The investment skill of ESG aware mutual funds*

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Abstract

This paper investigates financial returns to ESG integration by mutual fund families. Funds with the highest level of integration outperform comparable conventional funds by 4 basis points per month in terms of risk-adjusted returns. The higher returns are concentrated in mutual funds that are exposed to firms where having superior information is most valuable, i.e., those with high ESG disagreement and those that experience incidents. The findings are robust to controlling for portfolio exposure to an ESG factor and to time-unvarying fund and portfolio manager characteristics. The results showcase the investment skill of ESG-aware fund managers.

Keywords: Mutual funds; ESG integration; ESG investing; Investment skill.

JEL classification: G11, G23, Q56

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1 Introduction

The attention towards ESG investing, an approach that considers integrating environmental, social and governance factors into the investment process, has grown exponentially over the last decade. The United Nations-supported Principles for Responsible Investment (PRI) is a prime example of the commitment towards a more sustainable financial system. As of 2020, it counted more than 4,000 signatories representing over $100 trillion in assets under management. The aim of the PRI is "to understand the investment implications of environmental, social and governance (ESG) factors; and to support signatories in incorporating these factors into their investment and ownership decisions."[1]

It is unclear *if* and *why* ESG integration impacts financial investment returns. On the one hand, ESG incorporation could come at the expense of financial returns. For example, green stocks will under-perform brown stocks due to a supply and demand imbalance (Pástor et al., 2021a; Zerbib, 2021). Similarly, sin stocks will out-perform due to value-aligned investors shunning away from such investments (Hong and Kacperczyk, 2009). On the other hand, sustainable firms will out-perform when there is an increase in attention towards sustainability (Pástor et al., 2021b), when ESG rating uncertainty is high for highly rated ESG stocks (Avramov et al., 2021), or during periods of positive macroeconomic outlook (Bansal et al., 2021).[2]

Pedersen et al. (2021) and Avramov et al. (2021) take the first step to reconcile these opposing results for U.S. stocks. Pedersen et al. (2021) argue that firms' sustainability performance is a positive predictor of returns, only when ESG measures are associated with higher profits in a way that markets *have not fully incorporated*. The effect on returns is reversed when the ESG performance is transparent and investors are willing to accept lower returns since they hold these stocks also for non-pecuniary reasons. In a similar

[1]For more information refer to the overview of the PRI principles.

[2]Some reasons for this divergence are differences in ESG ratings across data providers (Berg et al., 2019; Christensen et al., 2021), differences in investment strategies (Gibson et al., 2021), and differences in sample periods (Lins et al., 2017; Bansal et al., 2021).

vein, Avramov et al. (2021) suggest that ESG uncertainty affects the risk-return trade-off. Specifically, they show that the correlation between ESG rating and alpha is negative when ESG rating dispersion is low, but becomes neutral or even positive when the dispersion increases.

This paper examines whether "ESG aware" fund managers, i.e., those that have a higher degree of ESG integration at the fund family level, are better able to identify investment opportunities associated with higher performance, that are not yet fully incorporated in the share prices or ESG scores.[3] The main challenge is to measure ESG integration in a way that does not rely on the observable ESG scores of portfolio firms.[4] We overcome this challenge by using the "Reporting & Assessment (R&A)" framework, a yearly survey on practices related to sustainability that all PRI signatories are obliged to fill out and that is assessed and scored by the PRI. Effectively, we have access to a measure of ESG integration that is comparable across funds and has a comprehensive coverage of fund families across the world (Ceccarelli et al., 2022).

We start by categorizing institutions into scoring bands based on the assessment scores of their R&A framework, where highest scoring band identifies signatories with the best ESG integration. We match these to a list of global mutual funds from Morningstar for which we have obtained the holdings from FactSet (formerly known as LionShare). This allows us to compare risk-adjusted returns of funds across different levels of ESG integration. Our first hypothesis is that fund managers from families with a high degree of integration will outperform, as they are more likely to be ESG aware and thus able to identify investment opportunities.

This hypothesis is confirmed in our sample: Funds with higher R&A ratings outperform other funds by 4 basis points per month on average over the period from 2014 to 2019.

[3]For ease of exposition we will use the terms being ESG aware and having a high degree of ESG integration interchangeably in the remainder of the paper.

[4]Relying on ESG portfolio scores would be detrimental for at least two reasons: First, ESG scores are public information and widely used for taste-based sustainable investing strategies (Kölbel et al., 2020). Following such a strategy should – if anything – have lower expected returns (Pedersen et al., 2021). Second, ESG ratings are often backward looking (Liang and Renneboog, 2020).

We employ several measures of performance including gross returns, Morningstar category-adjusted returns, and funds' alpha over the CAPM, the Fama-French 3-factor, and the Fama-French-Carhart 4-factor model. This result is robust to adding fund-family and fund manager fixed effects to control for time-invariant unobservables and to using a subset of the R&A survey to identify ESG integration.

It could be that the way we construct risk-adjusted returns is flawed, because we are disregarding exposure to an ESG factor which might be already priced in. To account for this, we replicate the methodology of Pástor et al. (2021a) and compute E, S, G, and ESG factors. We re-estimate our measure of abnormal returns (alphas) while controlling for these factors. Our main insights remain unaffected.

We argue that the reason behind the positive relationship between financial returns and ESG integration is mutual fund managers being ESG aware as opposed to ESG motivated. The latter prefer ESG firms solely out of a taste-based motive and should, if anything, experience worse financial performance compared to the ESG aware investors (Pedersen et al., 2021). We test this conjecture by looking at funds that label themselves as socially conscious, which we use as a proxy for being ESG motivated. Our main effect is concentrated in the sample of conventional funds, i.e., those that are ESG aware but *not* ESG motivated.

While we find evidence of out-performance, identifying skill remains challenging due to noise, random shocks to stock returns, and short sample periods. Jiang and Zheng (2018) propose to look at funds' performance around earnings announcements, since this it the moment when new fundamental information is released to the markets. Fund managers are considered skilled if their active investment choices prior to the earning announcement are positively correlated to abnormal returns. While we want to establish if fund managers are skilled, we are interested in *ESG-specific* investment skill. Following Avramov et al. (2021), we conjecture that ESG-specific investment skill can be best measured around earnings announcements of firms whose ESG performance is opaque. We proxy for this using the degree of disagreement between several ESG rating agencies.

To test for ESG-specific investment skill, we start by replicating the active fundamental performance (AFP) measure of Jiang and Zheng (2018).[5] We then need to split our sample along the level of disagreement of the firms in a fund's portfolio. This allows us to separate the average active fundamental performance into two parts: one that is AFP for subsection of stocks with high level of ESG uncertainty and the remaining. To do this, we first measure for each portfolio firm the standard deviation of ESG ratings across four rating providers (Sustainalytics, MSCI IVA, Thomson Asset4, and S&P Global ESG Scores) and sort firms along their disagreement. Every quarter, we then compute the AFP measure for each mutual fund for the part of its portfolio with the highest level of ESG disagreement, and AFP measure for the remaining part of its portfolio.

Our findings suggest that mutual funds with a high degree of ESG integration exhibit investment skill. In the top tercile of the sample in terms of ESG disagreement, we find no evidence that AFP is predictive of performance for the average fund. However, when we interact AFP with the measure of ESG integration, we find a strong and positive effect on alpha. This interaction becomes stronger when we look at portfolios with an even higher level of disagreement, e.g., those in the top quartile or quintile. In other words, in portfolios that are exposed to firms where ESG performance is uncertain, only fund managers of families with a high level of ESG integration are able to identify lucrative investment opportunities.

A drawback of using rating disagreement is that our measure could be noise because we have access to a limited number of rating agencies. To mitigate this, we repeat the test above while using RepRisk incidents (Glossner, 2021; Yang, 2021) instead of ESG score disagreement. RepRisk measure negative ESG events, which are called "incidents", from public news sources. We argue that – similarly to earnings announcements – active investment decisions taken before severe incidents happen are informative of investment skill. In this setting we also find suggestive evidence that fund managers from families with a high degree of ESG

[5]The AFP is the covariance between changes in a fund's asset allocation and the underlying stocks' performance during earnings announcements. The AFP measure is high when the fund manager bough (sold) stocks before earnings announcements that performed well (poorly) in the three day window surrounding the release of the information.

integration are skilled. The positive relationship between ESG integration and abnormal performance is concentrated in funds that also have high active fundamental performance (AFP) measured around severe incidents.

This paper makes three contributions of the literature. First, it adds to the studies on the financial implication of ESG incorporation by fund managers. Pedersen et al. (2021) have shown the benefits for risk-adjusted performance of incorporating ESG information at the stock level. Moreover, a rapidly growing literature examines the effects of ESG information, ESG tastes, or both on stock prices (Bolton and Kacperczyk, 2021a,b; Pástor et al., 2021a; Zerbib, 2021). We are the first to study how the benefits of ESG integration at the *institutional level* benefit financial performance. This is important since it builds on real investment choices of fund managers as opposed to constructed portfolios. Moreover, it helps ESG aware investors choose mutual funds that match their preferences.

Second, this paper is also related to the literature studying investment practices of PRI signatories. Existing works have documented greenwashing among some signatories (Gibson et al., 2021; Liang et al., 2020; Kim and Yoon, 2020) while Humphrey and Li (2021) show that fund managers reduce emissions after joining the PRI. Ceccarelli et al. (2022) looks not only at PRI membership status, but also at the level of ESG integration within PRI signatories. They shows that mutual fund investors reward funds with higher inflows *only* when their fund families have a high level of integration. We add to this literature by studying the financial performance of mutual funds whose families are PRI signatories, while taking the level of ESG integration into account.

The final contribution of this paper is to propose a new measure of ESG-specific investment skill. We show that such skill is concentrated around the release of information about firms' fundamentals, but only for those firms with a high level of disagreement in ESG performance. In doing so we add to the insights related to ESG disagreement (Avramov et al., 2021) and measuring general fund manager skill (Jiang and Zheng, 2018).

The remainder of this paper proceeds as follows. Section 2 describes our sample. Section

3 presents the baseline results. Section 4 examines the mechanism through which ESG incorporation affects fund returns. Section 5 concludes.

