund Prospectus Risk/Return Summary**

We retrieve historical fund names and investment objectives of US domiciled open-end funds from the US SEC Mutual Fund Prospectus Risk/Return Summary Data Sets, which provides text and numeric information extracted from the risk/return summary section of mutual fund prospectuses at the quarterly frequency for the period 2011:Q1 - 2020:Q4. To determine disclosure of an ESG-related name or investment objective, we examine text-based ESG variables in fund names and investment objectives. To avoid ambiguous interpretations other than ESG, we manually verify all ESG-related strings extracted convey valid ESG information. Table 1 reports our selection of ESG-related strings with exclusion of ambiguous interpretations.

## **2.3 Risk-adjusted Returns**

Since mutual funds in our sample hold domestic as well as international equity and fixed income assets, we estimate risk-adjusted performance of mutual funds using global stock and bond market factors. We use the five stock factors of Fama and French (2015) (market, size, value, investment and profitability) augmented with momentum. We also add a term factor and a default factor to account for exposure to bond risk. The term factor is the difference between monthly returns of long-term and short-term government bond index and the default factor is the difference between monthly returns of mid-term defaultable and default-free bond index.

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<sup>4</sup>Complete documentation can be found at [https://www.morningstar.co.uk/static/UploadManager/Assets/SustainabilityRatingMethodology\\_2019\\_Final.pdf](https://www.morningstar.co.uk/static/UploadManager/Assets/SustainabilityRatingMethodology_2019_Final.pdf)

Regional stock market factors are downloaded from Professor Kenneth French’s data library.<sup>5</sup> Bond indices used to compute the bond risk factors are obtained from Morningstar, as explained in Table 3. Following Ferreira et al. (2012), we compute global factors as value-weighted averages of the corresponding regional market capitalization, which we download from Professor Bryan Kelly’s website.<sup>6</sup> To estimate the funds’ monthly risk-adjusted return (alpha), we first regress the previous 36 months of fund excess returns on the factors and store the estimated factor loadings (betas). We require at least 24 months of non-missing returns. Monthly alpha is the difference between the fund’s excess return and the product of factor realizations and betas estimated over the previous 36 months.

## 2.4 UNPRI Signatories

We download the list of asset management companies who have become signatories of the United Nations Principals of Responsible Investment (UNPRI) by the end of 2020. As first explored by Gibson et al. (2020), UNPRI signatories commit to following six ESG-related principles and disclosing their responsible investment policies annually.<sup>7</sup>

## 2.5 Sample Construction

Fund and asset management company characteristics come from Morningstar Direct. The data include information on total net assets (TNA) under management, fund’s inception date, investment category, returns, expense ratios, and Morningstar “star” ratings for performance (see Evans and Sun, 2021, for a recent analysis of this variable).

Our sample period starts from March 2016, when Morningstar first started to publish sustainability scores and ratings, and ends in December 2020. We restrict the sample to US domiciled open-end mutual funds with Morningstar sustainability scores and ratings. We further restrict the sample to funds with non-missing historical names and investment objectives, as well as Morningstar sustainability ratings. We use historical fund names and trading symbols to match the Morningstar data to the Prospectus Risk/Return Summary

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<sup>5</sup>[https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)

<sup>6</sup><https://www.bryankellyacademic.org/>

<sup>7</sup><https://www.unpri.org/>

dataset.<sup>8</sup> We also match PRI signatory data to asset management companies in the Morningstar database.

We conduct the analysis at the fund level. Fund size (TNA) and dollar flows are aggregated from share classes of the same fund. Fund flows are measured as monthly dollar flows divided by TNA at the end of the prior month. Gross expense ratio and risk-adjusted returns are weighted-averages across all share classes. Fund institutional ratio is defined as the fraction of asset held by institutional investors. Morningstar star fund ratings and Morningstar category are those of the largest share class, and fund age (in months) is calculated from the inception date of the fund's oldest share class. Management company age (in months) is calculated from the oldest share class of the management company. Management company size is the sum of TNA across all open-end funds managed by the company. Morningstar environmental, social and governance scores are in percentage points.<sup>9</sup>

We keep observations with valid Morningstar sustainability ratings, prospectus names and objectives, fund size, monthly fund flows, fund star ratings, monthly returns, gross expense ratios and management company. We restrict fund assets under management to being larger than or equal to \$10 million. Following Hartzmark and Sussman (2019), we winsorize all continuous variables at the 1% and 99% levels. The final sample includes 2,039 unique funds and 75,298 fund-month observations. Among those funds, 130 label themselves as ESG at some point in time.<sup>10</sup> Table 4 provides summary statistics of fund and asset management company characteristics for ESG funds and non-ESG funds at the fund-month level.

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<sup>8</sup>Since trading symbols are assigned at the share-class level and prospectuses are updated quarterly, the matching process is divided into three steps. First, as long as one share class within a fund in the Morningstar database is matched with a prospectus by the trading symbol in a given month, we extend the prospectus names and investment objectives to all share classes within this fund in that month because all share-classes within a fund have the same fund names and investment objectives. Second, for funds in the Morningstar database not matched by trading symbols for any of their share classes, we search their fund names which are the same as share class names in prospectus, excluding the part of the name that makes reference to the share class (e.g., A, B, C, institution, load waived, etc.). Third, in the months without prospectus we use names and investment objectives reported the most recent month. From March 2016 to December 2020, we have 147,697 fund-month observations with valid Morningstar sustainability ratings before merging with prospectus data. Merging with prospectus data yields 80,848 fund-month observations with valid fund names and investment objectives, before other filters are applied.

<sup>9</sup>Since Morningstar adopted ESG risk score instead of old ESG score in September 2019, we rescale new environmental, social or governance risk scores published after September 2019 by 100 minus it to form consistent environmental/social/governance scores. After rescaling, higher scores indicate better performance.

<sup>10</sup>By our definition, a fund can be an ESG fund and a non-ESG fund at different time periods because of changes in names and investment objectives.

## 3 Ratings, voting behavior, and prevalence of greenwashing

### 3.1 ESG funds and ESG ratings

In this section, we first compare the sustainability ratings of ESG funds with those of non-ESG funds. We then explore differences in the voting activity of ESG and non-ESG funds in terms of support of ESG proposals initiated by shareholders. Finally, we introduce our definition of greenwashing and quantify its prevalence in the US mutual fund industry.

Table 5 displays the distribution of Morningstar sustainability ratings in globes, for fund-month observations of ESG and non-ESG funds.<sup>11</sup> The table shows that 61.45% of ESG funds have above average or high sustainability ratings (4 or 5 globes) and only 16.19% have below average or low sustainability ratings (1 or 2 globes). In contrast, 40.38% of non-ESG funds receive above average or high ratings while 25.16% have below average or low sustainability ratings. Therefore, self-labeled ESG funds have better ESG ratings on average.

As mentioned in the introduction, previous studies have used UNPRI pledge to identify asset managers commitment to ESG goals (Gibson et al., 2020). Panel B of Table 5 compares ESG ratings of funds in signatory fund families with those of non-signatory families. Although funds in UNPRI signatories are more (less) likely to receive higher (lower) ratings than funds managed by non-signatory asset management companies, differences are much smaller than those between ESG and non-ESG funds. For instance, 44.01% of funds in signatory families receive above average or high ratings, as opposed to 37.35% of non-signatories.<sup>12</sup>

Table 5 shows that self-labeled ESG funds have higher sustainability ratings. It is also useful to know whether our ESG label is informative about a fund's ESG ratings beyond and above the information that investors can already infer from other fund traits. To answer this question, we investigate differences in the distribution of sustainability ratings between ESG and non-ESG funds controlling for fund and asset management company characteristics.

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<sup>11</sup>Note that the distribution of ratings for the whole sample differs from the theoretical distribution. For instance, by construction 10% of funds receive 1 globe and 10% of funds receive 5 globes. This is due to the fact that our sample excludes funds not meeting the filtering criteria (funds that cannot be matched with data on fund prospectuses, funds domiciled outside the US, ETFs, closed-end funds, and small funds)

<sup>12</sup>Gibson et al. (2020) show that the aggregate portfolios of UNPRI signatories in the US have similar, if not *worse*, ESG ratings than non-signatories. Note that we focus on mutual funds while Gibson et al. (2020) investigate the aggregate portfolios of all types of institutional investors. Also, our sample covers a more recent period than the period studied by those authors (2016-2020 vs. 2003-2017).

