Catering through transparency: Voluntary ESG disclosure by asset managers and fund flows*

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Abstract

Voluntary Environmental, Social, and Governance (ESG) disclosure by institutional investors enables clients to allocate responsible capital to institutions with better ESG practices. Institutional investors disclose their ESG practices as part of their commitment to the Principles for Responsible Investment (PRI), the world's largest responsible investment network. After joining the PRI, investors annually file an ESG report, which is assessed and scored by the PRI. Clients allocate more assets toward institutions that receive higher scores on their disclosure, especially when the disclosure is corroborated by third-party ESG fund ratings. Importantly, the disclosure does not appear to be cheap talk since it correlates with more sustainable equity portfolios and more engagements on ESG issues. However, both higher flows and better ESG practices occur only in countries where responsible institutional asset owners have a stronger presence.

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1 Introduction

Environmental, Social, and Governance (ESG) reporting is receiving attention from both policymakers (EU, 2019; SEC, 2022a) and practitioners (Krueger, Sautner, and Starks, 2020), since an effective disclosure regime enables financial markets to correctly price ESG risks and opportunities. Recently, progress has been made toward a better understanding of *corporate* ESG reporting.[1] Yet little is known about the ESG disclosure of *institutional investors*. This is surprising because the investor-client relation exhibits substantial informational asymmetries (Bebchuk, Cohen, and Hirst, 2017).

In the context of sustainable investing, these asymmetries are compounded by the existence of a plethora of sustainable investing strategies (Kölbel et al., 2020) and the lack of standardized disclosure frameworks (Christensen, Hail, and Leuz, 2021). For example, mutual fund clients may not know whether a fund has the organizational capabilities to engage portfolio companies, whether it can assess how socially responsible companies actually are, or whether it overstates the extent of its ESG practices. This makes it difficult to separate *truly* responsible asset managers from others. One solution to this problem could be an effective investor disclosure regime.[2]

This paper studies if voluntary ESG disclosure by institutional investors enables clients to allocate responsible capital to institutions with better ESG practices. To this end, we exploit a unique institutional setting, namely the commitment of mutual fund families from all around the world to be members of the Principles of Responsible Investment (PRI), the largest responsible investing initiative.[3] In 2014, PRI introduced a disclosure framework to evaluate the ESG practices of its signatories. It required that all signatories fill-in an annual

[1] For example, in the U.K., publicly listed companies have to disclose their CO_2 emissions (Jouvenot and Krueger, 2021; Grewal, Richardson, and Wang, 2022), while many more do so voluntarily. For an overview of the ESG reporting instruments around the world, see the Carrots & Sticks 2020 report, available at https://www.carrotsandsticks.net.

[2] In May 2022, the SEC proposed to enhance the disclosure of investment companies and investment advisors regarding their ESG investment practices (SEC, 2022b). The regulator mentioned our working paper in its statement about the proposal (SEC, 2022c).

[3] The PRI counted over 3,000 signatories with combined assets under management (AUM) of over $100 trillion at the end of 2020. See https://www.unpri.org/pri/about-the-pri.

survey called the "Reporting & Assessment" (R&A) framework. The survey covers different modules detailing how, for each asset class, signatories integrate sustainability issues in their investment processes. The modules include, among others, stock selection, engagement, the appointment of portfolio managers, and organizational ESG resources. The responses in each module are assessed by PRI, which gives higher scores to signatories that reported better ESG practices. We call these scores "ESG reporting scores."

While the ESG reporting scores are voluntary to disclose, we find that most large signatories with high and medium scores published their scores on their homepage.[4] Moreover, PRI staff informed us that, even if signatories did not disclose through their homepage, they frequently share their scores with institutional clients on request. This is consistent with the unravelling result, which predicts that, under certain assumptions, all signatories will ultimately disclose their scores to separate themselves from low-scoring signatories. If signatories filled in the survey as required but did not disclose their scores, then clients would assume that these signatories received low scores.

Ex-ante, it is unclear if high ESG reporting scores are a viable signal of better ESG practices and thereby improve the match between responsible capital and truly responsible investors. The informativeness of voluntary disclosure depends on whether it is credible (Beyer et al., 2010). In our setting, the standardization of the reporting scores ensures that the scores are based on the same ESG information, preventing asset managers from selectively disclosing favorable ESG information or using boilerplate language to evade the reporting.[5] The PRI further makes misrepresentation more costly by requiring signatories to make part of their survey responses publicly available on the PRI's homepage. This transparency increases the likelihood that inaccurate disclosure leads to reputational losses, delisting from the PRI (FT, 2018), or even lawsuits (Morningstar, 2022). However, given that

[4]The signatories that publicly disclosed their scores accounted for 79% of the total assets managed by high-scoring signatories. This number is 65% for medium-scoring signatories.

[5]The lack of disclosure standards also results in high processing costs of ESG disclosure (Christensen, Hail, and Leuz, 2021), which hampers its effectiveness (Blankespoor, deHaan, and Marinovic, 2020). This is not the case in our setting, since the ESG disclosure we study is standardized, and its information is aggregated into easily comparable reporting scores.

institutional investors sometimes commit to the PRI without implementing ESG investing (Gibson Brandon et al., 2022; Kim and Yoon, 2022; Liang, Sun, and Teo, 2022), market participants may discount self-reported ESG information and rely instead on more objective third-party ESG fund ratings (e.g., on Morningstar's ESG ratings).

Based on these considerations, we ask four questions: Do clients perceive the ESG reporting scores as credible and allocate more assets toward fund families that received high scores on their reporting? Is there a substitutability or complementarity relation between investors' ESG reporting scores and third-party fund ESG ratings that evaluate a fund's sustainability based on its holdings? Do fund families that disclose better ESG practices actually invest their assets more responsibly and engage companies more on ESG issues? If so, which mechanism ensures truthful reporting?

To answer the first question, we test if mutual fund investors allocate more assets toward institutions that receive high ESG reporting scores.[6] Our findings support this, suggesting that the disclosure is seen as credible. After controlling for fund characteristics like size, investment performance, and portfolio sustainability, obtaining a high ESG reporting score relates to monthly flows that are 23 basis points (bp) higher than those of funds of institutions with no score or those that are not signatories. This is an economically important boost that translates into an average annual inflow of $15 million per signatory. This effect exists only for institutional but not for retail share classes. While retail investors could access the ESG reporting scores of many signatories through the signatories' websites, prior research finds that retail investors are influenced by fund information that is accessible through their brokerages' trading platforms, such as the Morningstar ESG fund rating (Hartzmark and Sussman, 2019) or the classification as ESG funds (Riedl and Smeets, 2017).

The empirical challenge is to disentangle the effect of the disclosure from the ESG perfor-

[6]We assume that all high-scoring signatories disclose their scores. Ideally, we would use the actual disclosure of the reporting scores, but we cannot observe a behind-the-scene disclosure, which, according to the PRI, happens frequently. This assumption is further supported by the observation that most high-scoring signatories disclose their reporting scores publicly on their websites. If this assumption did not hold, it would make it less likely that we find significant results.

mance of the funds and other variables that could drive fund flows. Our main specification is a difference-in-difference analysis with additional time-varying controls (e.g., portfolio ESG scores). Technically, we compare the boost in flows that a fund family receives after having obtained high ESG reporting scores to the difference in flows that the control group (signatories with no reporting scores and non-PRI investors) receives over the same period. This design identifies the effects of the ESG disclosure, assuming that other fund characteristics do not change at the same time when signatories start disclosing or that changing fund characteristics are captured by the time-varying controls. For example, better ESG performance (instead of the *disclosure* about it) can explain the boost in flows only if signatories change their ESG performance at the same time when they start disclosing and when the change in ESG performance is not captured by the portfolio ESG scores. In stricter tests, we only keep fund families that joined PRI before 2013—i.e., before the introduction of PRI's survey. These fund families were not aware that joining the PRI would be related to extensive ESG reporting, which further alleviates the selection problem. The effect of obtaining a high ESG reporting score is even stronger in this specification: Signatories that joined the PRI before 2013 experience a boost in flows of 40bp per month from their institutional share classes after receiving a high ESG reporting score.