2 Data

2.1 PRI R&A rating

Since 2014, members of the PRI have the duty of reporting on the practice of responsible investing in accordance to the PRI Reporting and Assessment framework. The signatory members are required to fill the annual R&A report in the reporting window between the 6th of January of each year and the 31st of March. Signatories receive their Assessment reports in early July each year, based on the submitted responses during the recent reporting period. This report consists of several modules, documenting the responsible investing practices of institutions across their organization. The main modules are 1) Strategy & Governance 2) Listed Equity 3) Active Ownership and 4) Asset Manager Selection, Appointment and Monitoring.[6] Within each modules there are several types of questions: Mandatory to report and disclose, mandatory to report and voluntary to disclose, and voluntary to report and disclose. The first type of questions are published as part of the investors' transparency reports on the PRI website.[7] The second type are published only with the signatory's consent while for the last type the signatory can opt not to answer. Ceccarelli et al. (2022) provide detailed discussion of the benefits and responsibility of being a PRI signatory in the space of responsible investment.

Signatories' response to the annual survey report are assessed by the PRI staff members. The standardized performance band for each module takes values from "A+" to "E", where "A+" indicates highest level of ESG incorporation. Figure 1 shows one such example.[8]

[6]This applies for surveys filled within the period from 2014 to 2020. From 2021, the PRI introduced the revised Reporting and Assessment framework with the purpose of improving reporting process and quality.

[7]See PRI public signatory's transparency report here.

[8]See an example of a private transparency report, which signatory voluntarily published their report.

[Insert Figure 1 here]

The aggregate R&A rating score, denoted as $\varnothing R\&A$, is defined as the average score across all modules: (1) Strategy and Governance, (2) Selection, appointment of managers - SAM: Listed Equity, (3) SAM: Fixed Income, (4) Listed Equity: Screening, (5) Listed Equity: Integration, (6) Listed Equity: Active Ownership, (7) Private Equity, (8) Direct Property, (9) Direct Infrastructure , and (10) Fixed Income. We then categorize institutions into 4 groups based on the aggregate R&A rating score. $\varnothing R\&A \geq A$ is an indicator variable taking value of 1 for funds that have an average score of A or greater across all modules—a proxy for the highest level of ESG integration by a mutual fund family. $\varnothing R\&A \in [B, A)$ is an indivator variable for funds that have an average score of B or greater, but smaller than A across all modules, while $\varnothing R\&A < B$ is an indicator variable for funds that have an average score smaller than B across all modules, and *No Rating* an indicator variable for funds with no R&A rating including funds of signatories in one-year grace period and/or funds of non-PRI signatories.

2.2 Mutual fund data

Our fund sample consists of all open-end equity mutual funds from survivorship-bias-free data from Morningstar for the period from January 2014 to December 2019. We collect fund-specific information including total assets under management at the fund level (the sum of the assets in the different share classes) and fund-family level (the sum of the assets in the different funds of any given fund-family). The fund age is retrieved from the largest share class (Ceccarelli et al., 2022). We also collect information for expense ratio, load fee, turnover ratio for additional analysis but we do not drop observations with missing information because of the limited availability of data for the non-US sample. Detailed description of variables are provide in Appendix Table A1.

For fund financial measures, we employ gross returns, Morningstar-category adjusted benchmark returns (proxy for bench-mark adjusted returns) and alpha over CAPM, 3-risk

factor and 4-risk factor model. We obtain the monthly regional risk-factor from AQR benchmark factor datasets.[9] For alpha measure, we require 3 years of return data to estimate the factor model (with minimum of 24 monthly observations). Our first estimate of a fund's alpha is for January 2012. A positive (negative) alpha indicates that the fund out-performs (under-performs) the regional benchmark.

We then manually match the Morningstar fund-level sample to the PRI signatories data using the fund family name (Ceccarelli et al., 2022). This matching step decides the fund rating band out of the rating groups described above.

2.3 Summary statistics

Our final Morningstar fund sample, with non-missing fund risk-adjusted returns for the period from 2014 to 2019, include 2,608 fund families consisting of 27,983 unique funds. Figure 2 plots the sample distribution of the R&A rating by year. The number of PRI signatories of this sample increases from 348 in 2014 to 616 at the end of 2019, with the number of signatories with the highest R&A rating account for the most significant rise from 12 in 2014 to 296 in 2019, translating into stark growth in the number of funds with highest rating as shown in Panel B of Figure 2.

[Insert Figure 2 here]

To verify that R&A rating is a reasonable proxy for ESG integration by mutual fund families, we examine the ESG score distribution of funds by rating groups. Figure 3 show that A/A+ signatories have higher portfolio footprint on average and higher fraction of social conscious funds.[10]

[Insert Figure 3 here]

[9] AQR Betting Against Beta: Equity Factors Data, Monthly

[10] In untabulated tests, we also find that on average, fund-families with the highest rating have higher fraction of socially conscious funds after controlling for the family size.

Table 1 reports the descriptive statistics of the fund sample. Panel A shows summary statistics of variables for the mutual funds sample used in our analysis. The sample average risk-adjusted returns are negative. Panel B shows the sample average Spearman correlation coefficients of the main variables used in our analyses. We observe a positive correlation between risk-adjusted returns and R&A rating, suggesting that the higher level of ESG intergration by the mutual fund families is associated with higher risk-adjusted returns since 2014.

[Insert Table 1 here]

3 Results

This section explores the relationship between the level of a fund's ESG integration and its financial performance. To build intuition, we start with a univariate comparison of mean returns by level of integration. Table 2 below shows that there is a considerable difference between average returns in the sample of funds from families that receive the highest rating in the Reporting & Assessment framework and those from families that are not even PRI signatories. The difference is statistically significant and large, corresponding to 10% of a standard deviation in monthly gross returns. We have similar discrepancies when looking at risk-adjusted performance, e.g., category-adjusted or using Fama-French factor models. In the next sub-section we formally test whether these difference persists in a regression setup.

[Insert Table 2 here]

3.1 R&A rating and fund performance

We run the following regression to test whether ESG aware funds over-perform their peers.

$$Return^{\tau}_{f,t} = \beta_1 \varnothing R\&A_{f,t} + \beta_2' \Gamma_{f,t-1} + \beta_3 \delta_t \times \gamma_f + \epsilon_{f,t} \quad (1)$$

$Return^{\tau}_{f,t}$ is our measure of fund's f return during month t and τ captures the various return measures that we use: gross, category-adjusted, CAPM, and Fama-French three and four factor models. $\varnothing R\&A_{f,t-1}$ is our proxy for a fund's level of ESG integration and measures the average Reporting & Assessment score that the fund family receives. $\Gamma_{f,t-1}$ is a vector of time-varying fund-level fixed effects, the logarithm of fund and fund-family size, and fund age. $\delta_t \times \gamma_f$ are our category-by-months fixed effects which absorb time-varying trends specific to a fund investment strategy. $\epsilon_{f,t}$ captures the standard errors, which are clustered at the fund and month level. Table 3 shows the results from this regression.

[Insert Table 3 here]

In column (1) we find that funds with the highest level of ESG integration, i.e., those with an average R&A rating of A or higher, outperform non-rated funds by 4.1 basis point in gross returns per month, with the t-statistics of 2.27. Columns (2) to (5) show that controlling for standard risk-factors does not change our interpretation.

It could be that funds with higher expense ratios are also those that are more willing to invest in ESG integration. To make sure that this is not the case, we repeat our analysis while including the fund's fee structure as controls. Panel A of Appendix Table A3 shows that our results remain robust.[11] Panel B reports the results using alternative measure of alpha using country-level benchmark risk factors. Chaieb et al. (2021) document that regional benchmark factor do not capture all country-level risk factors, which are priced in. Our main results are also robust to using a different measure of alpha, defined as returns over country-level market, size, value and momentum risk factors benchmark. In addition, Panel C provides the results using module AUM-weighted PRI R&A rating construction, where we exclude the *Strategy and Governance* module score.[12] This construction method of rating takes into account the relative importance of module score to fund asset class.

[11]Since data on fund net expense ratio is not available for a large fraction of non-US domiciled funds, controlling for fund expense and fee charges significant reduces the testing sample. Our interpretation is robust to this alternative specification controlling for *Expense Ratio* and *Load Fee*.

[12]Since the funds' S&G score follows a negatively skewed distribution in our sample, it could bias the average score.

We further examine the sensitivity of the documented results to the construction of R&A rating. Appendix Table A4 shows that our results are robust to using the restricted version of R&A rating, which is constructed based on the restricted sample of reporting modules filled out for approximately 90% of signatories: SG–Strategy & Governance, LEI–Listed Equity Screening, Integration, and LEA–Active Ownership (Ceccarelli et al., 2022). Panel B of this Table shows that the List Equity modules have the highest power in explaining the outperformance of funds with high over R&A rating.

In addition, We document that the geographical variations of the relationship between ESG incorporation and returns. Appendix Table A5 show observed effect mainly comes from European funds and R&A rating combination, not from the U.S. domiciled funds or funds from other regions. Note that, there are only 4 Asia-Pacific countries that are included in our sample because of the availability of risk-factor benchmark. Figure A1 shows that the highest intensity of institutions with R&A rating of A/A+, defined as the country-level fraction of A/A+ institutions over total number of institutions in the respective countries of headquarter, is observed in the EU and Pacific region.

Although our baseline results provide evidence that the out-performance of high R&A rated funds is not driven by several fund-specific effects documented in prior studies including fund size, age and investment styles, there may be plausible alternative explanations related to unobserved fund family, fund and manager-level heterogeneity.

First, given the economics of the asset management industry, family-level unobserved factors other than the level of ESG incorporation, as proxied by R&A rating, are also a relevant concern. To address this concern, we include fund-family fixed effects in our regressions. Column (1) and (2) of Table 4 show that funds with the highest R&A ratings remains positive after including fund time-invariant unobservables. The estimated coefficients of A/A^+ on gross returns is marginally insignificant at 10% level as shown in Column (1), while results reported in Column (2) show that the estimated coefficients of A/A^+ on gross returns is marginally insignificant at 10% level. Our results suggest that even though the unobserved

time-invariant family-characteristics have power in explaining fund performance, they do not completely explain away the documented outperformance of high R&A rated funds—those with higher level of ESG incorporation.

Second, PRI R&A ratings are relatively persistent during our sample period, one concern is that the cross-sectional differences in R&A ratings might be capturing time-invariant heterogeneity across funds. To address this concern, we include fund fixed effects in our regression specification. Results presented in Column (3) and (4) of Table 4 suggest that time-invariant fund-level drivers of performance cannot explain superior returns of high R&A rating funds.

Moreover, fund-managers omitted time-invariant characteristics such as managers' preference and ability, might absorb all documented positive effect. To be more specific, funds of PRI signatory institutions with the highest R&A rating might be managed by cluster of managers with higher ability, and thus the superior performance could be the result of manager attributes rather than the fund or fund-family attributes. Column (5) and (6) of Table 4 further controls for manager fixed effects.[13]. Although manager skill has power in explaining the superior performance of A/A+ R&A rated funds, the relationship between ESG incorporation as proxied by R&A rating and performance remain positive. Our premises remain unchanged when using alternative returns measures including $Alpha1F$ and $Alpha3F$, as shown in Table A2.