In particular, we estimate the following multinomial logit model:

$$\begin{aligned} Pr(Rating_{f,t,k}) &= Pr(Rating_{f,t} = k | \mathbf{ESG}_{f,t-1}, \mathbf{X}_{f,t-1}; \boldsymbol{\beta}_k, \boldsymbol{\delta}_k) \\ &= \frac{\exp\{\alpha_k + \boldsymbol{\beta}_k \mathbf{ESG}_{f,t-1} + \boldsymbol{\delta}_k \mathbf{X}_{f,t-1,k}\}}{\sum_{j=1}^5 \exp\{\alpha_j + \boldsymbol{\beta}_j \mathbf{ESG}_{f,t-1} + \boldsymbol{\delta}_j \mathbf{X}_{f,t-1,j}\}}, \quad \text{with } k \in \{1, 2, 3, 4, 5\}, \end{aligned} \quad (1)$$

where  $Pr(Rating_{f,t,k})$  denotes probability of Morningstar sustainability rating of fund  $f$  in month  $t$  equal to  $k$ , and  $\mathbf{ESG}_{f,t-1}$  is an indicator variable that takes the value of 1 if mutual fund  $f$  has an ESG label in month  $t - 1$  and zero otherwise.  $\mathbf{X}_{f,t-1,k}$  is a vector of control variables that includes fund  $f$ 's size (log of assets under management), fund age (log of the number of months), number of Morningstar stars for mutual fund performance, expense ratio, flow in the previous 12 months, fund risk-adjusted returns estimated as described in Section 2, as well as size and age of the fund's asset management company.

Table 6 reports the estimated coefficients in equation (1). In Panel A, the sample contains all funds. Consistent with the unconditional analysis, a fund's ESG label, as inferred from the fund's prospectus, is positively associated with higher sustainability ratings. In particular, ESG funds are significantly more likely to receive 4 and 5 globes than non-ESG funds. In Panel B, we split the sample into three subsamples by broad investment category: fixed income and allocation funds, domestic equity funds, and international equity funds. Overall, there is a positive association between a fund claiming to be ESG and its sustainability ratings. The only exception is the finding that domestic equity funds are slightly more likely to have below-average sustainability ratings (2 globes) than average ratings (3 globes, omitted outcome), relative to non-ESG funds.

Table 7 reports the fitted probabilities and marginal effects of the ESG label on Morningstar sustainability ratings. Consistently with the unconditional analysis of Table 5, a mutual fund with average values for its characteristics has a 63.2% (31.2% + 32%) predicted probability of receiving above average or high ratings if it is ESG according to its prospectus and only a 41.2% (28.4% + 12.8%) probability, otherwise. The 22% difference in probability is statistically significant. The model also predicts that an ESG fund with average characteristics has 10% (4.1% + 5.9%) significantly lower probability to receive below average or low ratings than a non-ESG fund. The predictive ability of ESG label with respect to ratings holds across different

subsamples and is stronger for fixed-income and allocation funds: ESG funds are 34% more likely than non-ESG funds to have above average or high ratings and 35.6% less likely to receive below average or low ratings than otherwise similar non-ESG funds.

While funds that we identify as ESG have superior sustainability ratings, it is unclear whether they outperform in all the pillars, E, S, or G. To answer this question, we regress the portfolio sustainability score in each dimension separately on the ESG indicator and on fund and fund family characteristics. In particular, we estimate the equation:

$$Z\_Score_{i,f,t} = \alpha_i + \beta_i ESG_{f,t-1} + \boldsymbol{\delta}_i \mathbf{X}_{f,t-1} + \gamma_{t,s} + \varepsilon_i, \quad (2)$$

where  $Z\_Score_{i,f,t}$  denotes the Morningstar disaggregated sustainability score in pillar  $i \in \{E, S, G\}$  of fund  $f$  in month  $t$  standardized with respect to all funds in the same month and in the same category as fund  $f$ ,  $\mathbf{X}_{i,f,t-1}$  is a vector of fund and asset management company controls, and  $\gamma_{t,s}$  captures month  $\times$  Morningstar category fixed effects. Table 8 reports estimation results. In the full sample, ESG funds have significantly higher score in each of the three pillars than otherwise similar funds. In particular, the environmental, social, and governance scores of ESG funds are 0.229, 0.344 and 0.301 standard deviations higher than those of otherwise similar ESG funds. However, if we focus on fixed income and allocation funds, the superiority of ESG funds manifests itself only in the environmental score. ESG domestic equity funds outperform non-ESG funds in all three dimensions. Finally, ESG international equity funds dominate non-ESG funds in the social and governance pillars.

### 3.2 ESG funds and voting on ESG proposals

We argue that the sustainability rating of a fund’s holdings does not tell the full story about the fund’s commitment to sustainable investment. Asset managers who want to make an impact will often invest in firms where they believe there is room for improvement. Consequently, sustainability ratings alone are insufficient to detect greenwashing. We also need to look at the the actions that asset managers take in order to influence firms’ ESG policies. While many of those actions are unobservable to researchers, we know how each mutual fund votes on ESG issues.

In Table 9 we compare the voting support for ESG-related initiatives by ESG and non-ESG funds. More specifically, the table shows the average percentage of annual votes in favor of all shareholder-initiated proposals, manager-initiated proposals, and shareholder-initiated proposals classified as either “environmental and social” or “governance.” On average, ESG funds support shareholder-initiated proposals 58.6% of the times they vote, while non-ESG funds’ support for shareholder-initiated proposals is only 36.6%. This large difference is also statistically significant. Conversely, ESG funds are less likely than non-ESG funds to support manager-initiated proposals (83.4% vs. 94.8% support). The difference in average support for environmental and social resolutions between ESG and non-ESG funds is even more striking. While ESG funds support E&S initiatives in 65.7% of their votes, non-ESG funds only vote in favor of E&S initiatives 33.5% of the time. Finally, ESG funds also tend to vote more in favor of governance proposals initiated by shareholders than non-ESG funds (64.9% vs. 49.4%).

Figure 1, plots the cumulative distribution function of funds’ annual voting support in each category for both ESG and non-ESG funds. The graphs show that the distribution of ESG funds’ votes in support of shareholder-initiated proposals is not only higher on average, as seen in Table 9, but it dominates that of non-ESG funds in a first-order stochastic sense. Stochastic dominance is even more apparent for environmental and social initiatives, and slightly less clear for governance initiatives.

In sum, our ESG labels are not just positively correlated with the sustainability ratings of holdings in funds’ portfolios but also with voting support for ESG proposals.

### **3.3 How many greenwashers are there?**

Our definition of greenwashing takes into account both the sustainability ratings of portfolio holdings and the voting behavior exhibited by the fund, and is based on two premises that we think are reasonable. First, an ESG fund that invests in securities with *good* (above average and high) sustainability ratings cannot possibly be characterized as a greenwasher. Second, if an ESG fund invests in securities with average, below average, or low sustainability ratings, the fund is either trying to make an impact or is a greenwasher. To disentangle between the two possibilities, we check whether the fund cares about ESG by voting most of the time in favor of ESG initiatives proposed by shareholders.

More specifically, we define a fund as a greenwasher if it meets the three following conditions:

1. The fund claims to invest according to ESG considerations;
2. The fund's Morningstar sustainability rating is strictly below 4 globes (low, below average and average); and
3. Less than 70% of the fund's annual votes on shareholder-initiated ESG proposals support the resolution.

The 70% support vote threshold is the median of ESG funds' voting support for ESG proposals and the top quintile of all funds' voting support. In addition to a 70% minimum voting support threshold, we also consider the 60% and 80% thresholds.

We take this definition to our data and compute the number of fund-year observations that correspond to greenwashers and non-greenwashers (true ESG funds). We also compute the number of unique funds in either subsample. Since a very small number of funds switch from one subsample to the other, for the purpose of this calculation, we consider a fund as a greenwasher if it meets the definition criteria at least once in our sample period. Finally, we compute the total assets under management of funds in each month for each group of funds and calculate the average across all months in the sample period.

The results are reported in Table 10. According to our definition, 31 ESG-labeled funds in our sample are greenwashers at least once during the sample period while 99 funds are truly ESG. Therefore, 23.8% of ESG funds in our sample are greenwashers. Greenwashers account for 21.3% of all ESG fund-year observations and 30.2% of all assets under management in ESG funds. Our conclusions do not vary substantially if we change the minimum voting support threshold to 60% or 80%.

These numbers suggest that greenwashing indeed takes place in the US mutual fund industry: The ESG claims of almost 1 in 4 US mutual funds are very hard to justify on the basis of the securities they hold or their voting decisions on firms' ESG policies. At the same time, the results in Table 10 also suggest that, contrary to claims that asset management is "rife with greenwash," such behavior is the exception rather than the rule.

## 4 Who are the greenwashers?

The results in section 3 suggest that some funds appear to engage in a deceptive behavior that goes against their investors' preferences. In this section, we investigate whether greenwashers differ from true ESG funds in terms of their observable characteristics. This is a useful exercise not only for understanding the potential motives for this behavior, but also from a practical perspective, as any patterns in the data can help both investors and regulators allocate their monitoring efforts more efficiently.