Our second main result studies the interplay between the voluntarily disclosed ESG scores and Morningstar's fund sustainability rating ("globes"). Morningstar gives funds a higher number of globes if the fund's equity holdings have ESG ratings that are higher than the fund's peer group. While the globes rating is more objective because it is based only on a fund's equity allocation, it has a narrower scope than the ESG reporting scores, which aggregate comprehensive information about investors' responsible investing practices. For example, the ESG reporting contains details about investors' engagement strategies or if managerial compensation is linked to ESG metrics, both of which cannot be inferred from analyzing funds' holdings alone. After 2016, the year Morningstar introduced the globes rating, investors might reward funds only if they have a strong performance on both scales,

treating the two ESG attributes as complements. This argument follows the hypothesis that voluntary disclosure will become more credible once it is corroborated by audited or objective third-party information (Ball, Jayaraman, and Shivakumar, 2012). Alternatively, if investors do not distinguish between the two sets of ESG information, they may treat the globes as a more objective substitute for the ESG reporting score.

We find evidence supporting the former—i.e., the third-party information complements the reporting scores: Mutual funds of PRI signatories that have *both* a high disclosure score and the highest number of Morningstar globes receive a boost in flows of 58bp per month (6.3% of a standard deviation) from institutional share classes. This is more than twice the effect of receiving a high reporting score alone. Moreover, having a high reporting score does not mitigate the negative effect of receiving a poor globe rating, again highlighting the complementarity of the two ratings.

We examine next if fund families that disclose better ESG practices actually have better practices. Establishing this is important since the disclosure-flow mechanism we document will improve the match between responsible capital and responsible asset managers only if better ESG disclosure implies better ESG practices. To test this, we ask if PRI signatories with high ESG reporting scores allocate more capital toward companies with better ESG performance and engage companies to become more sustainable. We find evidence for both. Funds with high reporting scores have a Morningstar portfolio ESG score that is 0.27 points larger than that of the other funds (4% of the standard deviation of funds' ESG scores). These funds also exhibit a lower exposure to negative ESG incidents and are more likely to have an explicit ESG mandate. Moreover, we find that these funds both lead and support more engagements aiming to make companies more sustainable.

Lastly, to understand the signatories' disclosure incentives, we explore what prevents PRI signatories from overstating their ESG practices in the PRI's R&A framework. We hypothesize that institutional asset owners, such as pension funds, may monitor investment managers (Evans and Fahlenbrach, 2012). Responsible institutional asset owners have the

resources and skills to investigate the ESG practices of asset managers and compare those to their reporting, which ultimately makes wrongful disclosure more costly. Consistent with this idea, we find that PRI signatories with high ESG reporting scores are associated with both better fund flows and better ESG practices only in countries where responsible institutional asset owners have a stronger presence.[7] In contrast, when responsible asset owners' presence is weaker in a country, signatories with high ESG reporting scores are associated with slightly better collaborative engagement but no different equity allocation than asset managers that did not join the PRI. We also find no evidence that high-scoring signatories attract fund flows in these countries.

Taken together, our findings suggest that the ESG disclosure of investment managers enables the allocation of responsible capital toward fund managers with better ESG practices. The disclosure of comprehensive ESG information is particularly powerful in attracting fund inflows when combined with a strong and verifiable ESG portfolio rating from a third party. This speaks to the complementarity between holistic, voluntary investor disclosure and specific, mandatory third-party ratings. We find no evidence that the disclosure is cheap talk since signatories that disclose better ESG practices are associated with more sustainable equity holdings and more collaborative ESG engagements. Finally, we document the role of responsible institutional asset owners in preventing wrongful disclosure.

Our paper primarily contributes to the literature on non-financial disclosure. A number of papers have already analyzed the implications of such disclosure *at the corporate level*. For instance, Dhaliwal et al. (2011) show that voluntary ESG corporate disclosure reduces firms' cost of capital. When looking at the financial market reaction, Matsumura, Prakash, and Vera-Munoz (2014) document that capital markets penalize companies for not disclosing their CO_2 emissions, but Grewal, Riedl, and Serafeim (2019) and Griffin, Lont, and Sun (2017) find that there is a negative abnormal return following non-financial corporate

[7] We define countries with a strong asset owner presence as those with an above median fraction of assets under management (AUM) coming from PRI asset owners. The fraction is relative to total AUM of PRI signatories.

disclosures, less so if the disclosure is better. Mandating ESG disclosure improves firms' informational environment (Krueger et al., 2021), firms' innovation output (Gibbons, 2020), and firms' environmental performance (Jouvenot and Krueger, 2021), but can lead to more disagreement between ESG rating agencies (Christensen, Serafeim, and Sikochi, 2022). Our paper provides the first evidence on voluntary ESG disclosure *at the institutional investor level*. We find that it is a viable signal for better ESG practices and helps reduce ESG-related information asymmetries between responsible institutional investors and their clients. Our findings also highlight the importance of standardized voluntary disclosure, completing the few papers on voluntary disclosure standards (Barton and Waymire, 2004; Serafeim, 2011; Bochkay, Hales, and Serafeim, 2023).

Our paper also relates to Hartzmark and Sussman (2019), which show how the sustainability preferences of mutual funds' clients can drive asset allocation choices. They find that clients allocate more assets to funds with better Morningstar ESG fund ratings. Our paper focuses instead on asset managers' self-reported ESG information. We provide evidence that standardized ESG disclosure complements Morningstar's holding-based ESG fund ratings, which are narrower in scope but more objective. In particular, we find that the disclosure is more effective when it is corroborated by high Morningstar's ESG ratings and when there is more monitoring by responsible institutional asset owners.

Finally, our paper contributes to the growing literature studying PRI signatories. Gibson Brandon et al. (2022) ask whether PRI signatories engage in "greenwashing" and show that only non-US signatories appear to have better ESG portfolio scores. Humphrey and Li (2021) argue that PRI signatories reduce the emissions of their portfolios, while Liang, Sun, and Teo (2022) look at hedge funds that joined the PRI and find that these underperform non-signatories. Kim and Yoon (2022) find that funds by PRI signatories domiciled in the US do not exhibit better ESG performance and that this holds across a board of different proxies. Bauckloh et al. (2021) draw a similar conclusion for late-joining PRI signatories. This literature concludes that PRI membership alone is not a signal of superior ESG performance.

We add by studying the cross-section of PRI signatories along self-reported information about their ESG performance. We show that this disclosure can help investors to identify asset managers with better ESG practices and, unlike the PRI membership alone, is an important signal in the responsible investing landscape.

2 Institutional Setting and Hypotheses

2.1 PRI's Reporting and Assessment Survey

In 2006, a group of large institutional investors was invited by Kofi Annan, the then UN Secretary-General, to form the PRI. Institutions that sign the PRI commit to including environmental, social, and governance factors in their investment decisions and ownership processes (PRI, 2020b). In 2020, over 3,000 institutional investors representing over $100 trillion were active signatories of the PRI.

Starting from 2014, signatories need to annually report on their "activities and progress toward implementing the Principles [of Responsible Investment]" (PRI, 2020b). Signatories have a one-year grace period to report on their ESG practices after they join the PRI. Signatories that fail to report two years after joining are delisted and no longer part of the PRI. The reporting framework opens on January 6 each year, and signatories have until March 31 to complete the report.

The report consists of several parts or "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. The Strategy & Governance module is the most holistic part of the framework and covers the signatories' responsible investing policy. For example, one question asks how frequently objectives for responsible investments are set and reviewed. The Listed Equity and Active Ownership are more specific modules and provide detailed information on the signatory's ESG investment process. For example, one question asks the

percentage of AUM for which ESG incorporation strategies are applied or which type of engagements (individual, collaborative, or through service providers) the signatory undertakes. Within each module, 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, the second type are published only with the signatory's consent, and the third type are both reported and published on a completely voluntary basis. Internet Appendix A provides a more detailed description of the survey's content and the distribution of individual questions.