[Insert Table 4 here]

3.2 ESG awareness by mutual fund family

We next examine the relationship between financial returns and the ESG investment style of fund managers. Pedersen et al. (2021) argue that the reason behind the positive relationship between financial returns and ESG integration is mutual fund managers being ESG aware

[13]Number of observations for this test is smaller than the baseline test because of missing fund manager information, where the name of fund manager(s) is either missing or identified as "Not Disclosed"

as opposed to ESG motivated. The latter prefer ESG firms solely out of a taste-based motive and should, if anything, experience worse financial performance compared to the ESG aware investors. We test this conjecture by looking at funds that are labeled as "socially conscious" by Morningstar, based on fund name or fund investment prospectus. We use the 'socially conscious' status as a proxy for being ESG motivated. Table 7 shows that the positive relationship between ESG incorporation and fund returns is most concentrated in conventional funds of highest R&A rating,

[Insert Table 5 here]

4 Fund investment skill

4.1 Active fundamental performance

Fund manager skill is difficult to measure. We employ the active fundamental performance (AFP) measure proposed by Jiang and Zheng (2018) since it a compelling forward-looking measure to proxy for fund managers' skill. AFP captures the performance of the fund around earning announcements, when new information about firm fundamental is released to the market and that allows for repricing to occur. We employ this measure to investigate the difference in fund specific-skill (in ESG investment) and fund-fanily ESG incorporation in impacting fund returns. We first replicate the index-based AFP measure of Jiang and Zheng (2018) because it is comprehensive in capturing the information set of active fund managers. For each fund in each quarter, the index-based AFP is defined as the sum of product of quarterly portfolio active weights (difference between portfolio weights and corresponding passive benchmark portfolio weights) and subsequent 3-day abnormal returns surrounding

earning announcements.[14]

$$Index\text{-}based\ AFP_{j,t} = \sum_{i=1}^{N_j}(w_{i,t}^{j} - w_{i,t}^{bj})CAR_{i,t}$$

where $CAR_{i,t}$ is the 3-day abnormal returns surrounding quarterly earnings announcements, ($w_{i,t}^{j}$ is the weight of stock i in fund j's portfolio at the start of quarter t, ($w_{i,t}^{bj}$ is the weight of stock i in fund j's benchmark portfolio at the start of quarter t. The 3-day CAR[-1, 1] refers to the sum of daily abnormal returns over the Carhart 4-factor regional risk benchmark from 1 day before to 1 day after earnings announcements.

The analysis of fund performance on fund's AFP is done at the quarterly level since portfolio stock earnings are announced quarterly. We track the performance of a particular fund for the subsequent quarter after the release of quarterly earnings of majority of portfolio firms. We find that on average, fund's AFP has strong funds predictive power of future fund returns. Funds with higher AFP outperforms other funds in following periods, unconditional on ESG incorporation.

[Insert Table 6 here]

4.2 Active fundamental performance and ESG Disagreement

Our hypothesis is that - if high R&A funds have skill in assessing firm ESG value under uncertainty (Avramov et al., 2021) - we should see them out-perform around earning announcements of firms with high ESG rating disagreement.

We employ the index-based AFP measure but only consider firms with high ESG disagreement observed at the earnings announcement date. The idea is that during such events new information hits the markets and repricing occurs. We defined ESG disagreement score

[14]We use quarterly instead of monthly data for this test because the earnings announcements of portfolio firms are observed at the quarter-level. For stocks that publish multiple earnings in any given quarter, we keep the first earnings announcement of the firm as the unique quarterly earnings announcement. We then observe CAR[-1,+1] around the unique earnings announcement event for the construction of funds' AFP measure.

as the standard deviation of the four ESG raters (MSCI IVA, Thomson Reuters Asset4, Sustainalytics and S&P Global ESG data) when there are all four ESG ratings available, or minimum of two ESG Ratings when only two are available (Gibson et al., 2021; Serafeim and Yoon, 2021). We then classify firms into annual quintiles of ESG disagreement to construct AFP^{Disag} measure conditioned on the high ESG disagreement group and AFP^{Others} measure for the remaining portfolio firms with lower ESG disagreement score.

We find that there exists positive returns to fund-family and fund-specific skill in selecting stocks with high ESG disagreement, which on average generate positive returns around earnings announcement. In fact, Gibson et al. (2021) find that there is a risk premium for firms with higher ESG rating disagreement for the sample S&P 500 firms in the period from 2010 to 2017. Our results are robust to alternative sample partition of ESG disagreement, including firms with high ESG disagreement classified by top quartile or tercile of disagreement score. However, we do not observe additional value of family-level skill in the high ESG disagreement by sample median-split.

[Insert Table 7 here]

In untabulated tests, we show that our AFP measure conditioned on ESG disagreement does indeed capture ESG-specific information available to skilled fund managers. Specifically, we do not observe the positive interaction term coefficient from the test of fund returns on AFP measure conditioned on quarterly analyst earnings forecasts disagreement, suggesting that ESG disagreement is not simply just a proxy for portfolio firm business complexity unrelated to ESG factor.

4.3 Active fundamental performance and RepRisk incidents

We further perform additional test on the relationship between active fundamental performance conditional on ESG information. Our conjecture is that similar rationale to earning announcement events can be applied to negative ESG incidents. We thus compute AFP^{RR}

around the month of ESG incidents of portfolio firms, where stock prices are reevaluated, specifically negatively adjusted following the negative incident news.

We construct the modified version of AFP measure as the correlation of fraction of portfolio weight exposed to incidents events and monthly CARs. We use this approach because of the following 2 reasons. First, unlike firm quarterly earnings announcement where we can observe 3-day CARs around specific earnings announcement dates, we only observe the month-interval of high RepRisk incident score, thus we employ the monthly abnormal returns around incidents as a proxy for returns. And second, unlike earnings announcement events when more than 95% of portfolio firms report earnings in the second month of each quarter, RepRisk events are unexpected in the timing of occurrence. Thus, we use total portfolio weight exposed to incidents events as proxy for portfolio weight (Lo, 2008).

The analysis of fund performance on fund's AFP^{RR} is done at the monthly level. We track the performance of a particular fund for the subsequent month following. Our results suggest that funds with high R&A ratings have better investment skill in predicting and allocating to stock with future negative ESG events, and thus outperform other funds in month following the month that any ESG incidents of portfolio firms occur.

[Insert Table 8 here]

Appendix Table A6 reports the results of tests using ESG-specific AFP by fund domicile. Panel A shows that the positive effect of fund R&A and AFP^{Disag} on α^{4F}_{t+1} is concentrated in EU-domiciled funds. The same interpretation is mirrored from the results reported in Panel B for tests using AFP^{RR}. Overall, our findings suggest that the effect of skill is more pronounced in the EU-domiciled fund sample.

4.4 Alternative explanations

One possible reason for the observed out-performance is that high R&A funds have higher exposure to ESG-factor, and the ESG or its component E,S,G factor generate superior

returns during our sample period. In particular, Pástor et al. (2021b) document that U.S. green stocks outperformed brown stocks in recent years as climate concerns strengthen. In this section, we examine whether fund exposure to ESG factor is the channel through which high RA rating funds outperform other funds.

4.4.1 Fund exposure to regional ESG-factor

We estimate fund alpha over 2 risk-factor model including size and each E/S/G/ESG-factor, which measures fund over-performance (or under-performance) compared to the corresponding benchmark. For each aggregate regional equity portfolios, we first construct the regional E,S,G, and ESG-factor using MSCI IVA ESG data following the method proposed in Pástor et al. (2021b). This step allows us to estimate the regional E/S/G/ESG benchmark factor. We then estimate fund ESG-beta exposed to the regional ESG-benchmark factor, and derive monthly alpha over the regional market risk and ESG-factor risk. Our results suggest that fund regional ESG exposure do not explain the superior performance of high R&A rating funds. We also replicate the above tests using Sustainalytics ESG data for constructing regional E/S/G/ESG-factor. Results reported in Appendix Table A7 suggest that our interpretation remain unchanged.

[Insert Table 9 here]

4.4.2 Fund-level sustainability ratings

One could argue that the outperformance is concentrated in funds with better ESG ratings in the recent years, when the value of ESG score is appreciated due to investors' attention and demand. However, we argue that ESG rating cannot reliably predict future returns since the it is back-ward looking, and the information captured by the R&A rating is dissimilar to that of the fund ESG score. Indeed, our premises remain unchanged by adding ESG ratings in our baseline analysis as a control. Results in Table 10 show that the positive association between R&A rating and fund returns is robust to the inclusion of portfolio-level

ESG scores, proxied by normalised Sustainalytics ESG ranking within investment category and time (Column (1) and (2)) or proxied by Morningstar 'Globes' sustainability ratings (Column (3) and (4)).

[Insert Table 10 here]

5 Conclusion

This paper contributes to the large discussion on the relationship between ESG incorporation and financial performance. We document a positive association between the level of ESG incorporation of mutual fund families and fund performance. This is robust to controlling to funds' exposure to the regional ESG-factor and funds' portfolio sustainability ratings. Our results are concentrated in the sample of conventional funds of high incorporation groups—those that are ESG-aware—instead of the sample of socially conscious funds—those that are ESG-motivated.

We further investigate *why* ESG integration at the fund-family level can generate positive returns. We leverage the measure of active fundamental performance developed by Jiang and Zheng (2018) to identify active investment skill. Our findings suggest that only mutual funds with high degree of ESG integration exhibit ESG-specific investment skill, especially in the presence of ESG uncertainty or unexpected events. Overall, our findings support the conjecture that ESG-aware investors can utilize their ESG informational advantage to identify lucrative investment opportunities.

This paper has several limitations that could be addressed with further research. First, given that testing asset prices requires long-horizon data but the sample data used to proxy for ESG integration is only available from 2014, it is difficult to infer whether the documented positive relationship between ESG integration and fund returns remains in the future. Second, the question of *how* positive returns can be consistently generated by incorporating ESG matters into investment decisions remains unresolved. In addition, the ESG incorporation

and returns relationship can vary with the broader range of investment products over time and the revolving influence of new regulations and policies in this space.