To identify the characteristics of greenwashers, we estimate the following logit regression:

$$\begin{aligned} & Pr(\textit{Greenwasher}_{f,t}) \\ &= Pr(\textit{ESG}_{f,t} = 1 \cap \textit{Rating}_{f,t} \leq 3 \cap \textit{ESG\_Support}_{f,t} \leq 70\% | \textit{UNPRI}_{f,t-1}, \mathbf{X}_{f,t-1}; \beta_1, \boldsymbol{\delta}) \quad (3) \\ &= \frac{\exp\{\alpha + \beta_1 \textit{UNPRI}_{f,t-1} + \boldsymbol{\delta} \mathbf{X}_{f,t-1}\}}{1 + \exp\{\alpha + \beta_1 \textit{UNPRI}_{f,t-1} + \boldsymbol{\delta} \mathbf{X}_{f,t-1}\}}, \end{aligned}$$

where  $Pr(\textit{Greenwasher}_{f,t})$  denotes probability of an ESG fund  $f$  in month  $t$  being a greenwasher according to our definition, that is, an ESG fund with one, two or three globes in sustainability ratings, and less than 70% support for shareholder-proposed ESG initiatives. We also report results for the 60% and 80% support thresholds.  $\textit{UNPRI}_{f,t-1}$  is an indicator variable that takes the value of 1 if mutual fund  $f$  is managed by a UNPRI signatory in month  $t - 1$  and zero otherwise.  $\mathbf{X}_{f,t-1}$  is a vector of control variables that includes fund characteristics as well as asset management company characteristics that are likely to affect funds greenwashing activities. The sample is restricted to funds that self-label as ESG any time in our sample period.

Table 11 reports estimation results. Recent flows of new money to the fund are negatively associated with greenwashing. None of the other fund-level characteristics predict greenwashing. In contrast, asset management characteristics are all strongly and significantly associated with greenwashing, which suggests that the decision to market funds as ESG despite no commitment with ESG investing is taken at the asset management company level. More specifically, asset managers that are UNPRI signatories are significantly less likely to engage in greenwashing. Also, greenwashing is more prevalent among larger and older asset management firms. To gauge the economic significance of these associations, Table 12 reports marginal effects. If we focus on

the 70% threshold definition for greenwashing, a one standard deviation increase in annual flow (57.62%) reduces the probability of greenwashing by 5.76% ( $=57.62 \times 0.001$ ). Mutual funds in UNPRI signatories are 33.5% less likely to greenwash than funds in non-signatory fund families. A one standard deviation increase in the (log of) management company's AUM for ESG funds in our sample (2.63) increases the probability of an ESG fund being a greenwasher by 14.2% ( $=2.63 \times 0.054$ ). Finally, a one standard deviation increase in the log of the management company's age in months (0.16) increases the probability of an ESG fund being a greenwasher by 18% ( $=0.16 \times 1.127$ ).

Our finding that UNPRI signatories are less likely to greenwash is important because, as mentioned in the Introduction, previous studies has failed to provide evidence supporting the commitment of UNPRI signatories in the US with ESG investing (Gibson et al., 2020; Kim and Yoon, 2022; Liang et al., 2020). While it is true that funds managed by UNPRI signatories are not better than those managed by non-UNPRI signatories in terms of ratings or voting support also in our sample, individual mutual funds that claim to invest according to ESG principles are more likely to live up to this claim if they are managed by an UNPRI signatory. In other words, the mere fact that an asset management firm pledges to the sustainable investment principles does not guarantee that its funds will invest more in accordance with those principles. However, it does increase the probability that its individual funds will truthfully claim to invest according to ESG considerations.

## 5 Morningstar ESG labels

In 2018, Morningstar introduced its ESG label for mutual funds, which is intended to identify funds that incorporate ESG criteria throughout the investment process. A total of 614 unique funds in our sample receive the Morningstar ESG label. This number is substantially larger than our estimate of 130 funds that claim to invest according to ESG principles. However, in January 2020, Morningstar decided to strip many funds off their ESG labels upon suspicions of widespread greenwashing. According to Morningstar, sustainability tags were taken off from “funds that say they consider ESG factors in the investment process, but that don't integrate them in a determinative way for their investment selection” (Schwartzkopff and Kishan, 2022).

In our sample, 367 funds lost their Morningstar ESG label. In this section, we investigate whether in the process of refining their ESG label, Morningstar analysts were able to spot funds that we identify as greenwashers.

Panel C of Table 5 displays the rating distribution for funds labeled as ESG by Morningstar in December 2019 split in two subsamples: those that kept their label in the January 2020 revision and those that lost it. The table suggests that poor ratings are a strong predictor of a fund being stripped off its ESG label. In particular, 62.3% of observations of funds that lost their ESG labels had less than 4 globes in December 2019, as opposed to only 43.5% of observations of funds that kept their label. Interestingly, the distribution of sustainability ratings among funds that retained their ESG label closely resembles that of the funds that we identify as ESG based only on the information provided in their name or investment objective. However, the fact that many funds that lost their ESG label had good sustainability ratings and many funds that kept their ESG label had poor sustainability ratings, suggests that analysts used other criteria in their decisions.

In Table 13, we explore whether the decision to remove ESG labels was related to funds' voting support. In particular, we compare the 1st, 2nd, and 3rd quartiles of the distribution of voting support for ESG resolutions in 2019 of funds with 1-3 globes that kept their label with that of funds with 1-3 globes that lost theirs. Similarly, we compare funds with 4 and 5 globes that lost the label to those with 4 and 5 globes that kept it. Funds that lost their label exhibited substantially lower voting support for ESG resolutions. In particular, the median fund with 1-3 globes that kept its label voted 80% of the times in favor of ESG resolutions during 2019 (1st and 3rd quartiles of the voting support distribution are 34.7% and 99.2%, respectively). In contrast, the median fund with similar ratings that lost their label voted only 42.1% of the times for ESG resolutions (1st and 3rd quartiles are 21.8% and 66.7%, respectively). The voting support distributions are not too different for funds with good ratings. In this group, median support was 88.9% for funds that kept their label and 50% for those that lost it.

The evidence is consistent with a shift in Morningstar's ESG classification towards considering both Morningstar sustainability ratings and voting support for ESG resolutions. However in December 2019, out of the 13 funds that were classified at the time as greenwashers according to our definition, 10 had a Morningstar ESG label, and none of them lost the label in

January 2020. We conclude that either Morningstar analysts missed these funds or they used other criteria to evaluate their commitment to ESG investment.

## 6 Can investors spot greenwashers?

Results in section 3 suggest that only a minority of mutual funds' ESG claims are not justified by their portfolio choices or their actions. This observation raises the question of why not more asset managers engage in greenwashing given investors' growing appetite for sustainable investing and the fact that market supervisors cannot punish such behavior. In this section, we explore the possibility that investors, and more specifically, sophisticated investors, are able to spot greenwashers.

To test our hypothesis, we study the net inflows of investors' money to mutual funds. In doing so, we distinguish among 4 types of mutual funds: (1) non-ESG mutual funds with average, below-average or low Morningstar sustainability ratings (1-3 globes) and voting support for shareholder-proposed ESG initiatives below 70%; (2) ESG funds with average, below-average or low Morningstar sustainability ratings and voting support for shareholder-proposed ESG initiatives below 70% (i.e., greenwashers); (3) all other ESG funds (i.e., true ESG funds); and (4) all other non-ESG funds. We then regress monthly mutual fund flows on indicator variables for each type of fund:

$$Flow_{f,t} = \alpha + \sum_{k=1}^3 \beta_k \mathbb{1}_{(Fund\_Type_{f,t-1}=k)} + \delta \mathbf{X}_{f,t-1} + \gamma_{t,cat} + \varepsilon_{f,t}. \quad (4)$$

where  $Flow_{f,t}$  denotes the monthly fund flows to fund  $f$  in month  $t$ .  $\mathbb{1}_{(Fund\_Type_{f,t-1}=k)}$  denotes an indicator variable that equals 1 if the fund belongs to the  $k$ -th type, as defined above. The omitted indicator variable corresponds to non-ESG fund with either above average or high sustainability ratings or high voting support for shareholder-proposed ESG proposals.  $\mathbf{X}_{f,t-1}$  includes fund and fund-family characteristics as explanatory variables of fund  $f$  in month  $t-1$ . We also include fund performance as a determinant of fund flows. As is common in the literature, we follow Sirri and Tufano (1998) and rank funds based on the fund's return in the previous

year within the fund’s Morningstar category. We allow for the slope of flows with respect to the fund’s return rank to differ for the lowest quintile, middle three quintiles, and the top quintile. As an alternative to performance ranks, we include the fund’s Morningstar star ratings. Finally, we also include  $\text{month} \times \text{Morningstar category}$  fixed effects  $\gamma_{t,s}$ .

Table 14 reports estimation results. In columns (1)-(3), we use fund return ranks as a measure of performance. In columns (4)-(6), we use Morningstar star ratings. If we estimate the regression equation for all funds in our sample (column (1)), the estimated coefficient on the indicator variable for non-ESG mutual funds with average, below-average or low Morningstar sustainability ratings (1-3 globes) and voting support for ESG initiatives below 70%, is small and not statistically significant, which suggests that investors ignore Morningstar sustainability ratings and voting behavior of non-ESG funds. In contrast, the estimated coefficient on the indicator variable for “True ESG” funds is positive and significant. In terms of economic significance, during our sample period, true ESG funds have captured roughly 0.686% more new money from investors per month, as a fraction of their assets, than otherwise similar non-ESG funds. Although the coefficient on “Greenwasher” is positive, 0.428%, it is smaller than that on “True ESG” and statistically insignificant. Therefore, investors as a whole are able to distinguish between true ESG funds and that merely claim to be ESG, and reward the former with higher asset growth.