- Figure 1 -

PRI staff then rates all modules of the reporting framework. Depending on their answers in the survey, signatories receive a score that can take values from "A+" to "E." The highest score is A+. It is given when the signatory discloses very good ESG practices in most survey questions, including those that are voluntary to answer and report. Internet Appendix A provides a more detailed description of how PRI aggregates the disclosure into reporting scores. In July of each year, investors will receive their assessment reports. Figure 1 shows one such example. The signatories are not required to disclose their scorecard.

– Table 1 –

The ESG reporting scores are the focus of our study, since many asset managers voluntarily advertise their scores either publicly or share these on request to signal better ESG practices. Table 1 provides hand-collected data about how many signatories publish their scores on their websites or in their annual reports as of 2021. The table shows that 55% of the signatories with high ESG reporting scores (scores $\geq$A) disclose their scores publicly. These tend to be larger signatories as they manage 79% of the assets of high-scoring signatories. Among medium-scoring signatories (scores $\in$[B;A)), 26% of the signatories managing 65%

of the assets advertise their scores publicly. Most of the signatories that receive low scores (scores <B) do not disclose their scores publicly.

PRI staff informed us that signatories also frequently share their scores with institutional clients on request. To facilitate this behind-the-scene disclosure, the PRI platform provides a feature that allows interested clients to request the scores of an asset manager. If the asset manager approves the request, the client gets access to the score via the same platform.

2.2 Theoretical framework

This section outlines the conditions under which voluntary disclosure is effective in reducing the information asymmetries present in the responsible investing landscape and then formulates the hypotheses that our paper is going to test.

Effectiveness of voluntary ESG disclosure

Responsible investing exhibits information asymmetries (Ross, 1973; Jensen and Meckling, 1976) because asset managers are better informed about their responsible investing efforts than their clients, the ultimate owners of the assets. This creates a pooling equilibrium in which asset managers with a responsible investing approach are indistinguishable from other asset managers. To overcome such asymmetries, responsible fund managers can voluntarily disclose on their ESG investing efforts. Effective disclosure will enable clients to allocate responsible capital toward fund managers that invest more responsibly.[8]

Accounting theory emphasizes that, in order to be effective, voluntary disclosure needs to be credible, relevant, and accessible. Credible disclosure implies that misrepresentation is costly (Beyer et al., 2010). Ex ante, it is unclear whether this holds in our setting. On the one hand, asset managers have incentives to disclose truthfully because parts of the underlying survey are publicly accessible through the PRI's homepage, and it is possible to, at

[8]Prior literature on ESG disclosure focuses on corporate disclosure. Christensen, Hail, and Leuz (2021) summarize this literature and conclude that "more and better disclosure can lead to tangible capital-market benefits in the form of improved liquidity, lower cost of capital, higher asset prices (or firm value), and potentially better corporate decisions".

least partly, verify the reporting based on the investor's outcomes (for example, by studying the investors' holdings or voting patterns). This transparency increases the likelihood that misrepresentation will lead to reputational losses and lawsuits, even more so when considering that PRI receives substantial scrutiny due to its large signatory base of institutional asset owners, which have the skills and resources to monitor investment managers, and the increased focus of European and US authorities on ESG issues.[9] On the other hand, clients may still have doubts about the signatories' ESG reporting given that institutional investors sometimes commit to the PRI without implementing ESG strategies (Gibson Brandon et al., 2022; Kim and Yoon, 2022; Liang, Sun, and Teo, 2022).

In addition to being credible, effective disclosure also needs to be relevant and have low processing costs. In other words, the information being disclosed needs to be both important enough to reduce information asymmetries and easily comparable across disclosing entities (Blankespoor, deHaan, and Marinovic, 2020). An important feature of the PRI survey is that it aggregates holistic information about investors' responsible investing approaches into simple scores. These scores are readily comparable across institutions that are part of the PRI initiative. We expect this information to be relevant given the growth of responsible assets over the last decade and prior evidence that end investors value sustainability in their investments (Hartzmark and Sussman, 2019; Riedl and Smeets, 2017).

If voluntary disclosure is an effective signal of better ESG practices, all signatories, except those with the worst reporting, will ultimately disclose their ESG reporting. This follows the unravelling result, which predicts that firms will voluntarily disclose all their private information under certain assumptions. These include that the disclosure must be verifiable and costless, there must be common knowledge that firms have private information, the interpretation of the disclosure must be predictable, and there must not be any agency

[9]For example, in May 2022, DWS, the asset management subsidiary of the Deutsche Bank, was raided on suspicions of prospectus fraud related to greenwashing. In the same month, the SEC fined the Bank of New York Mellon US-$ 1.5 million for misstatements regarding ESG integration. See Morningstar (2022). Moreover, since 2020, the PRI itself has delisted members for not meeting minimum ESG investing practices (PRI, 2020a).

conflicts (Beyer et al., 2010). In our setting, unravelling depends primarily on whether signatories can credibly disclose on their ESG practices (as discussed earlier). The other conditions are less problematic because clients know that signatories are required to report on their ESG practices, and the additional costs of disclosing the filled-out reporting are negligible.

Hypotheses development

Our empirical strategy unfolds in four hypotheses. First, we ask if clients allocate more assets to fund managers that *receive* better ESG reporting scores. This tests a joint hypothesis of whether (a) clients perceive the ESG reporting underlying the scores as credible, (b) the scores provide relevant information, and (c) fund managers disclose their scores. We do not directly test if a fund discloses its scores because we cannot observe a behind-the-scene disclosure.[10] We evaluate this hypothesis against the null that the reporting is not perceived as credible, that there is no demand for such ESG information, or that the scores are not disclosed. Our first hypothesis is as follows:

Hypothesis 1: Fund managers that receive better ESG reporting scores in the PRI survey attract higher fund flows from their clients.

Voluntary disclosure becomes more credible if it can be verified because verification makes misrepresentation more costly (Spence, 1973; Ball, Jayaraman, and Shivakumar, 2012). Ideally, the verification would be done by external auditors and enforced by regulators (Christensen, Hail, and Leuz, 2013). In their absence, it could also come through a third-party data provider that assesses the portfolios of the disclosing entity. In our setting, the ESG scores that mutual funds receive from Morningstar are one form of external verification of institutional investors' ESG investing practices. Our second hypothesis is as follows:

[10]Consistent with unravelling, we assume that all signatories that receive high scores on their ESG reporting disclose these scores. However, even if some high-scoring signatories were not to disclose their scores, it would be less likely that we find a correlation between the ESG reporting scores and fund flows.

Hypothesis 2: The disclosure-flow relation is stronger when the voluntary disclosure is corroborated by high ESG fund ratings provided by Morningstar.

Even if the investor disclosure leads to a different allocation of assets, it does not necessarily imply a better match between responsible capital and responsible investors. This would be the case only if the responsible capital would also be managed by asset managers with better ESG practices. Maybe, investors that disclose better ESG practices do not invest their assets more responsibly or do not engage companies more on ESG issues. In this case, the voluntary disclosure would, in fact, lead to a worse match. Therefore, we test if signatories that disclose better ESG practices also implement these. To this end, we rely on third-party data on the sustainability of the investors' equity holdings, their fund offerings, and their engagement practices. Our third hypothesis is as follows:

Hypothesis 3: Fund managers that disclose better ESG practices (a) hold securities with better ESG ratings, (b) exhibit fewer incidents at their investments, (c) manage more assets in funds with an explicit ESG mandate, and (d) participate more in collaborative engagements aiming to improve companies' sustainability performance.