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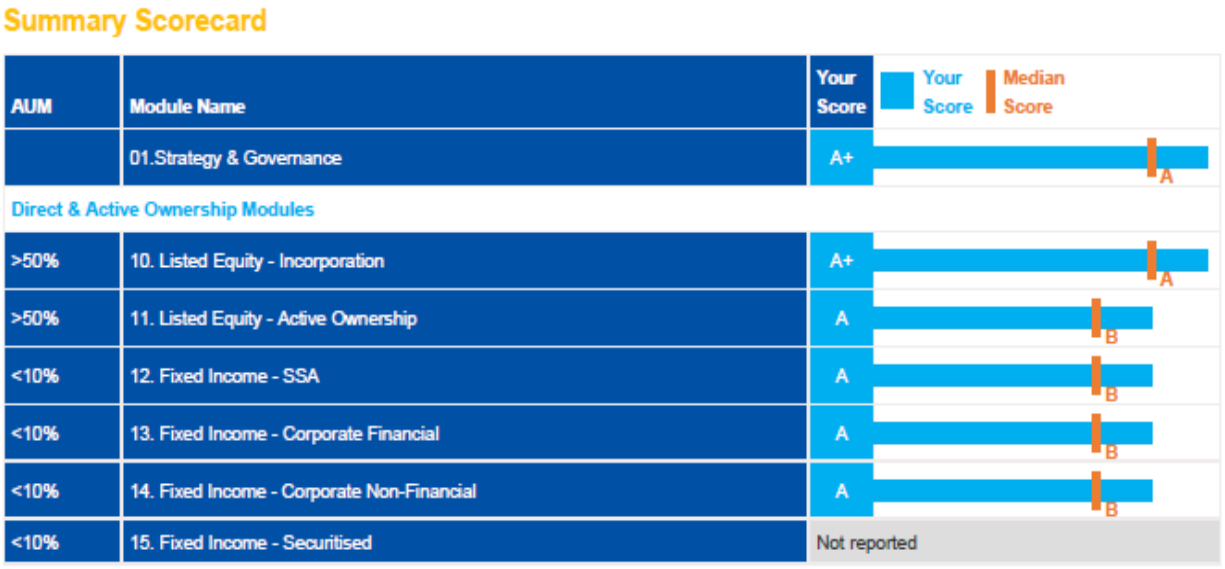
Figures

Figure 1: Example of Reporting and Assessment Scorecard
This figure shows an example of a Reporting and Assessment Scorecard that is voluntarily published by a PRI signatory.

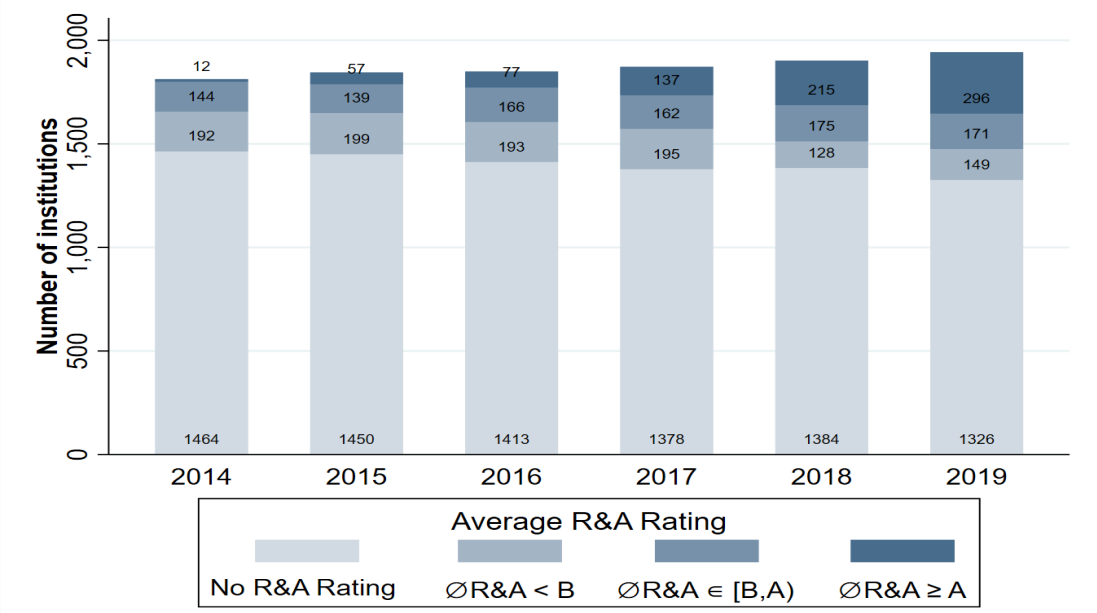


Summary Scorecard

AUM	Module Name	Your Score	Your Score / Median Score
	01.Strategy & Governance	A+	A
Direct & Active Ownership Modules			
>50%	10. Listed Equity - Incorporation	A+	A
>50%	11. Listed Equity - Active Ownership	A	B
<10%	12. Fixed Income - SSA	A	B
<10%	13. Fixed Income - Corporate Financial	A	B
<10%	14. Fixed Income - Corporate Non-Financial	A	B
<10%	15. Fixed Income - Securitised	Not reported	

Figure 2: Sample distribution of the R&A rating by year
This figure plots the R&A rating for the sample of Morningstar mutual funds from January 2014 to December 2019. Panel A plots the number of institutions by the R&A rating category, while Panel B plots the number of funds by the rating category over the sample period from 2014 to 2019.

Panel A: Number of institutions



Panel B: Number of funds

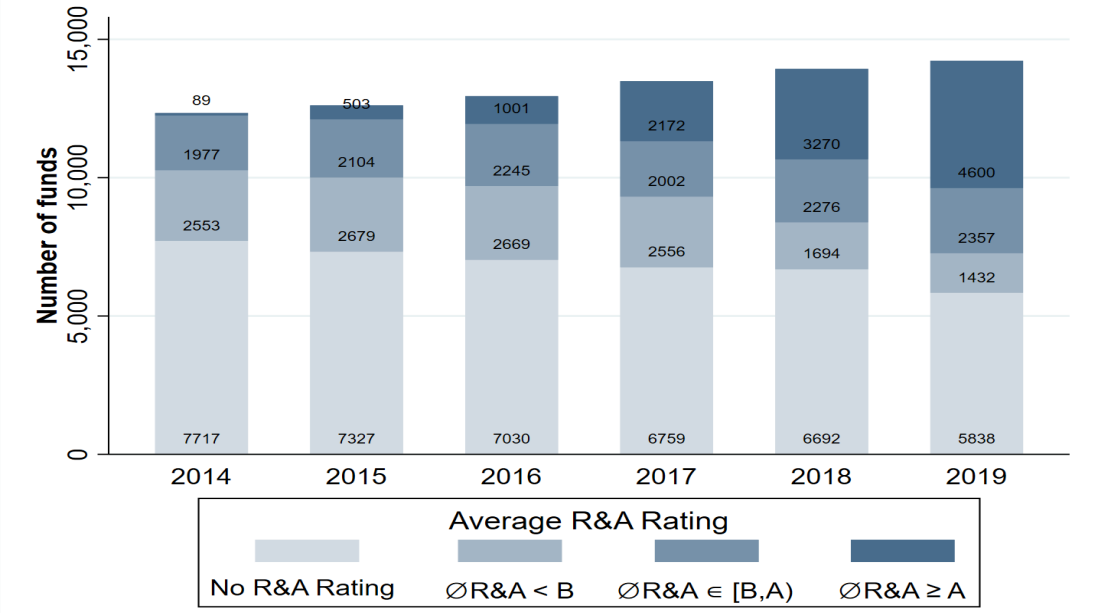
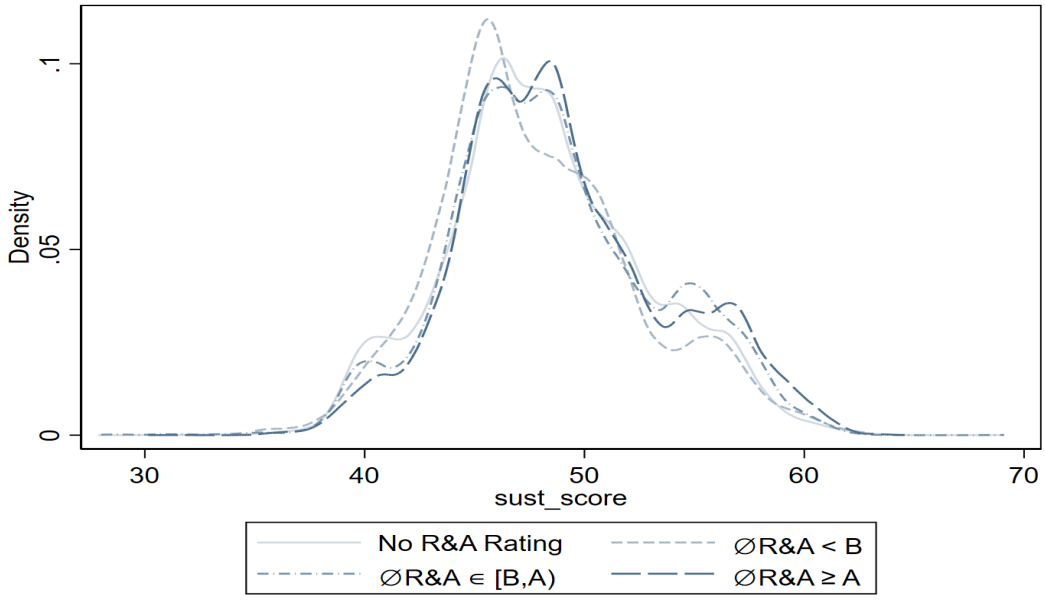
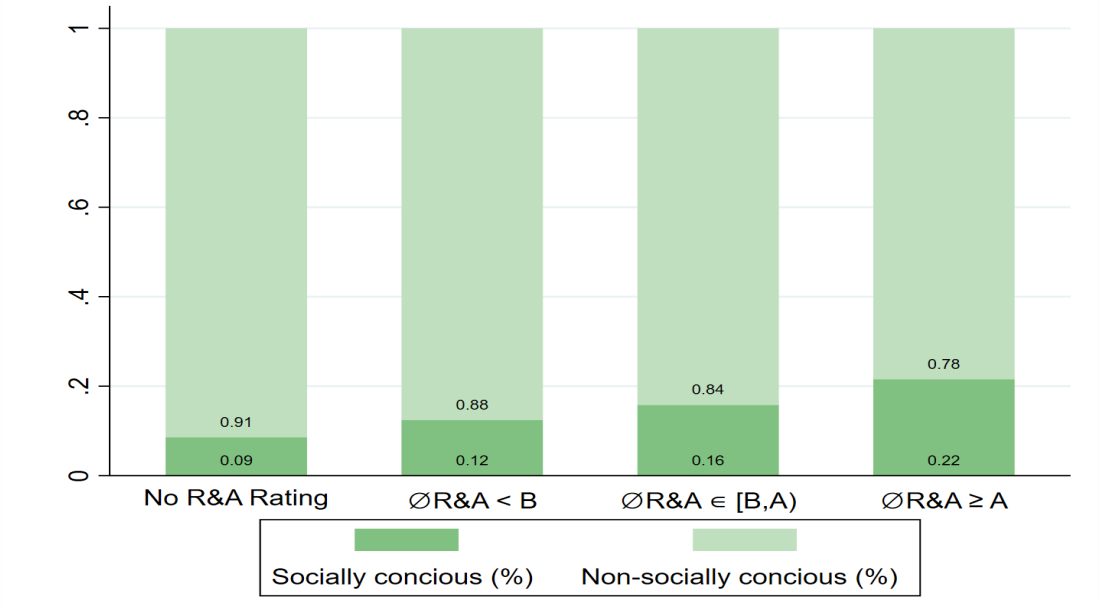


Figure 3: ESG rating distribution of signatories by average RA score
This figure plots ESG score distribution of signatories by average RA score.