In columns (2) and (3), we restrict the sample to retail funds and institutional funds, respectively. Retail (institutional) funds are defined as those where institutional share classes account for less (more) than 50% of the fund’s assets under management. Estimation results in column (2) suggest that retail investors value sustainability and rely on funds’ ESG labels without discriminating between greenwashers and true ESG funds. In fact, greenwashers have attracted slightly more new money from investors than true ESG funds (0.57% per month vs. 0.475% per month). In contrast, when we restrict our attention to institutional funds, we find that true ESG funds have attracted 1.055% higher flows per month than comparable non-ESG funds, while greenwashers have received 0.561% less flows per month than comparable non-ESG funds (insignificant). In other words, sophisticated investors clearly identify which funds honor their commitment towards sustainable finance and which funds do not.

If we use Morningstar star ratings as a measure of performance, our conclusions remain the

same qualitatively.

While these results suggest that institutional investors prefer true ESG funds over greenwashers, it is unclear whether this finding is due only to the fact that the former necessarily have higher ratings or also because they vote better than greenwashers with the same ratings. To address this question, we rerun the flow regressions but we define the 4 different types based exclusively on ratings: (1) non-ESG mutual funds with average, below-average or low Morningstar sustainability ratings (1-3 globes); (2) ESG funds with average, below-average or low Morningstar sustainability ratings; (3) all other ESG funds; and (4) all other non-ESG funds. Estimation results are reported in Table 15. When we pool all funds together (column 1), ESG funds with higher sustainability ratings (4-5 globes) receive more flows than ESG funds with lower ratings (1-3 globes), and both groups of funds receive more flows than non-ESG funds. If we focus on retail funds (column 2), ESG funds with higher ratings attract twice as much new money from investors as ESG funds with lower ratings in our sample period. More specifically, the coefficient on the indicator variable for the former group of funds is 0.62% (stastically significant) as opposed to 0.33% (insignificant) for the latter. In other words, retail investors rely strongly on fund ratings when evaluating funds' ESG performance. If we study institutional funds separately (column 3), we also find that ESG funds with higher ratings receive more flows than ESG funds with lower ratings (1.467% vs. 0.664%). However, the gap in flows between both groups (0.8% per month) is much smaller than that between true ESG funds and greenwashers reported in Table 14 ( $1.616\% = 1.055\% - (-0.561\%)$ ). We therefore conclude that at least part of institutional investors' preference for true ESG funds is driven by these funds' commitment to sustainable finance as shown through their voting behavior. Our conclusions do not change if we use Morningstar star ratings as the proxy for fund performance.

Taken together, the results of this section show that retail investors and institutional investors differ sharply in the way they assess mutual funds' ESG quality. While the former rely mostly on funds' ESG claims and ESG ratings, the latter also pay close attention to voting behavior. Consequently, even in a mutual fund market where sustainability reporting lacks a specific regulation, asset management firms offering funds that claim to invest according to ESG principles must fulfill that promise if they wish to attract institutional investors. Such form of external governance seems to act as a deterrent against greenwashing.

## 7 Conclusions

Despite frequent accusations of widespread greenwashing in the asset management industry, lack of a precise definition of greenwashing makes it impossible to evaluate whether such complaints are justified. Our proposed definition considers whether a mutual fund claims in its prospectus to invest according to ESG criteria and evaluates the truthfulness of the fund's claim based not only on the sustainability scores of the securities held in the fund's portfolio but also on the fund's proven commitment to ESG investment through its voting record.

Using this definition, we quantify the prevalence of greenwashing in the US mutual fund industry and conclude that only 1 in 4 funds that claim to invest according to ESG considerations fail to honor this promise to their investors. Greenwashers are more frequently found in larger and older fund families. Importantly, while asset management companies that have signed the UNPRI pledge do not seem to invest more according to those principles than non-signatories, they are less likely to offer funds that falsely claim to be ESG.

Although Morningstar has recently started to recognize both its own ratings and funds' voting records when granting their ESG label, it does not detect funds that are greenwashers according to our definition. Retail investors rely strongly on ratings but do not seem to take funds' voting records into account when evaluating funds' commitment to ESG investing. On the other hand, institutional investors seem to be able to distinguish between greenwashers and true ESG funds.

Taken together, our results suggest that accusations of ubiquitous greenwashing by asset managers overstate the true extent of the problem. However, there is room for regulation aimed at enhanced ESG disclosure, at least for those funds that target retail investors.

## References

- Arons, S. (2021). Deutsche Banks DWS slumps after U.S., Germany ESG probe. *Bloomberg*, August 26. <https://www.bloomberg.com/news/articles/2021-08-26/dws-shares-fall-after-u-s-opens-probe-on-sustainability-claim>.
- Dikolli, S. S., M. M. Frank, M. Z. Guo, and L. J. Lynch (2021). Walk the talk: ESG mutual fund voting on shareholder proposals. *Working Paper Available at SSRN 3849762*.
- Dumitrescu, A. and M. Zakriya (2021). Stakeholders and the stock price crash risk: What matters in corporate social performance? *Journal of Corporate Finance* 67, 101871.
- Economist (2021). Sustainable finance is rife with greenwash. Time for more disclosure. May 22. <https://www.economist.com/leaders/2021/05/22/sustainable-finance-is-rife-with-greenwash-time-for-more-disclosure>.
- Economist (2022). Fossil hunters. February 12. <https://www.economist.com/finance-and-economics/who-buys-the-dirty-energy-assets-public-companies-no-longer-want/21807594>.
- El Ghouli, S. and A. Karoui (2017). Does corporate social responsibility affect mutual fund performance and flows? *Journal of Banking & Finance* 77, 53–63.
- Evans, R. B. and Y. Sun (2021). Models or stars: The role of asset pricing models and heuristics in investor risk adjustment. *Review of Financial Studies* 34(1), 67–107.
- Fama, E. F. and K. R. French (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics* 33(1), 3–56.
- Fama, E. F. and K. R. French (2015). A five-factor asset pricing model. *Journal of Financial Economics* 116(1), 1–22.
- Fatemi, A., I. Fooladi, and H. Tehranian (2015). Valuation effects of corporate social responsibility. *Journal of Banking & Finance* 59, 182–192.
- Fernando, C. S., M. P. Sharfman, and V. B. Uysal (2017). Corporate environmental policy and shareholder value: Following the smart money. *Journal of Financial and Quantitative Analysis* 52(5), 2023–2051.
- Ferreira, M. A., A. Keswani, A. F. Miguel, and S. B. Ramos (2012). The flow-performance relationship around the world. *Journal of Banking & Finance* 36(6), 1759–1780.
- Ferrell, A., H. Liang, and L. Renneboog (2016). Socially responsible firms. *Journal of Financial Economics* 122(3), 585–606.
- Fletcher, L. and J. Oliver (2022). Green investing: The risk of a new mis-selling scandal). *Financial Times*, February 20. <https://www.ft.com/content/ae78c05a-0481-4774-8f9b-d3f02e4f2c6f>.
- Gantchev, N., M. Giannetti, and R. Li (2021). Sustainability or performance? Ratings and fund managers incentives. *Working Paper Available at SSRN 3731006*.
- Gibson, R., S. Glossner, P. Krueger, P. Matos, and T. Steffen (2020). Responsible institutional investing around the world. *Swiss Finance Institute Research Paper* (20-13).