Lastly, we also examine which mechanism explains why ESG disclosure enables clients to allocate responsible capital to asset managers with better ESG practices (if it does). Prior literature has shown that institutional investors sometimes commit to the PRI but do not implement better ESG practices after joining. Given these results, signatories may overstate their ESG practices in their reporting, which is usually not audited. We expect that the extent to which misrepresentation happens depends on the scrutiny by responsible institutional asset owners, such as pension funds. Institutional asset owners have the sophistication to compare the signatories' ESG reporting with their actual ESG practices, which ultimately makes wrongful disclosure more costly. We proxy for responsible institutional scrutiny by estimating the share of responsible asset owners among PRI signatories in a given country. Our last hypothesis is as follows:

Hypothesis 4: The relation between the ESG reporting scores and both higher flows and better ESG practices is more pronounced when fund families are headquartered in countries where responsible institutional asset owners have a stronger presence.

3 Data

3.1 Mutual fund information

We start our data collection with the full list of PRI signatories and the date when they joined the PRI. Next, we obtain survivorship-bias-free data from Morningstar for all open-end equity and fixed income mutual funds that are incorporated in countries with at least one signatory. Our sample spans from January 2011 to December 2019.

Mutual funds typically issue several share classes that target different types of investors (e.g., retail or institutional clients) or geographies. However, the underlying portfolios as well as the fund management are the same across share classes. For this reason, we conduct our tests at the fund level. When we aggregate data from the share-class level to the fund level, we compute the returns and volatilities as the value-weighted average across different share classes. The AUM of a fund are the sum of the assets in the different share classes. The fund age is retrieved from the largest share class (Ceccarelli, Ramelli, and Wagner, 2023).

We define funds as "institutional" when more than 50% of assets stem from institutional share classes and otherwise as "retail."[11] Following Sirri and Tufano (1998), we compute flows as the monthly growth of AUM net of reinvested returns. To limit the effect of outliers, we winsorize flows at the 1st and 99th percentiles. Moreover, to ensure that our findings are not driven by small funds, we use "normalized flows" as an alternative dependent variable (Hartzmark and Sussman, 2019).

We compute the return volatility as the standard deviation of returns using a 12-month

[11] Morningstar classifies as institutional the share classes that meet one of the following criteria: have the word "institutional" in the name; have a minimum initial purchase of USD $100,000 or more; or specifically address institutional investors or those purchasing on a fiduciary basis, as stated in the fund prospectus.

rolling window. For each fund, we also collect the age, global category (capturing the investment style), Morningstar's overall performance rating (the Morningstar "stars," on a 1-5 scale, with 5 indicating top financial performers), whether the fund is classified as an ESG fund ("socially conscious"),[12] and its portfolio sustainability score and ESG ratings (the Morningstar "globes," on a 1-5 scale, with 5 indicating top sustainability performers).

To account for the impact that Morningstar "stars" have on fund flows (Del Guercio and Tkac, 2008), we define the indicators stars upgrade and stars downgrade. These variables take the value of one if the fund experienced an upgrade or downgrade in "star" rating from the previous month. Similarly, to account for the impact of the Morningstar "globes" (Ammann et al., 2019; Hartzmark and Sussman, 2019), we define the indicators Δ1 globe and Δ5 globes. These variables indicate funds that enter the two extreme sustainability categories (1 globe and 5 globes), considering the observations with continuing missing sustainability ratings as no change.[13]

– Table 2 –

Our sample consists of 4,300 fund families with more than 53,000 funds. Table 2 shows summary statistics for the sample at the fund-month level. Panels B and C focus on institutional and retail funds, respectively. More than half of our sample eventually joins the PRI with 50% of the observations coming from the period after joining ("Post×PRI"). About 17% of funds are classified as institutional, and 9% are classified as ESG funds. These figures are similar for both institutional and retail funds. Compared with retail, institutional funds have somewhat larger flows, are larger, and have a better financial performance.

[12]Morningstar classifies as socially conscious any fund that identifies itself as investing according to some non-financial criteria—for instance, by excluding certain sectors from the investable universe or by selectively investing in good-performing companies in terms of ESG criteria.

[13]Using two indicators of globes changes instead of the continuous globe rating allows us to run our tests before March 2016, when Morningstar first introduced the sustainability globes. This is a crucial aspect since most fund families joined PRI well before that date.

3.2 PRI information

In the second step of our data collection, we manually match each fund family from Morningstar to the list of PRI members.[14] For each signatory, PRI provided us the date of joining and the reporting scores between 2014, the first year the scores were available, and 2019.[15] We aggregate the scores of the various modules and define *Reporting score* as the average score across all available modules. Aggregation is an important step, since clients are likely to allocate responsible capital to asset managers with an overall positive assessment.

Not all signatories fill out every module of the reporting framework, since they might not have enough exposure to a certain asset class like private equity or infrastructure investments. To account for this, we define an additional variable $Reporting\ score^{restr}$, which is restricted to the four modules filled out by approximately 90% of signatories: Strategy & Governance, Listed Equity Screening, Integration, and Active Ownership.

– Table 3 –

Table 3 shows summary statistics of the PRI measures. The average reporting score is 4.22, corresponding to a score slightly above B. When we look at the restricted reporting score, this number increases slightly to 4.61, or a score close to an A. To make the interpretation of our results simpler, we define several indicator variables for signatories with high, medium, and low ESG reporting scores. These are defined, respectively, as having an average reporting score of A or greater, greater than B but smaller than A, and smaller than B. Twenty-seven percent of the sample falls in the top, 34% in the middle, and 39% are in the worst category.

– Figure 2 –

[14] This approach is more labor-intensive than matching PRI signatories to funds but ensures a high-quality match. This is because the name of a fund does not always contain the name of the signatory. For example, the fund "SWuK Renten" is matched with the signatory "Universal-Investment." Trying to match the latter to the list of funds, would have resulted in classifying "SWuK Renten" as a non-PRI fund.

[15] We do not use reporting scores after 2019 because PRI revamped the R&A framework in 2020.

Figure 2 shows how the reporting scores evolved over times. The number of low (score <B) and medium (score ∈[B;A)) scoring signatories remains relatively constant over time. The number of high-scoring (score ≥A) signatories increases, highlighting the trend toward better sustainability disclosure.

To better describe the time-series characteristics of the reporting scores, Table IA2 of the Internet Appendix shows the transition matrix between scores. Most signatories retained their score year-over-year. On average, 20% improved their score while only 5% worsened their score. This further highlights the trend toward better scores.

4 Investor ESG disclosure and mutual fund flows

4.1 Baseline results

This section asks whether mutual fund investors take the ESG reporting scores of asset managers into account when they allocate their assets. We look at the yearly scores received by signatories that fill out the R&A framework. We examine if mutual fund investors allocate more assets toward signatories with high ESG reporting scores (an average score of "A" or higher). As described in the hypotheses development section, this is a joint test of (a) whether clients perceive the ESG reporting underlying the scores as credible, (b) whether the scores provide relevant information, and (c) whether fund managers disclose their scores. We test *Hypothesis 1* formally by running Regression 1 below.

$$\begin{aligned} Flow_{i,t} = \alpha + \beta_1 Rep.\ score_{i,t-1} \geq A + \beta_2 Rep.\ score_{i,t-1} \in [B;A) \\ + \beta_3 Rep.\ score_{i,t-1} < B + \gamma' \mathbf{X_{i,t-1}} + \delta_t + \eta_i + \epsilon_{i,t} \end{aligned} \tag{1}$$

The coefficient of the main explanatory variable, $Rep.\ score_{i,t-1} \geq A$, captures the differential inflow of funds that high-scoring signatories receive, compared with funds that have no score. Similarly, the coefficients of $Rep.\ score_{i,t-1} \in [B;A)$ and $Rep.\ score_{i,t-1} < B$ capture the differential inflow of funds with medium and low disclosure scores, respectively. Our

control group are non-PRI mutual funds because these funds do not report to PRI and, thus, have no ESG reporting scores to disclose. $\mathbf{X_{i,t-1}}$ is a vector of time-varying, lagged, fund-level controls that, based on previous literature, may influence flows to funds of PRI signatories in a differential manner. These are monthly returns in the previous month, previous year, and two years prior, return volatility, the logarithm of AUM and of fund's age, the fund's entrance or exit in the two extreme sustainability rating (globes) categories, and changes of Morningstar's overall assessment of the fund (stars).[16] δ_t represents month fixed effects and η_i fund-family fixed effects. $\epsilon_{i,t}$ is the error term. Standard errors are clustered along month and fund families to account for cross-sectional dependence between observations.