Panel A: ESG score distribution by R&A ratings



Panel B: Fraction of socially conscious funds by R&A ratings



Tables

Table 1: Descriptive statistics

This table shows summary statistics for the sample of Morningstar mutual funds used in our analysis. The sample is at the fund-month level and covers the period from 2014 to 2019. Panel A reports the sample descriptive statistics. Panel B reports the sample average Spearman correlation coefficients. Appendix Table A1 provides variable definitions.

Panel A: Summary statistics

	Obs	Mean	S.D.	p25	p50	p75
Fund characteristics						
Gross Return	838,042	0.56	3.66	-1.68	0.72	2.90
Mstar categ-adj Return	838,042	-0.01	1.31	-0.63	0.00	0.61
Alpha 1F	838,042	-0.09	1.90	-1.09	-0.09	0.90
Alpha 3F	838,042	-0.09	1.85	-1.04	-0.10	0.84
Alpha 4F	838,042	-0.11	1.88	-1.06	-0.11	0.83
Log Fund Assets$_{t-1}$	838,042	18.49	1.94	17.18	18.51	19.85
Log Fund Age$_{t-1}$	838,042	2.47	0.58	2.05	2.55	2.92
Fund-family characteristics						
Log Family Assets$_{t-1}$	838,042	23.09	2.18	21.75	23.44	24.72
$\varnothing R\&A_{t-1}$	431,416	4.34	0.96	3.60	4.40	5.08
$\varnothing R\&A_{t-1} \geq A$	838,042	0.15	0.35	0.00	0.00	0.00
$\varnothing R\&A_{t-1} \in [B, A)$	838,042	0.16	0.37	0.00	0.00	0.00
$\varnothing R\&A_{t-1} < B$	838,042	0.17	0.38	0.00	0.00	0.00
No R&A Rating	838,042	0.52	0.50	0.00	1.00	1.00

Panel B: Sample average Spearman correlation coefficients

	(1)	(2)	(3)	(4)	(5)
(1) Alpha 4F	1				
(2) Log Fund Assets$_{t-1}$	0.0152	1			
(3) Log Fund Age$_{t-1}$	0.0028	0.1375	1		
(4) Log Family Assets$_{t-1}$	0.0198	0.4094	0.0618	1	
(5) $\varnothing R\&A_{t-1}$	0.0205	0.1345	0.0237	0.3902	1

Table 2: ESG integration and fund performance: Univariate descriptive statistics
This table reports fund returns sorted into 4 groups based on PRI R&A rating. Funds' gross returns are calculated before deducting fees and expenses. Risk-adjusted returns are computed using the CAPM model (Alpha 1F), the Fama-French model (Alpha 3F), the Carhart model (Alpha 4F), or as the difference between the gross returns and the returns of the fund's benchmark, as provided by Morningstar. Appendix Table A1 provides variable definitions.

	No Rating	$\varnothing R\&A < B$	$\varnothing R\&A \in [B, A)$	$\varnothing R\&A \geq A$	Diff. (t-stat)	Diff. (t-stat)
	(1)	(2)	(3)	(4)	(4) - (1)	(4) - (2)
Number of obs.	434,874	142,469	137,377	123,322		
Gross Return	0.481	0.538	0.566	0.850	0.369***	0.312***
					(31.27)	(21.91)
Categ-adj	-0.039	-0.004	0.025	0.015	0.054***	0.019***
Return					(12.60)	(3.91)
Alpha 1F	-0.136	-0.062	-0.038	-0.028	0.108***	0.034***
					(17.86)	(4.63)
Alpha 3F	-0.124	-0.064	-0.054	-0.039	0.084***	0.025***
					(14.33)	(3.48)
Alpha 4F	-0.137	-0.090	-0.076	-0.047	0.090***	0.043***
					(15.08)	(5.83)

Table 3: R&A rating and fund performance

This table reports results from regressions of fund monthly performance variables on PRI R&A rating. In model (1), fund returns are calculated before deducting fees and expenses. Model (2) accounts for the difference between the fund gross return and the return of the fund benchmark, as provided by Morningstar. Models (3) to (5) adjust respectively for exposure to the market factor (CAPM), the Fama-French three-factor model, and the Carhart model. All the control variables are lagged by one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at both time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

	Gross Return	Mstar categ-adj Return	Alpha 1F	Alpha 3F	Alpha 4F
	(1)	(2)	(3)	(4)	(5)
$\varnothing R\&A_{t-1} \geq A$	0.041**	0.033**	0.041**	0.041**	0.056***
	(2.27)	(2.38)	(2.29)	(2.35)	(3.39)
$\varnothing R\&A_{t-1} \in [B, A)$	0.041***	0.036***	0.040***	0.030*	0.035**
	(2.96)	(4.07)	(2.69)	(1.97)	(2.19)
$\varnothing R\&A_{t-1} < B$	0.017	0.009	0.019	0.015	0.018
	(0.90)	(0.99)	(0.98)	(0.77)	(0.89)
Log Fund Assets$_{t-1}$	0.015***	0.015***	0.018***	0.015**	0.013**
	(2.71)	(5.91)	(3.05)	(2.48)	(2.17)
Log Fund Age$_{t-1}$	-0.005	-0.016**	-0.015*	-0.013	-0.007
	(-0.46)	(-2.32)	(-1.89)	(-1.53)	(-0.81)
Log Family Assets$_{t-1}$	0.011***	0.010***	0.008**	0.007**	0.004
	(3.14)	(3.94)	(2.60)	(2.18)	(1.36)
Categ x Time FE	Yes	Yes	Yes	Yes	Yes
N	828,647	828,647	828,647	828,647	828,647
Adj R2	0.824	0.013	0.368	0.343	0.346

Table 4: R&A rating and fund performance - Fixed Effects

This table reports results from regressions of fund monthly performance variables on PRI R&A rating. In model (1) and (2), we further control for fund-family fixed-effects. Model (3) and (4) include fund fixed-effects. Model (5) and (6) include fund manager fixed-effects. All fund control variables are lagged by one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

	Gross Return	Alpha 4F	Gross Return	Alpha 4F	Gross Return	Alpha 4F
	(1)	(2)	(3)	(4)	(5)	(6)
$\varnothing R\&A_{t-1} \geq A$	0.058	0.081**	0.062*	0.086**	0.048*	0.063**
	(1.64)	(2.27)	(1.72)	(2.38)	(1.94)	(2.61)
$\varnothing R\&A_{t-1} \in [B, A)$	0.036	0.039	0.040	0.044	0.030	0.031
	(1.40)	(1.37)	(1.56)	(1.55)	(1.48)	(1.49)
$\varnothing R\&A_{t-1} < B$	0.010	0.006	0.013	0.011	0.003	-0.002
	(0.38)	(0.25)	(0.51)	(0.47)	(0.14)	(-0.10)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes	Yes
Family FE	Yes	Yes				
Fund FE			Yes	Yes		
Manager FE					Yes	Yes
N	828,631	828,631	828,464	828,464	535,439	535,439
Adj R2	0.825	0.350	0.825	0.352	0.847	0.325

Table 5: Socially conscious funds

This table reports results from regressions of fund monthly performance variables on PRI R&A rating, partitioned by funds' 'socially conscious' status. Socially conscious is an indicator variable taking value of 1 if the fund is defined as socially conscious in either their name or prospectus. All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

	Socially conscious funds		Non-socially conscious funds	
	Alpha 4F	Alpha 4F	Alpha 4F	Alpha 4F
	(1)	(2)	(3)	(4)
$\varnothing R\&A_{t-1} \geq A$	0.051*	0.004	0.072***	0.129***
	(1.90)	(0.06)	(3.13)	(2.76)
$\varnothing R\&A_{t-1} \in [B, A)$	0.010	-0.038	0.052**	0.070*
	(0.38)	(-0.65)	(2.19)	(1.82)
$\varnothing R\&A_{t-1} < B$	0.008	-0.055	0.034	0.012
	(0.35)	(-1.45)	(1.04)	(0.40)
Log Fund Assets$_{t-1}$	0.011	-0.008	0.003	-0.004
	(1.19)	(-1.26)	(0.28)	(-1.02)
Log Fund Age$_{t-1}$	0.026*	0.011	0.003	0.023
	(1.90)	(0.94)	(0.18)	(1.21)
Log Family Assets$_{t-1}$	0.001	-0.121***	0.008	-0.142***
	(0.23)	(-2.79)	(1.64)	(-4.70)
Time	Yes	Yes	Yes	Yes
Family FE		Yes		Yes
N	103,316	103,312	734,726	734,710
Adj R2	0.027	0.031	0.019	0.024

Table 6: Fund active fundamental performance (AFP)

This table reports results from regressions of fund performance variables on PRI R&A rating and index-based AFP measure. The mutual fund index-based AFP is defined as the sum of the product of active portfolio weights (difference between portfolio weights and corresponding passive benchmark weights) and portfolio stocks' subsequent 3-day abnormal returns surrounding earning announcements. Fund returns are observed in the second month in each quarter to the first quarter in the following quarter after construct quarterly AFP, when more than 95% of holding firms report firm quarterly earnings. We employ α^{4F}_{t+1} as the main return measure in the similar fashion as Jiang and Zheng (2018). All fund control variables are observed in the quarter prior to the AFP measure and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