- Gil-Bazo, J., P. Ruiz-Verdú, and A. A. Santos (2010). The performance of socially responsible mutual funds: The role of fees and management companies. *Journal of Business Ethics* 94(2), 243–263.
- Hartzmark, S. and A. Sussman (2019). Do investors value sustainability? A natural experiment examining ranking and fund flows. *The Journal of Finance* 74(6), 2789–2837.
- Kim, S. and A. Yoon (2022). Analyzing active managers’ commitment to ESG: Evidence from United Nations Principles for Responsible Investment. *Forthcoming, Management Science*.
- Liang, H., L. Sun, and M. Teo (2020). Greenwashing. *Working Paper Available at SSRN 3610627*.
- Meager, E. (2021). Is SFDR failing? Eight in ten sustainable funds in Europe hold fossil fuel stocks. *Capital Monitor*, June 29. <https://capitalmonitor.ai/institution/government/is-sfdr-failing-eight-in-ten-sustainable-funds-in-europe-hold-fossil-fuel-stocks/>.
- Michaely, R., G. Ordonez-Calafi, and S. Rubio (2022). Mutual funds strategic voting on environmental and social issues. *Available at SSRN 3884917*.
- Morningstar (2016). Morningstar sustainability rating methodology. September 22. [https://s21.q4cdn.com/198919461/files/doc\\_downloads/press\\_kits/2016/Morningstar-Sustainability-Rating-Methodology.pdf](https://s21.q4cdn.com/198919461/files/doc_downloads/press_kits/2016/Morningstar-Sustainability-Rating-Methodology.pdf).
- Nofsinger, J. and A. Varma (2014). Socially responsible funds and market crises. *Journal of Banking & Finance* 48, 180–193.
- Norton, L. (2021). Barrons top-performing sustainable funds. *Barrons*. <https://www.barrons.com/articles/barrons-100-top-sustainable-funds-51611309600>.
- Pástor, L., R. F. Stambaugh, and L. A. Taylor (2021). Sustainable investing in equilibrium. *Journal of Financial Economics* 142(2), 550–571.
- Pedersen, L. H., S. Fitzgibbons, and L. Pomorski (2021). Responsible investing: The ESG-efficient frontier. *Journal of Financial Economics* 142(2), 572–597.
- Pelizzon, L., A. Rzeznik, and K. W. Hanley (2021). The salience of ESG ratings for stock pricing: Evidence from (potentially) confused investors. *Working Paper Available at SSRN 3886820*.
- Renneboog, L., J. Ter Horst, and C. Zhang (2008). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking & Finance* 32(9), 1723–1742.
- Schwartzkopff, F. and S. Kishan (2022). ESG funds managing \$1 trillion are stripped of sustainable tag by Morningstar. *Bloomberg*. <https://www.bloomberg.com/news/articles/2022-02-10/funds-managing-1-trillion-stripped-of-esg-tag-by-morningstar>.
- Sirri, E. and P. Tufano (1998). Costly search and mutual fund flows. *The Journal of Finance* 53(5), 1589–1622.

## Tables and Figures

Table 1: Text-based ESG Labels

This table reports the ESG-related strings we use to search in the prospectus. We also go through a filtering process to identify strings in fund names or investment objectives that may appear as ESG-related but do not convey ESG information.

ESG-related Text	ESG, CSR, Sustainability/Sustainable, Corporate Responsibility, Social, Governance, Carbon, Climate, Environment, Gender, Women, Ecology, Clean Energy, Renewable, Ethic, Green
Exceptions	Asset Managers: Green Owl, Green Square, Green Century Investment Objectives: Sustainable growth of income, Low interest rate environment

Table 2: Proxy Voting: Types of Resolutions

This table overviews types of resolutions proposed by either shareholders or management in the voting results of mutual funds categorized in Morningstar. Shareholder resolutions are divided into environmental and social, governance and non-ESG resolutions.

<i>Shareholder Resolutions</i>	
Environmental & Social	Climate Change, Environment, Human & Workers' Rights, Humane Treatment of Animals, Militarism and Aggression, Political Influence, Public Health/Product Safety, Other E&S
Governance	Director Elections, ESG Governance Arrangements, Board Governance, Executive Compensation, Other Governance
Non-ESG	Shareholder Rights, Shareholder Meetings and Proxy Process, Strategy & Business
<i>Management Resolutions</i>	
	Governance & Director Election, 1/2/3 years Advisory Vote Frequency ("Say on Pay"), Advisory Vote on Executive Compensation, Compensation (Approve new or amended equity-based compensation plans), Auditor Ratification (Ratify the selection of the company's auditor for the forthcoming fiscal year)

Table 3: Term and Default Factors: Selection of Bond Indices

This table shows the bond indices we use to construct term and default factors, as in Fama and French (1993), and include long-term and short-term government bond indices as well as mid-term defaultable or default-free bond indices. Return data for indexes are retrieved from Morningstar.

Region	Long-term Government Bond Index	Short-term Government Bond Index	Mid-term Defaultable Bond Index	Mid-term Default-free Bond Index
North America	FTSE US GBI 10+ Yr USD	FTSE US GBI 1-3 Yr USD	Morningstar US 1-5Y Corp Bd TR USD	Markit iBoxx USD Treasuries 3-7 TR
Europe	FTSE EMU GBI 10+ Year USD	FTSE EMU GBI 1-3 Year USD	ICE BofA 5-10Y BBB EUR Corp TR USD	ICE BofA 5-10Y AAA EUR Corp TR USD
Asia	FTSE Asian GBI 10+ Yr USD	FTSE Asian GBI 1-3 Yr USD	ICE BofA Asian Dollar Corp TR USD	Bloomberg Asian Pacific Aggregate Global Aggregate Eligible TR USD
Latin America	FTSE EMUSDGBI 10+ Year USD	FTSE EMUSDGBI 1-5 Year USD	BBgBarc EM Americas Corp TR USD	BBgBarc EM Americas Sovereign TR USD
Middle East	FTSE EMUSDGBI 10+ Year USD	FTSE EMUSDGBI 1-5 Year USD	BBgBarc EM Middle East Corp TR USD	BBgBarc EM Middle East Sovereign TR USD
Africa	FTSE EMUSDGBI 10+ Year USD	FTSE EMUSDGBI 1-5 Year USD	BBgBarc EM Africa Corp TR USD	BBgBarc EM Africa Sovereign TR USD

Table 4: Summary Statistics

This table reports summary statistics of data at the fund-month level used in the empirical analysis. We keep observations of funds with valid Morningstar sustainability ratings, prospectus names and objectives, as well as more than 10 million USD in assets under management (AUM). Fund AUM is in million dollars and AUM of the asset management company is in trillion dollars. Fund age and management company age are in months. Both Morningstar star ratings and sustainability ratings take values between one and five. Environmental, social and governance risk scores are standardized by mean and standard deviation of raw E, S or G scores of all mutual funds in our sample, in which higher scores denote better performance. Past 36-month excess returns, monthly flows and past 12-month cumulative flows are in percentage points. UNPRI Signatory is an indicator variable that takes the value of one if the asset management company is a UNPRI signatory in that month and zero otherwise.

	ESG Funds			Non-ESG Funds			All Funds		
	Mean	SD	p50	Mean	SD	p50	Mean	SD	p50
Log (Fund AUM)	5.02	1.60	4.83	5.95	1.80	5.97	5.91	1.80	5.91
Log (Fund Age)	4.42	1.23	4.69	5.02	0.90	5.22	4.99	0.93	5.20
Institutional Ratio	0.39	0.40	0.22	0.43	0.39	0.32	0.43	0.40	0.31
Expense Ratio (%)	1.11	0.62	1.09	1.14	0.49	1.08	1.14	0.50	1.08
Star Rating	3.32	0.97	3.00	3.24	1.04	3.00	3.24	1.04	3.00
Past 36-Month Excess Returns (%)	-0.05	0.25	-0.04	-0.06	0.31	-0.05	-0.06	0.31	-0.05
Monthly Flows (%)	1.62	4.88	0.59	-0.16	4.18	-0.46	-0.08	4.23	-0.42
Past 12-Month Cumulative Flows (%)	27.01	57.62	6.52	3.83	40.80	-4.23	4.92	42.04	-3.83
Log (Management Company Age)	5.82	0.16	5.85	5.76	0.31	5.83	5.76	0.30	5.84
Log (Management Company AUM)	2.53	2.63	2.62	2.60	2.51	2.84	2.60	2.51	2.84
Morningstar Sustainability Rating	3.75	1.13	4.00	3.22	1.09	3.00	3.24	1.10	3.00
Environmental Score (standardized)	0.47	0.66	0.55	-0.01	1.04	0.19	0.02	1.02	0.22
Social Score (standardized)	0.52	0.77	0.55	0.02	1.01	0.09	0.05	1.01	0.11
Governance Score (standardized)	0.43	0.75	0.33	-0.01	1.04	-0.04	0.02	1.03	-0.02
UNPRI Signatory	0.82	0.39	1.00	0.60	0.49	1.00	0.61	0.49	1.00
Observations	3,675			71,623			75,298		

Table 5: Monthly Fund-level Morningstar Sustainability Ratings

This table shows frequencies of monthly Morningstar sustainability ratings in our sample for different subsamples. In Panel A, the sample is divided into funds with non-ESG and ESG label. In Panel B, the sample is divided into funds managed by non-UNPRI and UNPRI signatory asset management companies. In Panel C, the sample is restricted to the year 2019 and divided into funds that kept their Morningstar ESG label in January 2020 and those that lost it.