- Table 4 -

Table 4 shows the regression results. Our main finding in column 3 shows that institutional mutual fund investors allocate more assets toward mutual funds that receive high ESG reporting scores. Compared with funds without a score, column 3 shows that having an average reporting score of A or larger correlates to 23bp larger flows, or 4% of a standard deviation. This is an economically important effect, corresponding to about twice the effect from a one standard deviation increase in past month's returns.[17] In column 4, we include category-by-month fixed effects to account for changing tastes for investment strategies over time (Cooper, Gulen, and Rau, 2005). The positive flow effect of having a high ESG reporting score remains robust, albeit slightly smaller. These results point out that institutional mutual fund investors attach a positive value to good ESG disclosure by asset managers.

This seems not to be the case for retail investors (columns 1, 2, 5, and 6). These investors rely on easily accessible ESG information, such as Morningstar's globes ratings (Hartzmark and Sussman, 2019). Thus, they may not know about the reporting scores, which can be found on the signatories' homepage but are not provided by retail brokerages. Moreover,

[16] We use changes and not absolute values because, if ratings are in equilibrium, existing investors have already sorted into low- and high-sustainability funds according to their preferences. One should not expect further flows-effects without additional changes in ratings (Hartzmark and Sussman, 2019).

[17] A one standard deviation increase in monthly returns yields 3.45x0.03=0.10 percentage points (or 10bp) increase in flows.

since PRI is an initiative mainly organized for institutional investors, it is to be expected that the R&A framework will have higher visibility among these investors.

4.2 Robustness tests

Flows are measured as a percentage of AUM, meaning that fund size can introduce a systematic bias in the estimations. To make sure that neither differences in flows by fund size nor outliers are driving our results, we follow Hartzmark and Sussman (2019) and compute a measure of "normalized flows." To this end, we first split the sample into deciles of fund size. We then rank funds according to their net flows within their size decile and compute percentiles of the net flow rankings. These percentiles correspond to the normalized flows variable. In Internet Appendix Table IA3, we confirm that our results are robust to using this alternative dependent variable.

Another concern could be that, by taking into account modules filled out by a small fraction of signatories, we introduce a bias in the analysis. To make sure that this is not the case, in Internet Appendix Table IA4, we redefine the explanatory variables to cover only the modules that are available for approximately 90% of signatories. Again, our baseline findings remain unchanged.

We next examine whether our results are driven by an increase in ESG investing. Maybe, PRI signatories with high ESG reporting scores receive more flows because they profit more from the trend toward ESG investing. One reason for this could be that these signatories offer more mutual funds with an explicit ESG mandate, as we document in Section 6. Internet Appendix Table IA5, however, shows that our baseline results remain unchanged when we include a control variable for ESG funds. Consistent with prior literature, we find that ESG funds receive higher flows than conventional funds.

By comparing funds of PRI signatories with funds of asset managers that have not committed to the PRI, we may be subject to a selection bias if ESG leading institutions predominantly join the PRI in the first place. Therefore, investors might not react to the positive

disclosure embedded in the reporting scores but to some underlying characteristic of the asset manager. We consider this to be unlikely, as our baseline specification includes fund family, month, and category fixed effects and a full set of controls. Nevertheless, we perform two tests with an even tighter specification to alleviate this concern: We include fund-level fixed effects in Internet Appendix Table IA6 and control for the continuous level of the funds' "star" ratings in Internet Appendix Table IA7. The latter test is motivated by the work of Del Guercio and Tkac (2008). In both of these tests, our main result remains robust. Importantly, the magnitude of the coefficient of interest is very stable across the entire battery of robustness tests.

Finally, we run a "placebo" test examining whether the higher flows to high-scoring signatories are driven by merely joining the PRI instead of the ESG disclosure. Internet Appendix Table IA8 estimates a difference-in-differences regression around the joining date of PRI signatories.[18] We find that mutual funds do not earn significantly higher fund flows after joining the PRI compared with funds that did not join the PRI, neither in the full sample, nor in the institutional or retail subsamples.[19] These findings suggest that merely joining PRI is not a strong enough signal of better ESG practices to warrant an investor response, perhaps because investors do not see this signal as a credible ESG commitment.

4.3 Identification

Despite our tight specification and robustness tests, we cannot rule out non-causal explanations such as an omitted variable bias. To help with identification, we exploit the introduction of the R&A framework in 2014. PRI announced in 2013 that it planned to introduce the survey in the following year and make it mandatory for all signatories. Thus, fund families

[18]The regression is specified by $Flow_{i,t} = \alpha + \beta_1\ Post_t \times PRI_i + \gamma' \mathbf{X_{i,t-1}} + \delta_t + \eta_i + \epsilon_{i,t}$. The interaction term $Post_t \times PRI_i$ specifies the difference in flows that funds earn by joining the PRI versus non-PRI funds. PRI_i identifies funds of asset managers that joined the PRI until the end of the sample. $Post_t$ is an indicator variable equal to 1 for the months after the asset manager became a signatory and 0 for all prior months. The $Post_t$ and PRI_i indicators are absorbed by the month and fund-family fixed effects respectively.

[19]Kim and Yoon (2022) find that US funds receive a significant boost in flows after joining the PRI. Our empirical setting is quite different from theirs, as we focus on an international sample, assess a different time period, and include a different set of time-varying fund-level controls.

that became PRI signatories *before 2013* did not know about the upcoming reporting requirement. This means that we can effectively treat the introduction of the R&A framework as an exogenous event for asset managers who became signatories in 2012 or earlier. While the introduction of the R&A framework does not require signatories to disclose their ESG reporting scores, it drastically increases their incentives to do so because of the unravelling result. If signatories kept their score private after they had to report on their ESG activities, clients would assume low ESG reporting scores for those non-disclosing signatories.

- Table 5 -

In Table 5, we make use of this by running Regression (1) on a restricted sample of mutual fund families that either joined PRI before 2013 or never joined. The effect of receiving a high ESG reporting score is even stronger in this setting. We find a boost of 17bp in the overall sample (column 1). This effect is mainly concentrated in the institutional asset classes, where the boost is 40bp (column 3). The latter coefficient is economically significant, corresponding to 6.4% of a standard deviation. These findings remain robust when controlling for category-by-month fixed effects in columns 2 and 4. We find only a marginally significant effect of receiving a high reporting score for retail share classes.

In Internet Appendix Table IA9, we confirm that this effect is robust to a battery of additional tests. First, following Hartzmark and Sussman (2019), we use normalized flows as the dependent variable to account for the effect of fund size on flows (Panel A). Second, we consider a subset of R&A modules to account for any misrepresentation of funds that submit more assessment modules (Panel B). Third, we include fund fixed effects to capture unobservable time invariant fund-level omitted variables (Panel C). Fourth, we control for the continuous measure of Morningstar's performance "stars" rating, an alternative metric for funds' overall attractiveness (Panel D). Fifth, we control for ESG funds to make sure that our findings are not driven by these types of funds (Panel E).

Taken together, the results in this section suggest that institutional fund investors value the disclosure of positive ESG information by asset managers.

5 The interplay between voluntary ESG disclosure and holdings-based ESG ratings

Ball, Jayaraman, and Shivakumar (2012) provide evidence that verified and voluntary disclosure are complements because, through the verification of outcomes, voluntarily disclosed information becomes more credible. The authors call this the "confirmation hypothesis." In our setting, asset managers' decision to disclose the ESG reporting scores is voluntary and the disclosed information itself is not verified. The disclosed information may thus become more credible when it is corroborated by an external ESG verification.