	AFP_t	α^{4F}_{t+1}	α^{4F}_{t+1}	α^{4F}_{t+1}
	(1)	(2)	(3)	(4)
AFP_t		0.475***	0.476***	0.475***
		(20.38)	(21.02)	(21.15)
$\varnothing R\&A_{t-1} \geq A \times AFP$			-0.006	-0.003
			(-0.16)	(-0.09)
$\varnothing R\&A_{t-1} \geq A$	-0.001		0.081**	0.011
	(-0.08)		(2.35)	(0.16)
$\varnothing R\&A_{t-1} \in [B, A)$	0.009		0.046	-0.031
	(1.24)		(1.29)	(-0.59)
$\varnothing R\&A_{t-1} < B$	0.005		0.036	-0.035
	(1.05)		(1.28)	(-0.80)
Log Fund Assets$_{t-1}$	-0.002	0.019*	0.018*	-0.001
	(-1.20)	(1.85)	(1.81)	(-0.31)
Log Fund Age$_{t-1}$	0.007**	-0.015	-0.013	0.007
	(2.49)	(-1.11)	(-1.03)	(0.61)
Log Family Assets$_{t-1}$	0.002	0.007	0.002	-0.069
	(1.34)	(1.32)	(0.41)	(-1.60)
Categ x Time	Yes	Yes	Yes	Yes
Family FE				Yes
N	173,337	126,509	126,509	126,480
Adj R2	0.113	0.301	0.301	0.309

Table 7: AFP and ESG Disagreement

This table reports results from regressions of fund performance variables on PRI R&A rating and AFP measure conditioned on stock ESG disagreement. AFP_t^{Disag} is constructed as index-based AFP for only stocks with highest level of ESG disagreement. AFP_t^{Others} is constructed as index-based AFP for the remaining portfolio stocks with lower level of ESG disagreement. Fund returns are observed in the second month in each quarter to the first quarter in the following quarter after construct quarterly AFP, when more than 95% of holding firms report firm quarterly earnings. We employ α_{4F} as the main return measure in the similar fashion as Jiang and Zheng (2018). All fund control variables are observed in the quarter prior to the AFP measure and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

ESG Disagreement of holdings:	Top Quintile			Top Quartile			Top Tercile			Above Median		
	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
AFP_t^{Disag}	0.459***	0.446***	0.444***	0.474***	0.462***	0.457***	0.500***	0.486***	0.484***	0.482***	0.475***	0.475***
	(8.90)	(9.06)	(9.18)	(10.08)	(10.46)	(10.75)	(12.60)	(12.70)	(12.91)	(15.04)	(14.92)	(15.57)
AFP_t^{Others}	0.462***	0.465***	0.465***	0.457***	0.460***	0.461***	0.439***	0.446***	0.446***	0.436***	0.443***	0.441***
	(15.42)	(16.18)	(16.71)	(15.64)	(16.33)	(16.92)	(12.74)	(13.70)	(14.16)	(11.17)	(11.90)	(11.85)
$\varnothing R\&A_{t-1} \geq A \times AFP_t^{Disag}$		0.128**	0.123*		0.120*	0.120*		0.137**	0.136**		0.064	0.065
		(2.07)	(1.97)		(1.80)	(1.77)		(2.35)	(2.30)		(1.27)	(1.27)
$\varnothing R\&A_{t-1} \geq A \times AFP_t^{Others}$		-0.023	-0.020		-0.030	-0.029		-0.056	-0.054		-0.056	-0.055
		(-0.54)	(-0.46)		(-0.63)	(-0.60)		(-1.08)	(-1.04)		(-0.81)	(-0.80)
$\varnothing R\&A_{t-1} \geq A$		0.078**	0.010		0.077**	0.009		0.078**	0.010		0.079**	0.011
		(2.31)	(0.14)		(2.29)	(0.12)		(2.33)	(0.14)		(2.34)	(0.16)
$\varnothing R\&A_{t-1} \in [B, A)$		0.046	-0.029		0.046	-0.029		0.046	-0.029		0.046	-0.029
		(1.30)	(-0.56)		(1.30)	(-0.56)		(1.30)	(-0.56)		(1.30)	(-0.56)
$\varnothing R\&A_{t-1} < B$		0.036	-0.034		0.036	-0.034		0.036	-0.034		0.036	-0.034
		(1.29)	(-0.78)		(1.29)	(-0.79)		(1.29)	(-0.78)		(1.28)	(-0.79)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family FE			Yes			Yes			Yes			Yes
N	126,509	126,509	126,480	126,509	126,509	126,480	126,509	126,509	126,480	126,509	126,509	126,480
Adj R2	0.295	0.295	0.304	0.295	0.295	0.304	0.295	0.295	0.304	0.295	0.295	0.304

Table 8: AFP and RepRisk incidents

This table reports results from regressions of fund performance variables on PRI R&A rating and AFP measure conditioned on RepRisk negative ESG incident, AFP_t^{RR}. AFP_t^{RR} is defined as fund-level monthly correlation of portfolio holdings in the previous quarter and monthly CARs in the month of RepRisk incident occurrence of each portfolio firm. We define RepRisk incident to portfolio firm as an event with the monthly increase in RepRisk score equals the 95th percentile of the sample monthly change in RepRisk score, i.e. $\Delta RepRisk\ score = 8$. Monthly returns are observed in the month following RepRisk incidents. All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

	AFP_t^{RR}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}
	(1)	(2)	(3)	(4)
AFP_t^{RR}		0.471	0.411	0.403
		(1.37)	(1.15)	(1.10)
$\varnothing R\&A_{t-1} \geq A \times AFP_t^{RR}$			1.924**	2.001**
			(2.15)	(2.30)
$\varnothing R\&A_{t-1} \geq A$	0.000		0.056***	0.050
	(1.04)		(2.82)	(1.26)
$\varnothing R\&A_{t-1} \in [B, A)$	0.000		0.025	0.002
	(0.19)		(1.17)	(0.05)
$\varnothing R\&A_{t-1} < B$	-0.000		0.001	-0.043*
	(-0.73)		(0.05)	(-1.88)
Controls	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes
Family FE				Yes
N	362,158	329,062	329,062	329,062
Adj R2	0.021	0.299	0.299	0.303

Table 9: R&A rating and ESG-factor alpha

This table reports results from regressions of fund performance variables on PRI R&A rating. Fund returns are calculated before (gross) deducting fees and expense, adjusted using the market risk factor and E/S/G factor. All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

		ESG Factor (MSCI IVA data)			
	Alpha 1F (mkt)	Alpha (mkt, E-fac)	Alpha (mkt, S-fac)	Alpha (mkt, G-fac)	Alpha (mkt, ESG-fac)
$\varnothing R\&A_{t-1} \geq A$	0.041**	0.046**	0.037**	0.035**	0.037**
	(2.29)	(2.57)	(2.04)	(2.01)	(2.23)
$\varnothing R\&A_{t-1} \in [B, A)$	0.040***	0.045***	0.035**	0.035**	0.049***
	(2.69)	(2.95)	(2.26)	(2.33)	(3.14)
$\varnothing R\&A_{t-1} < B$	0.019	0.028	0.017	0.008	0.025
	(0.98)	(1.42)	(0.86)	(0.39)	(1.25)
Controls	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes
N	828,647	823,206	823,206	823,206	823,206
Adj R2	0.368	0.345	0.348	0.351	0.346

Table 10: Control for portfolio ESG ranking

This table reports results from regressions of fund monthly performance variables on PRI R&A rating. In model (1) and (2), we further control for fund portfolio ESG score. *ESG score ranking* is the standardised ranking [0,1] within the same Category x Time, and *ESG score ranking (missing)* takes value of 1 when *ESG score ranking* is missing. Model (3) and (4) include fund Morningstar 'Globes' sustainability rating on the scale 1-5 (highest sustainability rating). All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

	Fund ESG ranking		Fund 'Globes' ranking	
	Gross Return	Alpha 4F	Gross Return	Alpha 4F
	(1)	(2)	(3)	(4)
$\varnothing R\&A_{t-1} \geq A$	0.040**	0.056***	0.040**	0.056***
	(2.28)	(3.47)	(2.31)	(3.37)
$\varnothing R\&A_{t-1} \in [B, A)$	0.040***	0.035**	0.040***	0.035**
	(2.86)	(2.18)	(2.87)	(2.13)
$\varnothing R\&A_{t-1} < B$	0.017	0.018	0.017	0.018
	(0.91)	(0.89)	(0.89)	(0.88)
Log Fund Assets$_{t-1}$	0.014***	0.013**	0.015***	0.013**
	(2.86)	(2.43)	(3.09)	(2.60)
Log Fund Age$_{t-1}$	-0.005	-0.007	-0.005	-0.007
	(-0.48)	(-0.81)	(-0.46)	(-0.83)
Log Family Assets$_{t-1}$	0.010***	0.004	0.010***	0.004
	(3.12)	(1.35)	(3.12)	(1.37)
ESG score ranking	-0.005	-0.005		
	(-0.30)	(-0.44)		
ESG score ranking (missing)	-0.044	-0.018		
	(-0.74)	(-0.39)		
Globes ranking			-0.033	0.004
			(-0.50)	(0.09)
Globes ranking (missing)			-0.033	0.007
			(-0.78)	(0.23)
Categ x Time	Yes	Yes	Yes	Yes
N	828,647	828,647	828,647	828,647
Adj R2	0.824	0.346	0.824	0.346

Appendices

Appendix A1. Variable definitions

Variable	Definition (Data source)
Fund characteristics	
Gross return	Gross return of fund i in month t, in percentage. (Morningstar Mutual Fund)
Mstar categ-adj return	Difference between the fund's gross return and the return of the Morningstar-category in month t, in percentage
Alpha 1F	Fund's monthly alpha over the CAPM, in percentage. (Morningstar Mutual Fund, AQR benchmark factor)
Alpha 3F	Fund's monthly alpha over the regional Fama-French 3-factor, in percentage. (Morningstar Mutual Fund, AQR benchmark factor)
Alpha 4F	Fund's monthly alpha over the regional Fama-French-Carhart 4-factor in month t, in percentage. (Morningstar Mutual Fund, AQR benchmark factor)
Alpha (mkt, E-fac)	Fund's monthly alpha over the market risk premium and the regional green factor's realization in month t, in percentage. We follow the methodology of Pástor et al. (2021b) to calculate the green factor's realization for each investment region. we construct Alpha (mkt, S-fac), Alpha (mkt, G-fac) and Alpha (mkt, ESG-fac) in a similar factor. (Morningstar Mutual Fund, MSCI IVA ESG)
Log Fund Assets	Natural logarithm of total assets under management (AUM), in US $m. Fund-level AUM is the sum of the assets across all share classes. (Morningstar Mutual Fund)
Log Fund Age	Natural logarithm of the number of years since the fund inception date. (Morningstar Mutual Fund)
Socially conscious	Indicator variable for funds that are classified by Morningstar as "socially conscious".
Fund ESG ranking	The standardised ESG portfolio score [0,1] in a given Category x Time. (Morningstar)
Fund 'Globes'	Morningstar sustainability 'Globes' rating on the scale 1-5, where 5 is the highest sustainability globes. (Morningstar)
Institution characteristics	
Log Family Assets	Natural logarithm of total AUM by the fund-family, in US $m. Fund family-level is the sum of the assets across all funds of the fund family. (Morningstar Mutual Fund)
R&A score	The average PRI R&A module scores. The included module scores are (1) Strategy and Governance, (2) Selection, appointment of managers - SAM: Listed Equity, (3) SAM: Fixed Income, (4) Listed Equity: Screening, (5) Listed Equity: Integration, (6) Listed Equity: Active Ownership, (7) Private Equity, (8) Direct Property, (9) Direct Infrastructure , and (10) Fixed Income. (PRI Reporting and Assessment)
$\varnothing R\&A_{t-1} \geq A$	Indicator variable for funds that have an average score of A or greater across all modules. (PRI Reporting and Assessment)
$\varnothing R\&A_{t-1} \in [B, A)$	Indicator variable for funds that have an average score of B or greater, but smaller than A across all modules. (PRI Reporting and Assessment)
$\varnothing R\&A_{t-1} < B$	Indicator variable for funds that have an average score smaller than B across all modules. (PRI Reporting and Assessment)
No R&A Rating	Indicator variable for funds that do not have PRI R&A rating, consisting of non-PRI funds or funds of first-year being PRI signatories. (PRI Reporting and Assessment)