Panel A: ESG vs. non-ESG Funds

	Non-ESG		ESG	
	Number of Obs	Percentage	Number of Obs	Percentage
One Globe	4,748	6.63%	99	2.69%
Two Globes	13,270	18.53%	496	13.50%
Three Globes	24,680	34.46%	822	22.37%
Four Globes	19,664	27.45%	1,066	29.01%
Five Globes	9,261	12.93%	1,192	32.44%
Total	71,623		3,675	

Panel B: UNPRI vs. Non-UNPRI Signatory Fund families

	Non-UNPRI		UNPRI	
	Number of Obs	Percentage	Number of Obs	Percentage
One Globe	2,286	7.78%	2,561	5.58%
Two Globes	5,926	20.17%	7,840	17.07%
Three Globes	10,191	34.69%	15,311	33.34%
Four Globes	7,564	25.75%	13,166	28.67%
Five Globes	3,409	11.60%	7,044	15.34%
Total	29,376		45,922	

Panel C: Morningstar ESG Label Removal in January 2020

	Lost ESG Label		Kept ESG Label	
	Number of Obs	Percentage	Number of Obs	Percentage
One Globe	94	6.81%	55	3.74%
Two Globes	440	18.80%	216	14.70%
Three Globes	858	36.65%	368	25.05%
Four Globes	619	26.44%	420	28.59%
Five Globes	330	14.10%	410	27.91%
Total	2,341		1,469	

Table 6: Do ESG Labels Indicate Better ESG Ratings?

This table reports the estimated coefficients and standard errors from a multinomial logit model for fund Morningstar sustainability ratings. In Panel B, the sample is separated into fixed-income & allocation funds, domestic equity funds, as well as international equity funds. In all the regressions, we include only observations with prior month fund size larger than 10 millions USD and control for both fund and management company characteristics. Fund controls include log of fund size (USD million), log of fund age (months), Morningstar star ratings, gross expenses ratio, past 12-month cumulative flows and past 36-month excess return. Management company controls include log of total assets under management (USD billion) and log of age (months). Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Panel A: All Funds

	All Funds			
	One globe	Two globes	Four globes	Five globes
ESG Label	-0.627 (0.481)	0.016 (0.266)	0.528** (0.214)	1.355*** (0.262)
Log (Fund AUM)	0.117* (0.062)	0.021 (0.034)	0.063** (0.028)	0.142*** (0.045)
Log (Fund Age)	-0.330*** (0.114)	-0.155** (0.075)	0.051 (0.063)	-0.007 (0.091)
Star Rating	-0.131* (0.074)	0.041 (0.041)	0.061* (0.032)	0.063 (0.049)
Gross Expense Ratio (%)	0.474*** (0.176)	0.071 (0.106)	0.304*** (0.098)	0.578*** (0.139)
Past 12-Month Flow (%)	0.001 (0.001)	0.000 (0.001)	0.002** (0.001)	0.001 (0.001)
Past 36-Month Excess Return (%)	0.536** (0.245)	0.071 (0.112)	-0.166* (0.098)	0.160 (0.137)
Log (Management Company AUM)	0.004 (0.035)	-0.009 (0.019)	0.011 (0.019)	0.009 (0.027)
Log (Management Company Age)	-0.744*** (0.215)	-0.468*** (0.151)	0.252 (0.188)	0.497** (0.247)
Pseudo R-squared				0.013
Observations				64,322

Panel B: Subsamples by Broad Investment Category

	FI & Allocation Funds				Domestic Equity Funds				International Equity Funds			
	One globe	Two globes	Four globes	Five globes	One globe	Two globes	Four globes	Five globes	One globe	Two globes	Four globes	Five globes
ESG Label	-17.585*** (0.684)	-2.181* (0.890)	-0.749 (0.707)	2.225*** (0.495)	-0.037 (0.651)	0.252 (0.348)	0.498 (0.309)	1.121** (0.409)	-1.084 (0.662)	-0.030 (0.378)	0.534 (0.328)	1.300*** (0.363)
Log (Fund AUM)	0.236* (0.098)	0.132 (0.070)	-0.092 (0.076)	-0.239 (0.125)	0.022 (0.101)	-0.014 (0.055)	0.084* (0.042)	0.197** (0.063)	0.177 (0.100)	0.057 (0.052)	0.043 (0.047)	0.047 (0.077)
Log (Fund Age)	-0.111 (0.193)	0.068 (0.138)	0.229 (0.150)	0.467 (0.266)	-0.194 (0.187)	-0.189 (0.128)	0.006 (0.098)	-0.159 (0.135)	-0.316 (0.201)	-0.225 (0.121)	0.089 (0.108)	0.039 (0.151)
Star Rating	-0.147 (0.116)	0.121 (0.088)	-0.050 (0.097)	0.056 (0.181)	0.107 (0.104)	0.020 (0.058)	0.088 (0.049)	0.105 (0.066)	-0.317** (0.121)	-0.023 (0.067)	0.054 (0.048)	0.012 (0.079)
Gross Expense Ratio (%)	0.383 (0.261)	0.104 (0.171)	-0.314 (0.225)	0.339 (0.284)	0.822* (0.321)	0.053 (0.206)	0.554** (0.176)	0.789*** (0.235)	0.319 (0.307)	0.263 (0.165)	0.041 (0.160)	0.165 (0.232)
Past 12-Month Flow (%)	0.003 (0.005)	-0.002 (0.003)	0.005 (0.003)	0.003 (0.004)	-0.004 (0.003)	-0.002 (0.002)	0.002 (0.001)	-0.001 (0.002)	0.002 (0.002)	0.002 (0.002)	0.001 (0.001)	0.002 (0.002)
Past 36-Month Excess Return (%)	0.454 (0.647)	-0.148 (0.442)	1.438** (0.520)	0.556 (0.880)	0.276 (0.710)	-0.081 (0.204)	0.009 (0.161)	0.341 (0.253)	0.787*** (0.225)	0.229 (0.155)	-0.300* (0.124)	-0.047 (0.178)
Log (Management Company AUM)	-0.066 (0.066)	-0.027 (0.043)	-0.080 (0.045)	0.035 (0.069)	0.016 (0.059)	-0.015 (0.031)	-0.008 (0.027)	0.035 (0.038)	0.018 (0.056)	0.025 (0.032)	0.035 (0.029)	-0.035 (0.044)
Log (Management Company Age)	-0.686 (0.387)	-0.416 (0.241)	0.454 (0.372)	0.322 (0.455)	-1.440* (0.650)	-0.450 (0.604)	0.498 (0.438)	0.287 (0.571)	-0.523 (0.312)	-0.481* (0.214)	-0.028 (0.239)	0.524 (0.356)
Pseudo R-squared	0.037				0.012				0.018			
Observations	8,271				32,893				23,158			

Table 7: Fitted Probabilities and Marginal Effects of ESG Label on Morningstar Sustainability Ratings

This table reports fitted probabilities and marginal effects (differences) for the ESG label on Morningstar sustainability ratings as estimated from the multinomial logit regressions of Table 6. Our sample is separated into fixed-income & allocation funds, domestic equity funds, as well as international equity funds. In all the regressions, we include only observations with prior month fund size larger than 10 millions USD and control for both fund and management company characteristics. Fund controls include log of fund size (USD million), log of fund age (months), Morningstar star ratings, gross expenses ratio, past 12-month cumulative flows and past 36-month excess return. Management company controls include log of total assets under management (USD billion) and log of age (months). Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Fitted Probabilities and Marginal Effects				
	One globe	Two globes	Three globes	Four globes	Five globes
<i>All Funds</i>					
No ESG Label	0.064	0.180	0.343	0.284	0.128
ESG Label	0.023	0.121	0.224	0.312	0.320
Differences	-0.041***	-0.059**	-0.119***	0.028	0.192***
	(0.011)	(0.027)	(0.034)	(0.037)	(0.045)
<i>FI &amp; Allocation Funds</i>					
No ESG Label	0.097	0.296	0.370	0.180	0.057
ESG Label	0.000	0.036	0.386	0.087	0.491
Differences	-0.097***	-0.259***	0.016	-0.094*	0.434***
	(0.014)	(0.034)	(0.111)	(0.052)	(0.109)
<i>Domestic Equity Funds</i>					
No ESG Label	0.043	0.157	0.351	0.296	0.152
ESG Label	0.027	0.132	0.228	0.314	0.298
Differences	-0.016	-0.025	-0.123**	0.018	0.146**
	(0.017)	(0.036)	(0.052)	(0.050)	(0.065)
<i>International Equity Funds</i>					
No ESG Label	0.081	0.171	0.322	0.305	0.121
ESG Label	0.019	0.113	0.218	0.350	0.299
Differences	-0.062***	-0.057	-0.104**	0.045	0.178***
	(0.014)	(0.043)	(0.046)	(0.063)	(0.064)

Table 8: Do ESG Labels Indicate Better ESG performance? Disaggregated by Investment Region and Pillar