To test *Hypothesis 2*, we use the ESG portfolio ratings ("globes") that were introduced by Morningstar in March 2016 (Hartzmark and Sussman, 2019). Obtaining the maximum number of globes is an external verification by Morningstar that a mutual fund's ESG portfolio holdings are within the 10% of most sustainable funds in its investment strategy. This external, holdings-based verification may complement fund families' own ESG disclosure. We, therefore, expect that mutual funds that obtain both a high ESG reporting score and the highest number of ESG globes will receive particularly high flows from end investors.

- Table 6 -

Table 6 tabulates the relative frequency between ESG reporting scores and Morningstar's ESG globes. We observe that funds of signatories with a high reporting score are over-represented in the 5-globes category: 27% of funds that receive the highest ESG rating also have a high reporting score. This figure is between 10 and 15% for funds with a lower reporting score. Nevertheless, funds of PRI signatories with a high reporting score sometimes receive only one Morningstar ESG globe: One fifth of 1-globe funds have a high reporting score. This highlights that, while there is a positive correlation between the two scores, they do contain distinct information.

- Table 7 -

In Table 7, we formally test whether ESG globes and reporting scores are complements or substitutes. To do this, we interact the main explanatory variable, *Rep. score* $\geq A$, with indicators for funds that receive 5 globes and 1 globe, respectively. Equation (2) below shows the regression specification.[20]

$$\begin{aligned} Flow_{i,t} = \alpha &+ \beta_1 Rep.\ score_{i,t-1} \geq A \times 5\ Globes + \beta_2 Rep.\ score_{i,t-1} \geq A \times 1\ Globe \\ &+ \beta_3 Rep.\ score_{i,t-1} \geq A + \beta_4 Rep.\ score_{i,t-1} \in [B; A) + \beta_5 Rep.\ score_{i,t-1} < B \\ &+ \gamma' \mathbf{X_{i,t-1}} + \delta_t + \eta_i + \epsilon_{i,t} \end{aligned} \tag{2}$$

The coefficient of the interaction term *Rep. score* $\geq A \times 5$ *Globes* captures the additional boost in flows that funds of signatories with a high ESG reporting score receive when also having the highest portfolio ESG rating. We find a positive interaction effect in the full sample (columns 1 and 2): Funds having both a high ESG rating and a high reporting score receive an additional boost in flows of 20bp. The effect is even stronger for the institutional funds where the interaction coefficient measures 42bp, almost twice the effect of having only a high reporting score. This is an economically sizable effect corresponding to a monthly boost in flows of 63bp (21bp + 42bp) or 10% of a standard deviation.

We also observe that mutual funds with only 1 ESG globe, the lowest Morningstar sustainability rating, exhibit significant outflows of 11-16 bps (columns 1 and 2), especially from retail investors.[21] This raises the question if the positive self-disclosure can serve as a substitute for negative verified disclosure. This would be the case if funds that receive only 1 ESG globe can recover part of the outflows by having a good ESG disclosure score. However, our findings suggest that this is not the case since the interaction term between 1 ESG globe and a high disclosure score is statistically insignificant.

[20] It could be the case that, by including only the extreme globe categories (1 and 5), we are leaving out important variation that might explain our results. In Internet Appendix Table IA10, we include a model that is interacted with the full set of globes. Our main finding remains unchanged.

[21] This result is in line with prior findings of Hartzmark and Sussman (2019).

It is worth noting that columns 3 and 4 confirm our baseline result that institutional fund investors value positive ESG disclosure by asset managers. The coefficient of *Rep. score* $\geq A$ is significantly positive, suggesting that high-scoring funds receive significantly more inflows than funds that have no score and have either no Morningstar globe rating or one that is between 2 and 4 globes. The economic magnitude is also similar to our previous results.

Taken together, these findings support the confirmation hypothesis that verified information (ESG globes) complements voluntarily disclosed information (ESG reporting scores) by making the latter more credible. The reverse does not hold: Positive, voluntary disclosure does not "make up" for negative, verified information.

6 Are the ESG reporting scores cheap talk?

This section examines whether asset managers that disclose better ESG practices in fact have better ESG practices (*Hypothesis 3*). This is an important question because it determines whether the boost in flows that these funds receive are invested more responsibly. Answering this empirically is difficult because we can only (partially) observe investors' ESG outcomes but not how much effort asset managers dedicated toward ESG investing. We proceed with regressing different fund ESG measures on the ESG reporting score. We include category-month fixed effects (specified by $\theta_{c,t}$) but no fund family fixed effects to compare fund families in the cross section rather than over time as we did in our previous analyses. Formally, the regression is specified by Equation 3 below.

$$\begin{aligned} ESG\ practices_{i,t} = \alpha + \beta_1 Rep.\ score_{i,t-1} \geq A + \beta_2 Rep.\ score_{i,t-1} \in [B; A) \\ + \beta_3 Rep.\ score_{i,t-1} < B + \gamma' \mathbf{X_{i,t-1}} + \theta_{c,t} + \epsilon_{i,t} \end{aligned} \tag{3}$$

We first examine how sustainable the equity holdings of disclosing fund families are using two portfolio-based measures. Our first measure is Morningstar's portfolio ESG score, which is the value-weighted average of the ESG ratings of the stocks that the fund held at the

end of a quarter. We use portfolio ESG scores from 2012 to September 2019, when the methodology for computing them changed. Our second measure is the portfolio incident score, which quantifies the amount of ESG incidents that the stocks held by a mutual fund have. Different from the portfolio ESG score, this measure captures realized ESG-related business risks (Glossner, 2022). We calculate it by value-weighting the Peak RepRisk Index[22] of the stocks held by a fund in a given quarter. We obtain the holdings of mutual funds from FactSet Global Fund Ownership.

- Table 8 -

Table 8 shows the results of regressing these two fund ESG measures on the ESG reporting score. In column 1, we find a positive and significant relation between having a high or medium reporting score and the portfolio ESG score of funds. Economically, fund families that receive a high reporting score have an ESG portfolio score computed by Morningstar that is 3.3% of a standard deviation higher than the baseline group of non-PRI investors. Fund families with a low reporting score, by contrast, do not exhibit better portfolio ESG scores. In column 2, we find similar results using the RepRisk incident score as the dependent variable. Funds with high reporting scores are less exposed to firms that experience ESG incidents.

Next, we test if fund families that disclose better ESG practices manage more of their assets in mutual funds with an explicit ESG mandate. We conjecture that more dedicated ESG investors offer more ESG products. Column 3 of Table 8 shows that all PRI signatories that disclose on their ESG practices manage 4 to 10% more assets in ESG funds compared with non-PRI investors. Importantly, this difference increases linearly with better reporting scores, with this difference being almost twice as large for the highest-scoring funds.

- Table 9 -

[22]The Peak RepRisk Index reflects a firm's history of incidents. It takes higher values when a firm had a higher number of incidents or more severe incidents in the past two years.

Besides allocating funds to more sustainable firms, another proxy for the level of ESG commitment is engaging firms to make them more sustainable.[23] To test if this is the case, we make use of PRI's collaboration platform, where signatories can jointly engage firms on pre-specified issues, like deforestation or child labor. Within each engagement, lead investors take on most of the responsibility of communicating with firms.[24]

In Table 9, we ask if fund families that disclose better ESG practices use collaborative engagements to make companies more sustainable. We find a strong and positive association between the ESG reporting score of funds and the propensity to participate in collaborative engagements, both as a leader (column 1) and as a supporting investor (column 2). The same holds for the intensive margin, i.e., higher-scoring signatories also engage a larger number of firms (columns 3 and 4).

Taken together, these findings suggest that the disclosure of better ESG practices is not cheap talk and that the boost in flows that comes with better disclosure is consistent with a better match between responsible capital and asset managers with better ESG practices.