Appendix A1. [con'd]

Variable	Definition (Data source)
Other variables	
AFP^{Disag}	Fund-level quarterly sum of the change in portfolio holdings in the previous quarter and CAR[-1;+1] around quarter earnings announcement date of each portfolio firm with high level of ESG disagreement. ESG disagreement is defined as the standard deviation of ESG ratings cross four ratings providers (MSCI IVA ESG, Sustainalytics ESG, Thomson Asset4 and S&P Global ESG scores) or when at least two ratings are available. High ESG disagreement is an indicator variable takes values of 1 if the stock is in the Top Quintile (or Top Quartile\Tercicle\Median) of ESG disagreement in a given quarter. (Morningstar Mutual Fund, FactSet monthly holdings, Compustat Security Daily for North America and Global, I/B/E/S Detail History Actuals)
AFP^{Others}	Fund-level quarterly sum of the change in portfolio holdings in the previous quarter and CAR[-1;+1] around quarter earnings announcement date of each portfolio firm with low level of ESG disagreement.
AFP^{RR}	Fund-level monthly correlation of portfolio holdings in the previous quarter and monthly CARs in the month of RepRisk incident occurrence of each portfolio firm. We define RepRisk incident to portfolio firm as an event with the monthly increase in RepRisk score equals the 95th percentile of the sample monthly change in RepRisk score, i.e. $\Delta RepRisk\ score = 8$ (Morningstar Mutual Fund, FactSet monthly holdings, FactSet monthly returns, RepRisk ESG incidents)

Table A2. R&A rating and fund performance - Fixed Effects

This table reports results from regressions of fund monthly performance variables on PRI R&A rating. In model (1) and (2), we further control for fund-family fixed-effects. Model (3) and (4) include fund fixed-effects. Model (5) and (6) include fund manager fixed-effects. All fund control variables are lagged by one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix A provides variable definitions.

	Alpha 1F	Alpha 3F	Alpha 1F	Alpha 3F	Alpha 1F	Alpha 3F
	(1)	(2)	(3)	(4)	(5)	(6)
$\varnothing R\&A_{t-1} \geq A$	0.056	0.059*	0.058*	0.064*	0.037	0.043*
	(1.66)	(1.67)	(1.70)	(1.80)	(1.60)	(1.82)
$\varnothing R\&A_{t-1} \in [B, A)$	0.030	0.024	0.033	0.029	0.022	0.017
	(1.12)	(0.85)	(1.26)	(1.03)	(1.09)	(0.83)
$\varnothing R\&A_{t-1} < B$	0.000	-0.006	0.004	-0.000	-0.001	-0.011
	(0.00)	(-0.25)	(0.16)	(-0.01)	(-0.04)	(-0.58)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes	Yes
Family FE	Yes	Yes				
Fund FE			Yes	Yes		
Manager FE					Yes	Yes
N	828,631	828,631	828,464	828,464	535,439	535,439
Adj R2	0.825	0.350	0.825	0.352	0.847	0.325

Table A3. Robustness checks

This table reports results from regressions of fund monthly performance variables on PRI R&A rating. Panel A shows results of regressions controlling for additional fund characteristics as in Ferreira et al. (2013). Panel B presents results of fund alpha over alternative individual country-level risk-factor benchmark on R&A rating. Panel C presents results using an alternative value-weighted R&A score, where the weight for a module score is the fraction of assets under management of the asset class to the total fund-family assets under management. Fund returns are calculated before (gross) deducting fees and expenses. These returns are also adjusted using the CAPM model (Alpha 1F), the Fama-French model (Alpha 3F), the Carhart model (Alpha 4F), or computed as the difference between the fund gross return and the return of the fund benchmark, as provided by Morningstar. All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix A provides variable definitions.

Panel A: Controlling for additional fund characteristics

	Gross Return	Mstar categ-adj Return	Alpha 1F	Alpha 3F	Alpha 4F
	(1)	(2)	(3)	(4)	(5)
$\varnothing R\&A_{t-1} \geq A$	0.0347***	0.0249**	0.0289**	0.0218*	0.0227*
	(2.986)	(2.586)	(2.425)	(1.818)	(1.794)
$\varnothing R\&A_{t-1} \in [B, A)$	0.0326***	0.0300***	0.0277***	0.0133	0.0128
	(3.410)	(3.970)	(2.659)	(1.349)	(1.232)
$\varnothing R\&A_{t-1} < B$	0.0016	0.0158*	0.0038	-0.0025	-0.0066
	(0.148)	(1.923)	(0.356)	(-0.267)	(-0.631)
Log Fund Assets$_{t-1}$	0.0079**	0.0078***	0.0068**	0.0065**	0.0047
	(2.272)	(3.149)	(2.279)	(2.365)	(1.663)
Log Fund Age$_{t-1}$	-0.0014	-0.0035	0.0063	0.0034	0.0003
	(-0.181)	(-0.804)	(0.698)	(0.388)	(0.038)
Expense Ratio$_{t-1}$	-0.0483**	-0.0620***	-0.0619***	-0.0496***	-0.0471***
	(-2.592)	(-5.063)	(-3.275)	(-3.035)	(-2.913)
Load Fee$_{t-1}$	0.0012	0.0006	0.0007	-0.0006	-0.0010
	(0.989)	(0.595)	(0.580)	(-0.517)	(-0.861)
Flow$_{t-1}$	0.0029**	0.0021**	0.0031**	0.0019*	0.0016*
	(2.147)	(2.061)	(2.623)	(1.969)	(1.788)
Flow$_{t-2}$	-0.0015	-0.0005	-0.0008	-0.0004	-0.0009
	(-1.220)	(-0.548)	(-0.710)	(-0.439)	(-0.965)
Alpha$_{t-1}$	-0.0251	-0.0137	-0.0144	-0.0175	-0.0085
	(-1.280)	(-1.200)	(-0.732)	(-0.956)	(-0.444)
Alpha$_{t-2}$	0.0138	0.0044	0.0248	0.0271	0.0322*
	(0.779)	(0.407)	(1.491)	(1.593)	(1.920)
Constant	0.3238***	-0.0922*	-0.1323*	-0.1396**	-0.1371**
	(4.272)	(-1.685)	(-1.860)	(-2.248)	(-2.107)
Categ x Time FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
N	485,667	485,667	485,667	485,667	485,667
Adj R2	0.820	0.018	0.464	0.422	0.411

Panel B: Fund alpha over alternative risk-factor benchmark

	Alpha 1F	Alpha 3F	Alpha 4F
	(1)	(2)	(3)
$\varnothing R\&A_{t-1} \geq A$	0.0300***	0.0309***	0.0401***
	(2.867)	(3.163)	(4.204)
$\varnothing R\&A_{t-1} \in [B, A)$	0.0260***	0.0232***	0.0265***
	(3.150)	(2.809)	(3.324)
$\varnothing R\&A_{t-1} < B$	0.0129	0.0116	0.0117
	(1.466)	(1.269)	(1.328)
Constant	-0.5454***	-0.4673***	-0.4348***
	(-15.037)	(-13.356)	(-13.217)
Controls	Yes	Yes	Yes
Categ x Time FE	Yes	Yes	Yes
N	1,292,129	1,292,129	1,292,129
Adj R2	0.430	0.407	0.396

Panel C: AUM value-weighted (vw) PRI rating as a proxy

	Alpha 1F	Alpha 3F	Alpha 4F
	(1)	(2)	(3)
$\varnothing vwR\&A_{t-1} \geq A$	0.0241**	0.0274**	0.0407***
	(2.120)	(2.395)	(3.939)
$\varnothing vwR\&A_{t-1} \in [B, A)$	0.0266***	0.0309***	0.0345***
	(2.621)	(2.921)	(3.494)
$\varnothing vwR\&A_{t-1} < B$	0.0236***	0.0180*	0.0136
	(2.601)	(1.960)	(1.510)
Constant	-0.5482***	-0.4595***	-0.4069***
	(-13.939)	(-12.222)	(-11.882)
Controls	Yes	Yes	Yes
Categ x Time FE	Yes	Yes	Yes
N	1,292,471	1,292,471	1,292,471
Adj R2	0.471	0.455	0.448

Table A4. R&A module rating and fund performance

This table reports results from regressions of fund monthly performance variables on R&A module rating. Listed Fund returns are calculated before (gross) deducting fees and expenses. These returns are also adjusted using the CAPM model (Alpha 1F), the Fama-French model (Alpha 3F), the Carhart model (Alpha 4F), or computed as the difference between the fund gross return and the return of the fund benchmark, as provided by Morningstar. All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix A provides variable definitions.