This table reports results of OLS regressions of fund-level standardized Morningstar environmental, social or governance scores on fund ESG label dummy and controls. Our sample is separated into equity funds, fixed-income & allocation funds, domestic equity funds as well as international equity funds. In all regressions, we include only observations with prior month fund size larger than 10 millions USD and control for both fund and management company characteristics. Fund controls include log of fund size (USD million), log of fund age (months), Morningstar star ratings, gross expenses ratio, past 12-month cumulative flows and past 36-month excess return. Management company controls include log of total assets under management (USD billion) and log of age (months). We also include month $\times$ Morningstar category fixed effects. Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Environmental Score	Social Score	Governance Score
<i>All Funds</i>			
ESG Label	0.229*** (0.063)	0.344*** (0.051)	0.301*** (0.046)
R-squared	0.700	0.609	0.402
N	51,558	51,558	51,558
<i>FI &amp; Allocation Funds</i>			
ESG Label	0.338*** (0.082)	0.158 (0.150)	0.024 (0.097)
R-squared	0.401	0.401	0.337
Observations	6,871	6,871	6,871
<i>Domestic Equity Funds</i>			
ESG Label	0.389*** (0.099)	0.436*** (0.080)	0.412*** (0.074)
R-squared	0.683	0.503	0.271
Observations	25,233	25,233	25,233
<i>International Equity Funds</i>			
ESG Label	0.048 (0.060)	0.267*** (0.060)	0.214*** (0.067)
R-squared	0.768	0.733	0.663
Observations	19,276	19,276	19,276

Table 9: Annual Voting Support to ESG Initiatives: ESG vs. Non-ESG Funds

This table reports average annual voting support (in %) for ESG initiatives by ESG and non-ESG Funds. We report group mean and results for a t-test of differences in mean. Observations are in fund-year level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Non-ESG Funds (%)	ESG Funds (%)	ESG – Non-ESG (%)
% Support - All Shareholder Resolutions	36.6	58.6	22.0***
% Support - All Management Resolutions	94.8	83.4	-11.***
% Support - Environmental & Social	33.5	65.7	32.1***
% Support - Governance (Shareholder)	49.4	64.9	15.4***

Table 10: Number and AUM of Greenwashers

This table reports the number of funds and fund-year observations, as well as assets under management (USD billion) for greenwashers and true ESG funds. We define greenwashers as ESG funds with average, below average or low Morningstar Sustainability Ratings (1, 2, or 3 globes) and low support (less than 60%, 70% and 80%, respectively) for ESG resolutions initiated by shareholders. We also report in parentheses the ratio of greenwashers and non-greenwashers, with respect to number of funds, number of fund-year observations and assets under management for all ESG funds.

	Funds	Fund-Year	AUM in USD billion
<i>Threshold: 70% Support for ESG Resolutions</i>			
Greenwashers	31 (23.8%)	73 (21.3%)	8.8 (30.2%)
True ESG	99 (76.2%)	269 (78.7%)	20.2 (69.8%)
<i>Threshold: 60% Support for ESG Resolutions</i>			
Greenwashers	28 (21.5%)	62 (18.1%)	8.5 (29.3%)
True ESG	102 (78.5%)	280 (81.9%)	20.5 (70.7%)
<i>Threshold: 80% Support for ESG Resolutions</i>			
Greenwashers	33 (25.4%)	79 (23.1%)	9.0 (31.0%)
True ESG	97 (75.6%)	263 (76.9%)	20.0 (69.0%)

Table 11: Determinants of Greenwashers

This table reports estimated coefficients and standard errors of a logit model for the Greenwasher dummy, which equals 1 if the fund is a Greenwasher according to our definition, and 0 otherwise. The sample is restricted to ESG funds. In all the regressions, we include only observations with prior month fund size larger than 10 millions USD and control for both fund and management company characteristics. Fund controls include log of fund size (USD million), log of fund age (months), Morningstar star ratings, gross expenses ratio, past 12-month cumulative flows and past 36-month excess return. Management company controls include log of total assets under management (USD billion) and log of age (months). Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Dependent Variable:		
	Dummy of Greenwasher		
Minimum % Support for ESG Initiatives	60%	70%	60%
Log (Fund AUM)	0.190 (0.283)	0.180 (0.261)	0.149 (0.264)
Log (Fund Age)	-0.605 (0.634)	-0.490 (0.551)	-0.354 (0.496)
Star Rating	-0.355 (0.269)	-0.306 (0.242)	-0.452** (0.226)
Gross Expense Ratio (%)	-0.281 (0.804)	0.279 (0.714)	0.308 (0.709)
Past 12-Month Flow (%)	-0.013* (0.007)	-0.011* (0.006)	-0.009* (0.006)
Past 36-Month Excess Return (%)	0.016 (0.756)	0.585 (0.801)	0.219 (0.804)
UNPRI Signatory	-2.097** (0.923)	-2.151** (0.907)	-2.137** (0.919)
Log (Management Company AUM)	0.466** (0.231)	0.465** (0.204)	0.390** (0.187)
Log (Management Company Age)	12.294** (5.935)	9.686* (5.239)	11.811** (5.089)
Pseudo R-squared	0.193	0.178	0.180
Observations	1,807	1,807	1,807

Table 12: Fitted Probabilities and Marginal Effects of Greenwashers Determinants

This table reports fitted probabilities and marginal effects of the logit model in Table 11. Fund controls include log of fund assets under management (USD million), log of fund age (months), Morningstar star ratings, gross expenses ratio, past 12-month cumulative flows and past 36-month excess return. Management company controls include log of total assets under management (USD billion) and log of age (months). Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Minimum % Support for ESG Initiatives	60%	70%	80%
Log (Fund AUM)	0.019 (0.028)	0.021 (0.030)	0.019 (0.032)
Log (Fund Age)	-0.061 (0.059)	-0.057 (0.060)	-0.044 (0.059)
Star Rating	-0.036 (0.024)	-0.036 (0.026)	-0.056** (0.026)
Gross Expense Ratio (%)	-0.028 (0.081)	0.033 (0.083)	0.038 (0.088)
Past 12-Month Flow (%)	-0.001* (0.001)	-0.001* (0.001)	-0.001* (0.001)
Past 36-Month Excess Return (%)	0.002 (0.076)	0.068 (0.092)	0.027 (0.100)
UNPRI Signatory	-0.296** (0.143)	-0.335** (0.148)	-0.352** (0.157)
Log (Management Company AUM)	0.047** (0.019)	0.054*** (0.020)	0.049** (0.020)
Log (Management Company Age)	1.237** (0.584)	1.127* (0.578)	1.473** (0.591)

Table 13: ESG Voting Support of Funds Losing/Keeping Morningstar ESG Label

This table summarizes the voting support for ESG resolutions proposed by shareholders of the funds that either kept or lost their Morningstar ESG label in January 2020. The sample is further divided into funds with 1-3 globes and 4-5 globes of Morningstar sustainability ratings in December 2019.

	Kept Morningstar ESG Label			Lost Morningstar ESG Label		
	25% Quantile	Median	75% Quantile	25% Quantile	Median	75% Quantile
1-3 Globes in Dec 2019	34.7%	80%	99.2%	21.8%	42.1%	66.7%
4-5 Globes in Dec 2019	60%	88.9%	95%	27.3%	50%	70%

Table 14: Flows to Greenwashers vs. True ESG Funds

This table reports the estimated coefficients and standard errors of flow regressions on indicator variables for different fund types: Non-ESG fund with 1-3 globe sustainability ratings and ESG voting support  $\leq 70\%$ ; True ESG fund; and Greenwasher. The regression is run separately for all funds, columns (1) and (4), retail funds (institutional ratio  $< 50\%$ ), columns (2) and (5), and institutional funds (institutional ratio  $\geq 50\%$ ), columns (3) and (6). In all the regressions, we include only observations with prior month fund assets under management larger than USD 10 millions and control for both fund and management company characteristics. Fund controls include log of fund assets under management (USD million), log of fund age (months) and gross expenses ratio. Management company controls include log of total assets under management (USD billion) and log of age (months). In the left three columns we include past 12-month cumulative flows, and fractional performance rank of past 12-month fund return, following Sirri and Tufano (1998), including bottom performance quintile, middle three performance quintiles and top performance quintile, while in the right three columns we include fund star ratings instead. We also include month  $\times$  Morningstar category fixed effects. Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Dependent Variable: Monthly flow (%)					
	All Funds (1)	Retail (2)	Institutional (3)	All Funds (4)	Retail (5)	Institutional (6)
Non-ESG Fund & Sustainability Rating $< 4$ Globes & ESG Voting Support $< 70\%$	0.085 (0.076)	0.083 (0.089)	0.056 (0.141)	0.093 (0.080)	0.078 (0.077)	0.108 (0.179)
True ESG Fund	0.686** (0.295)	0.475** (0.208)	1.055** (0.483)	0.941** (0.371)	0.639*** (0.235)	1.499** (0.738)
Greenwasher	0.428 (0.347)	0.570* (0.317)	-0.561 (0.857)	0.590 (0.400)	0.807** (0.332)	-1.704 (1.186)
Bottom Performance Quintile	9.163*** (3.165)	4.058*** (1.072)	15.648** (6.462)			
Middle Performance Quintiles	1.189** (0.487)	1.509*** (0.180)	0.639 (1.097)			
High Performance Quintile	5.845*** (0.745)	4.598*** (0.729)	7.464*** (1.314)			
Star Rating				0.627*** (0.062)	0.487*** (0.058)	0.700*** (0.089)
Log (Fund AUM)	-0.082* (0.045)	-0.112*** (0.037)	-0.053 (0.090)	-0.116** (0.049)	-0.142*** (0.040)	-0.036 (0.155)
Log (Fund Age)	-0.419** (0.162)	-0.096 (0.076)	-0.674** (0.269)	-0.463* (0.272)	-0.054 (0.075)	-0.986 (0.607)
Gross Expense Ratio (%)	0.876 (1.012)	-0.248* (0.142)	2.304 (2.436)	1.220 (1.141)	0.011 (0.152)	3.055 (3.094)
Past 12-Month Flow (%)	0.037*** (0.002)	0.039*** (0.002)	0.033*** (0.002)	0.038*** (0.002)	0.040*** (0.002)	0.035*** (0.003)
Log (Management Company AUM)	0.090 (0.072)	0.011 (0.026)	0.192 (0.169)	0.082 (0.079)	-0.005 (0.026)	0.205 (0.192)
Log (Management Company Age)	0.139 (0.260)	-0.088 (0.208)	0.233 (0.410)	0.309 (0.263)	-0.006 (0.184)	0.491 (0.493)
Year $\times$ Month $\times$ MS Category FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.032	0.140	0.036	0.033	0.137	0.039
No. obs	52,382	30,160	21,439	49,950	29,501	19,674