7 The role of responsible institutional asset owners

This section examines what prevents signatories from overstating their ESG practices in the R&A framework. Our evidence that better ESG reporting is associated with better ESG practices may be surprising given that the reporting is not audited and recent studies document that institutional investors sometimes commit to the PRI without implementing ESG (Gibson Brandon et al., 2022; Kim and Yoon, 2022).

One such mechanism could be the scrutiny by responsible institutional asset owners. Institutional asset owners are oftentimes the clients of mutual funds and rely on them for asset management purposes (Stracca, 2006). Moreover, they are skilled investors who actively monitor fund managers (Evans and Fahlenbrach, 2012). Indeed, PRI staff confirmed that

[23] There is ample evidence that ESG engagement can be successful. See, e.g., Dimson, Karakaş, and Li, 2015, Dimson, Karakaş, and Li, 2020, Broccardo, Hart, and Zingales, 2022, or Ceccarelli et al., 2021.

[24] See Dimson, Karakaş, and Li, 2020 for an extensive overview of collaborative engagements .

asset owners are aware of and frequently demand the R&A frameworks of funds they invest in. Therefore, by comparing the investment managers' disclosure to their actual ESG practices, responsible institutional asset owners could make wrongful disclosure more costly.

Following *Hypothesis 4*, we test whether our previous findings are more pronounced when signatories are under more scrutiny by responsible asset owners. We proxy for this by splitting our international sample into countries where asset owners manage above-median and below-median assets relative to investment managers among all PRI signatories. For this test, we rely on the categorization of investors provided to us by PRI. Appendix Table IA11 shows the distribution of our sample in high- and low-scrutiny countries.

- Table 10 -

We find evidence confirming our hypothesis: Table 10 shows that PRI signatories with high reporting scores are associated with both better institutional fund flows and better ESG practices only in countries where responsible asset owners have a higher presence. In these high-scrutiny countries, high-scoring signatories receive 38 bps more flows (Panel A); hold more sustainable stocks, have fewer incidents, and manage more assets in dedicated ESG funds (Panel B); and lead and support more collaborative engagements (Panel C).

In countries where institutional responsible asset owners have a low presence, by contrast, we find no evidence of better flows and only weak evidence of better ESG practices. In these low-scrutiny countries, high-scoring signatories do *not* have higher flows (Panel A) nor do they have different ESG portfolio scores or incident scores (Panel B) than non-PRI institutions. If anything, high-scoring signatories participate in slightly more collaborative engagements (Panel C) compared with lower-scoring signatories. However, the coefficients are an order of magnitude smaller compared with funds domiciled in high-scrutiny countries.

We conclude that monitoring by responsible asset owners is an important factor in ensuring that PRI signatories' ESG disclosure is credible.

8 Conclusion

We provide evidence that ESG disclosure by institutional investors can mitigate information asymmetries in the responsible investing landscape by enabling clients to allocate responsible capital to asset managers with better ESG incorporation – as long as responsible institutional asset owners hold asset managers accountable.

We exploit a unique setting in which mutual fund families disclose their ESG practices as part of their commitment to the PRI, the largest responsible investor initiative. Mutual funds that disclose superior ESG practices through the PRI's standardized reporting framework receive more assets from institutional clients. This effect is more pronounced when the ESG disclosure is corroborated by high ESG fund ratings from Morningstar. The disclosure correlates with more sustainable investment practices, such as holding more sustainable stocks, engaging companies more on ESG issues, and managing more assets in mutual funds with an explicit ESG mandate. Finally, we observe both the higher fund flows and better ESG practices only in countries where responsible institutional asset owners have a stronger presence.

Investment managers and advisors are continuously developing their ESG practices, making it difficult to standardize non-financial disclosure. During this process, both regulators and market participants will need to continuously re-evaluate reporting standards, investor ESG preferences, and client ESG sophistication. Our paper is a first step toward understanding the challenges and opportunities of non-financial disclosure frameworks.

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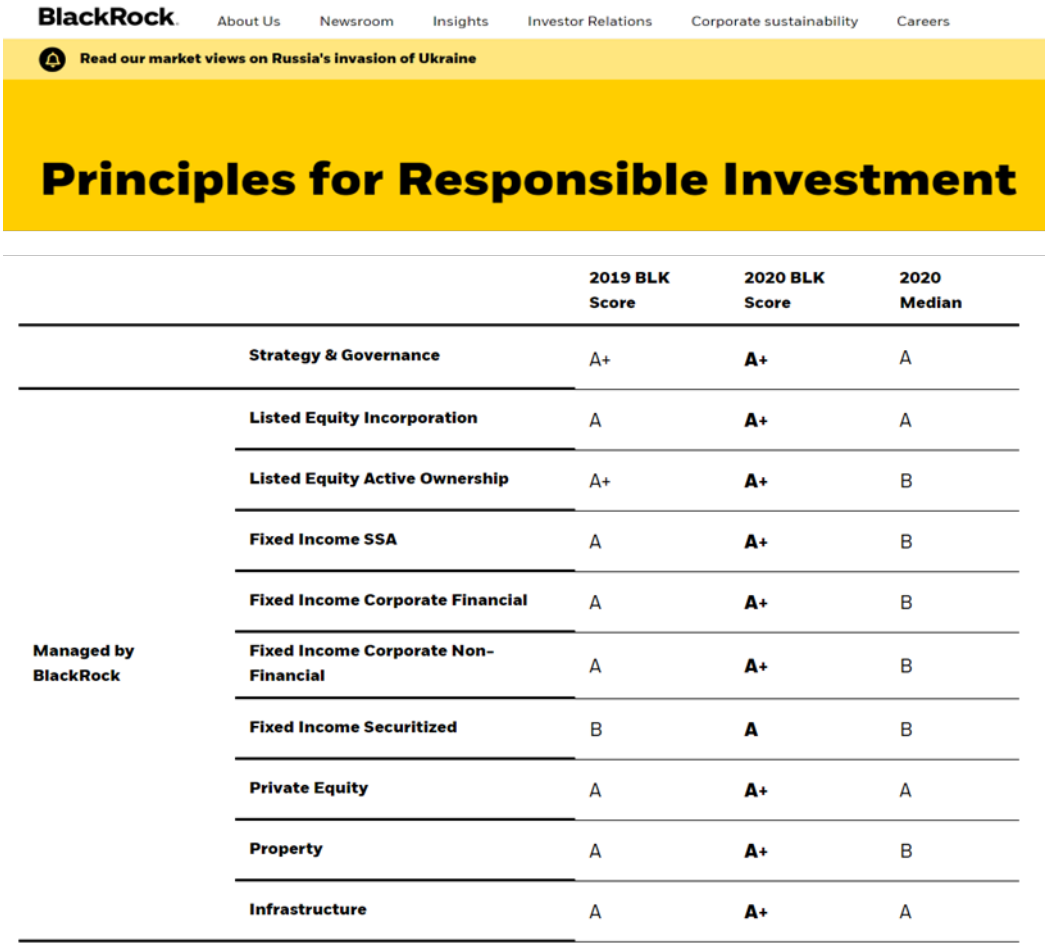
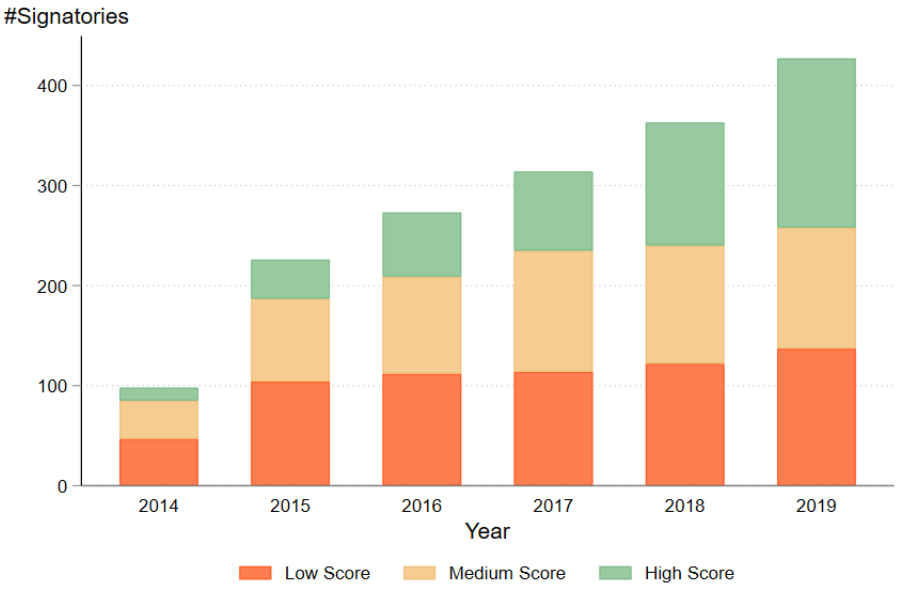
Figures

Figure 1: Example of a Reporting & Assessment scorecard
This figure shows the Reporting & Assessment scorecard of a PRI signatory. This exemplary signatory received the highest ESG reporting score, A+, on almost all modules in the R&A Framework.