Panel A: Equity-funds: Avg score based on a subset of R&A modules: SG, LEI, LEA

	Gross Return	Mstar categ-adj Return	Alpha 1F	Alpha 3F	Alpha 4F
	(1)	(2)	(3)	(4)	(5)
$\varnothing R\&A_{t-1}^{restr.} \geq A$	0.0300**	0.0260***	0.0331**	0.0341**	0.0436***
	(2.049)	(2.825)	(2.148)	(2.143)	(2.748)
$\varnothing R\&A_{t-1}^{restr.} \in [B, A)$	0.0345**	0.0248***	0.0300*	0.0141	0.0157
	(2.222)	(2.694)	(1.831)	(0.831)	(0.905)
$\varnothing R\&A_{t-1}^{restr.} < B$	0.0334	0.0208	0.0342	0.0292	0.0336
	(1.285)	(1.653)	(1.401)	(1.212)	(1.387)
Constant	0.0283	-0.5053***	-0.5957***	-0.4940***	-0.4370***
	(0.209)	(-5.545)	(-4.320)	(-3.895)	(-3.478)
Controls	Yes	Yes	Yes	Yes	Yes
Categ x Time FE	Yes	Yes	Yes	Yes	Yes
N	828,647	828,647	828,647	828,647	828,647
Adj R2	0.824	0.013	0.368	0.343	0.346

Panel B: Equity-funds: Avg score based on a subset of R&A Listed Equity (LE) modules: LEI, LEA

	Gross Return	Mstar categ-adj Return	Alpha 1F	Alpha 3F	Alpha 4F
	(1)	(2)	(3)	(4)	(5)
$\varnothing R\&A_{t-1}^{LE} \geq A$	0.0212	0.0161*	0.0275*	0.0348**	0.0426***
	(1.426)	(1.887)	(1.807)	(2.236)	(2.720)
$\varnothing R\&A_{t-1}^{LE} \in [B, A)$	0.0235*	0.0116	0.0142	0.0160	0.0257*
	(1.787)	(1.211)	(1.052)	(1.095)	(1.845)
$\varnothing R\&A_{t-1}^{LE} < B$	0.0357	0.0142	0.0344	0.0247	0.0344*
	(1.546)	(1.351)	(1.624)	(1.237)	(1.729)
Constant	0.0011	-0.5296***	-0.6204***	-0.5069***	-0.4536***
	(0.008)	(-5.569)	(-4.553)	(-4.059)	(-3.637)
Controls	Yes	Yes	Yes	Yes	Yes
Categ x Time FE	Yes	Yes	Yes	Yes	Yes
N	828,647	828,647	828,647	828,647	828,647
Adj R2	0.824	0.013	0.368	0.343	0.346

Figure A1. Country of headquarter of institutions with A/A$^+$ R&A rating
This figure plots the sample fraction of PRI signatory institutions with A/A$^+$ R&A rating over the total number of institutions in the respective country of headquarter in 2018.

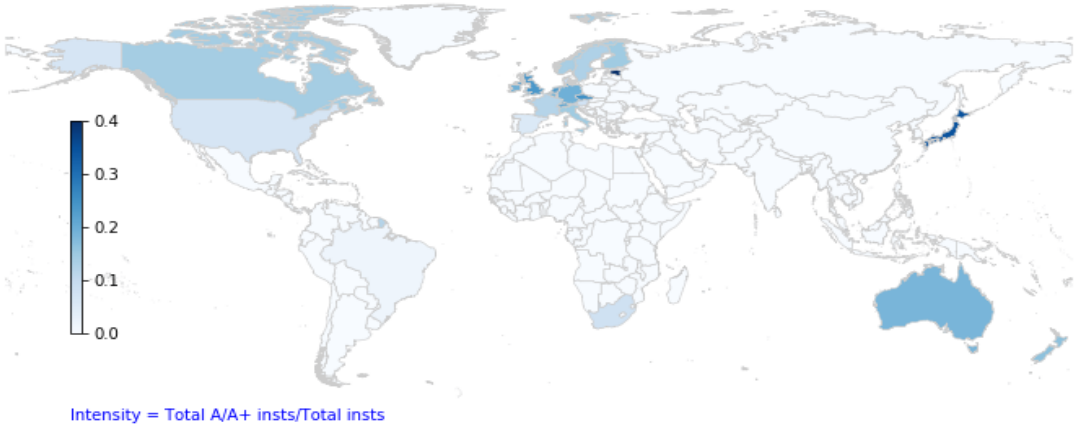


Table A5. R&A Rating and fund performance by fund domicile
This table reports results from regressions of fund monthly performance variables on PRI R&A rating by fund domicile. Fund returns are calculated before (gross) deducting fees and expenses. These returns are also adjusted using the Carhart model (Alpha 4F). All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix A provides variable definitions.

	US-domiciled		EU-domiciled		Other	
	Gross Return	Alpha 4F	Gross Return	Alpha 4F	Gross Return	Alpha 4F
	(1)	(2)	(3)	(4)	(5)	(6)
$\varnothing R\&A_{t-1} \geq A$	0.001	0.010	0.073***	0.085***	0.014	0.036
	(0.06)	(0.49)	(3.42)	(4.23)	(0.45)	(1.10)
$\varnothing R\&A_{t-1} \in [B, A)$	0.016	0.022	0.066***	0.048**	0.030	0.034
	(1.18)	(1.56)	(3.67)	(2.45)	(1.01)	(1.07)
$\varnothing R\&A_{t-1} < B$	0.007	0.001	0.024	0.017	0.008	0.030
	(0.42)	(0.06)	(1.38)	(0.89)	(0.25)	(0.89)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Categ x Time FE	Yes	Yes	Yes	Yes	Yes	Yes
N	182,257	182,257	432,509	432,509	213,731	213,731
Adj R2	0.868	0.307	0.841	0.298	0.789	0.495

Table A6. R&A Rating and ESG-specific AFP measure by investment region

This table reports results from regressions of fund performance variables on PRI R&A rating and specific AFP measure by investment region. Panel A reports the results from regression of fund returns on PRI rating and AFP_t^{Disag} in a similar fashion as Table 7 by sub-sample of investment regions. Panel B reports the results from regression of fund returns on PRI rating and AFP_t^{RR} in a similar fashion as Table 8 by sub-sample of investment regions. We employ α_{4F} as the main return measure in the similar fashion as Jiang and Zheng (2018). All fund control variables are observed in the quarter prior to the AFP measure and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix Table A1 provides variable definitions.

Panel A: R&A rating and Highest ESG Disagreement (AFP_t^{Disag} is defined by *Top Quintile*)

	US-domiciled			EU-domiciled		
	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}	α_{t+1}^{4F}
	(1)	(2)	(3)	(4)	(5)	(6)
AFP_t^{Disag}	0.480***	0.478***	0.482***	0.444***	0.421***	0.416***
	(8.06)	(7.87)	(8.26)	(5.68)	(5.48)	(5.47)
AFP_t^{Others}	0.513***	0.514***	0.516***	0.436***	0.431***	0.429***
	(13.43)	(14.18)	(14.27)	(10.53)	(10.18)	(11.03)
$\varnothing R\&A_{t-1} \geq A \times AFP_t^{Disag}$		0.055	0.058		0.161*	0.160*
		(0.41)	(0.42)		(1.88)	(1.87)
$\varnothing R\&A_{t-1} \geq A \times AFP_t^{Others}$		-0.029	-0.019		0.018	0.019
		(-0.40)	(-0.24)		(0.31)	(0.31)
$\varnothing R\&A_{t-1} \geq A$	0.002	0.002	-0.009	0.028**	0.025**	0.002
	(0.33)	(0.30)	(-1.63)	(2.22)	(2.17)	(0.40)
$\varnothing R\&A_{t-1} \in [B, A)$	0.012	0.013	0.030	-0.028	-0.029	-0.008
	(0.64)	(0.65)	(1.33)	(-1.55)	(-1.59)	(-0.60)
$\varnothing R\&A_{t-1} < B$	0.003	0.000	-0.029	0.016	0.006	-0.135***
	(0.74)	(0.10)	(-0.63)	(1.36)	(0.67)	(-2.92)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes	Yes
Family FE			Yes			Yes
N	47,051	47,051	47,049	75,503	75,503	75,479
Adj R2	0.337	0.337	0.346	0.290	0.290	0.298

Table A6. [con'd]

Panel B: R&A rating and RepRisk negative ESG incidents

	US-domiciled			EU-domiciled		
	α^{4F}_{t+1}	α^{4F}_{t+1}	α^{4F}_{t+1}	α^{4F}_{t+1}	α^{4F}_{t+1}	α^{4F}_{t+1}
	(1)	(2)	(3)	(4)	(5)	(6)
AFP^{RR}_t	1.480***	1.504***	1.524**	0.240	0.160	0.153
	(2.73)	(2.82)	(2.64)	(0.96)	(0.66)	(0.62)
$\varnothing R\&A_{t-1} \geq A \times AFP^{RR}_t$		-2.197	-2.362		2.207**	2.235**
		(-1.19)	(-1.26)		(2.16)	(2.26)
$\varnothing R\&A_{t-1} \geq A$		-0.003	-0.034		0.090***	0.086
		(-0.13)	(-0.98)		(3.94)	(1.65)
$\varnothing R\&A_{t-1} \in [B, A)$		0.023	0.005		0.042	0.004
		(1.32)	(0.16)		(1.63)	(0.12)
$\varnothing R\&A_{t-1} < B$		-0.002	-0.021		0.011	-0.064**
		(-0.14)	(-0.82)		(0.40)	(-2.09)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes	Yes
Family FE			Yes			Yes
N	116,448	116,448	116,447	203,463	203,463	203,460
Adj R2	0.328	0.328	0.333	0.298	0.299	0.302

Table A7. R&A rating and ESG-factor alpha

This table reports results from regressions of fund performance variables on PRI R&A rating. Fund returns are calculated before (gross) deducting fees and expense, adjusted using the market risk factor and E/S/G factor. All fund control variables are lagged one month and winsorized at 1st and 99th percentiles. t-statistics based on standard errors clustered at the time (year-month) and fund level, are shown in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Appendix A provides variable definitions.

		ESG Factor (Sustainalytics ESG data)			
	Alpha 1F (mkt)	Alpha (mkt, E-fac)	Alpha (mkt, S-fac)	Alpha (mkt, G-fac)	Alpha (mkt, ESG-fac)
$\varnothing R\&A_{t-1} \geq A$	0.041**	0.037*	0.033*	0.039*	0.036*
	(2.29)	(1.89)	(1.69)	(1.96)	(1.83)
$\varnothing R\&A_{t-1} \in [B, A)$	0.040***	0.040**	0.037**	0.042**	0.040**
	(2.69)	(2.48)	(2.27)	(2.59)	(2.47)
$\varnothing R\&A_{t-1} < B$	0.019	0.014	0.016	0.021	0.015
	(0.98)	(0.69)	(0.76)	(1.01)	(0.74)
Controls	Yes	Yes	Yes	Yes	Yes
Categ x Time	Yes	Yes	Yes	Yes	Yes
N	828,647	771,565	771,565	771,565	771,565
Adj R2	0.368	0.347	0.359	0.346	0.352