Table 15: Flows, ESG Labels & MS Sustainability Ratings

This table reports the estimated coefficients and standard errors of monthly flow regressions on indicator variables for different fund types: Non-ESG fund with 1-3 globe sustainability ratings; True ESG fund with 4-5 globe sustainability ratings; and ESG fund with 1-3 globe sustainability ratings. The regression is run separately for all funds, columns (1) and (4), retail funds (institutional ratio < 50%), columns (2) and (5), and institutional funds (institutional ratio  $\geq$  50%), columns (3) and (6). Fund controls include log of fund assets under management (USD million), log of fund age (months), gross expenses ratio and past 12-month cumulative flows. To evaluate fund performance, we use either Morningstar star rating or fractional performance rank of past 36-month excess return, following Sirri and Tufano (1998), including bottom performance quintile, middle three performance quintiles and top performance quintile. Management company controls include log of total assets under management (USD billion) and log of age (months). We also include month  $\times$  Morningstar category fixed effects. Standard errors are clustered at fund and year-month level. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Dependent Variable: Fund Flows (%)					
	All Funds (1)	Retail (2)	Institutional (3)	All Funds (4)	Retail (5)	Institutional (6)
Non-ESG Fund & Sustainability Rating < 4 Globes	-0.001 (0.057)	0.047 (0.066)	-0.033 (0.111)	-0.053 (0.050)	-0.014 (0.058)	-0.089 (0.100)
ESG Fund & Sustainability Rating $\geq$ 4 Globes	0.939** (0.418)	0.620** (0.249)	1.467** (0.642)	1.022** (0.448)	0.554** (0.229)	2.033** (0.889)
ESG Fund & Sustainability Rating < 4 Globes	0.438** (0.206)	0.330 (0.287)	0.664* (0.348)	0.546*** (0.204)	0.440 (0.269)	0.691* (0.393)
Bottom Performance Quintile	7.396*** (1.270)	4.290*** (1.071)	12.166*** (2.193)			
Middle Three Performance Quintiles	1.783*** (0.195)	1.620*** (0.198)	1.833*** (0.330)			
Top Performance Quintile	6.280*** (0.653)	4.918*** (0.694)	8.621*** (1.168)			
Star Rating				0.638*** (0.036)	0.520*** (0.044)	0.820*** (0.062)
Log (Fund AUM)	-0.068** (0.032)	-0.082** (0.035)	-0.048 (0.052)	-0.113*** (0.030)	-0.131*** (0.034)	-0.087* (0.049)
Log (Fund Age)	-0.329*** (0.056)	-0.115 (0.070)	-0.538*** (0.096)	-0.221*** (0.063)	-0.033 (0.065)	-0.516*** (0.124)
Gross Expense Ratio (%)	-0.002 (0.168)	-0.125 (0.148)	0.045 (0.285)	0.144 (0.167)	0.056 (0.144)	0.080 (0.313)
Past 12-Month Flow (%)	0.035*** (0.002)	0.040*** (0.002)	0.031*** (0.003)	0.037*** (0.002)	0.042*** (0.002)	0.032*** (0.003)
Log (Management Company AUM)	0.017 (0.020)	0.009 (0.024)	0.019 (0.037)	-0.003 (0.018)	-0.005 (0.021)	-0.010 (0.034)
Log (Management Company Age)	-0.019 (0.199)	-0.011 (0.220)	-0.066 (0.278)	0.175 (0.191)	0.161 (0.212)	0.134 (0.278)
Month $\times$ MS Category FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.156	0.150	0.188	0.159	0.143	0.200
Observations	60,386	34,935	24,531	64,935	39,021	24,713

Figure 1: Cumulative Distribution of Annual Voting Support for Shareholder and Management Resolutions: ESG vs. Non-ESG Funds

This figure compares ESG and non-ESG funds in terms of annual voting support in all shareholder and management resolutions, including percentage of support in all shareholder resolutions, all management resolutions, environmental & social related resolutions and shareholder-proposed governance resolutions. Observations are in fund-year level.

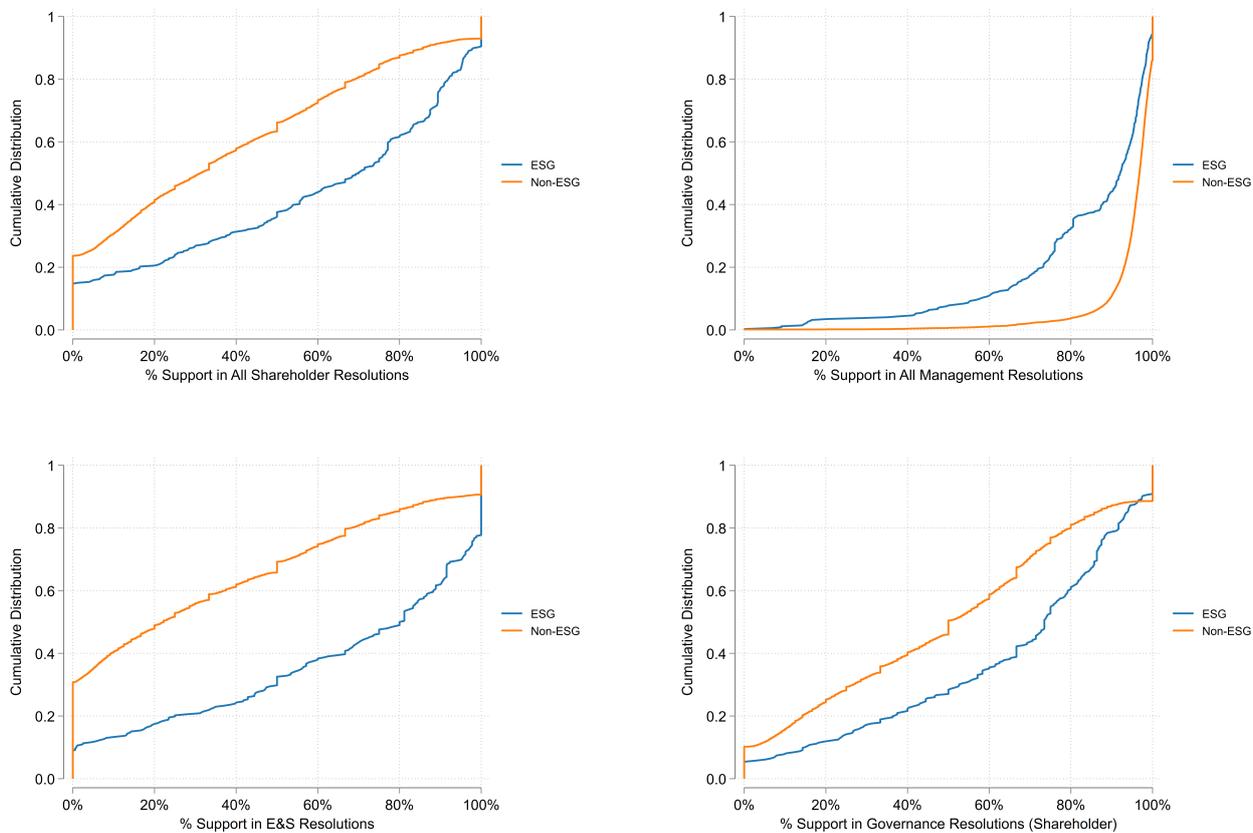


Figure 2: Cumulative Distribution of Annual Voting Support for Shareholder and Management Resolutions: Funds Managed by UNPRI vs. Non-UNPRI Signatories

This figure compares funds managed by UNPRI and Non-UNPRI management companies in terms of annual voting support for all shareholder and management resolutions, including percentage of support in all shareholder resolutions, all management resolutions, environmental & social related resolutions and shareholder-proposed governance resolutions. Observations are in fund-year level.