		2019 BLK Score	2020 BLK Score	2020 Median
	Strategy & Governance	A+	**A+**	A
Managed by BlackRock	**Listed Equity Incorporation**	A	**A+**	A
	Listed Equity Active Ownership	A+	**A+**	B
	Fixed Income SSA	A	**A+**	B
	Fixed Income Corporate Financial	A	**A+**	B
	Fixed Income Corporate Non-Financial	A	**A+**	B
	Fixed Income Securitized	B	**A**	B
	Private Equity	A	**A+**	A
	Property	A	**A+**	B
	Infrastructure	A	**A+**	A

Figure 2: ESG reporting scores over time
This figure shows the distribution over time of the number of signatories by their ESG reporting score. Low score corresponds to an average reporting score below "B," medium score to an average reporting score between B and A, and high score to a reporting score of A or higher. The sample is at the signatory-year average level and covers the years from 2014 to 2019.



Tables

Table 1: Disclosure of the ESG reporting scores
This table provides statistics on whether signatories disclose their ESG reporting scores on their homepage or in their annual reports. The signatories are divided into groups based on their ESG reporting scores. "High score" comprises signatories that have an average score of A or higher. "Medium score" refers to those with an average score between B and A. "Low score" are signatories with a score lower than B. For each group, we show both the raw number of disclosing and not disclosing signatories as well as the asset-weighted fractions. Disclosure data were hand-collected from signatories' homepages and annual reports in 2021. The sample is at the signatory-level and scores refer to the most recent cross-section of 2019.

	Disclosed	Not disclosed	Total
High reporting score (score $\geq A$)			
#Signatories:	104 (55%)	89 (45%)	198 (100%)
%AUM:	78.55%	21.45%	
Medium reporting score (score $\in [B; A)$)			
#Signatories:	30 (26%)	97 (76%)	127 (100%)
%AUM:	65.15%	34.85%	
Low reporting score (score $< B$)			
#Signatories:	18 (12%)	134 (88%)	152 (100%)
%AUM:	24.75%	75.25%	

Table 2: Summary statistics of the fund sample

This table shows summary statistics of our sample consisting of PRI signatory mutual funds and non-PRI mutual funds. Panel A shows all funds, whereas panels B and C restrict the sample to institutional and retail funds, respectively. Institutional funds have more than 50% of assets from institutional share classes. The sample is at the fund-month level and covers the period from 2011 to 2019. We include all funds from countries with at least one signatory as of 2019. Mutual fund data are from Morningstar. PRI membership comes from the PRI. PRI is an indicator for funds that (eventually) join the PRI. Post is an indicator for the period after a fund becomes signatory. All variables are defined in Internet Appendix Table IA1.

Panel A: Full sample

	N	min	p25	mean	p50	p75	max	sd
PRI	3,244,621	0.00	0.00	0.60	1.00	1.00	1.00	0.49
Post× PRI	3,244,621	0.00	0.00	0.49	0.00	1.00	1.00	0.50
Flows	3,244,621	-27.39	-1.55	0.22	-0.20	0.87	57.00	6.22
Log assets$_{t-1}$	3,244,621	1.20	16.78	18.10	18.16	19.50	27.33	2.12
%AUM Inst	3,244,621	0.00	0.00	0.18	0.00	0.12	1.00	0.34
Institutional fund	3,244,621	0.00	0.00	0.17	0.00	0.00	1.00	0.38
Return$_{t-12;t-1}$	2,948,106	-46.58	-2.65	5.52	4.42	13.32	92.31	12.33
Return$_{t-24;t-13}$	2,561,260	-46.58	-1.94	6.43	5.41	14.55	92.31	12.66
Stdev. ret$_{t-1}$	3,199,384	0.33	2.38	3.77	3.49	4.86	11.82	1.96
Log Fund age$_{t-1}$	3,177,669	0.04	1.47	2.06	2.16	2.72	3.53	0.82
Stars$_{t-1}$	2,193,257	1.00	2.00	3.10	3.00	4.00	5.00	1.07
Stars upgrade	2,168,377	0.00	0.00	0.07	0.00	0.00	1.00	0.25
Stars downgrade	2,168,377	0.00	0.00	0.07	0.00	0.00	1.00	0.25
ESG fund	3,244,621	0.00	0.00	0.09	0.00	0.00	1.00	0.29
ESG Globes	591,445	1.00	2.00	3.04	3.00	4.00	5.00	1.11
Δ5Globes	3,244,621	0.00	0.00	0.00	0.00	0.00	1.00	0.07
Δ1Globes	3,244,621	0.00	0.00	0.00	0.00	0.00	1.00	0.07

Panel B: Institutional funds

	N	min	p25	mean	p50	p75	max	sd
PRI	565,064	0.00	0.00	0.62	1.00	1.00	1.00	0.48
Post× PRI	565,064	0.00	0.00	0.51	1.00	1.00	1.00	0.50
Flows	565,064	-27.38	-1.15	0.51	-0.00	1.22	57.00	6.19
Log assets$_{t-1}$	565,064	3.09	17.50	18.78	18.85	20.16	26.40	2.00
%AUM Inst	565,064	0.50	0.76	0.87	0.96	1.00	1.00	0.16
Institutional fund	565,064	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Return$_{t-12;t-1}$	510,242	-44.92	-1.32	6.32	5.05	13.79	78.61	11.79
Return$_{t-24;t-13}$	443,233	-44.92	-0.63	7.29	5.97	15.01	78.61	12.13
Stdev. ret$_{t-1}$	555,307	0.33	2.09	3.44	3.19	4.56	11.81	1.90
Log Fund age$_{t-1}$	559,356	0.04	1.33	1.89	1.95	2.51	3.53	0.79
Stars$_{t-1}$	414,098	1.00	3.00	3.43	3.00	4.00	5.00	1.04
Stars upgrade	409,798	0.00	0.00	0.07	0.00	0.00	1.00	0.25
Stars downgrade	409,798	0.00	0.00	0.07	0.00	0.00	1.00	0.25
ESG fund	565,064	0.00	0.00	0.13	0.00	0.00	1.00	0.34
ESG Globes	131,647	1.00	2.00	3.03	3.00	4.00	5.00	1.08
Δ5Globes	565,064	0.00	0.00	0.01	0.00	0.00	1.00	0.08
Δ1Globes	565,064	0.00	0.00	0.01	0.00	0.00	1.00	0.08

Panel C: Retail funds

	N	min	p25	mean	p50	p75	max	sd
PRI	2,679,557	0.00	0.00	0.60	1.00	1.00	1.00	0.49
Post× PRI	2,679,557	0.00	0.00	0.49	0.00	1.00	1.00	0.50
Flows	2,679,557	-27.39	-1.62	0.16	-0.28	0.79	57.00	6.23
Log assets$_{t-1}$	2,679,557	1.20	16.64	17.95	18.02	19.34	27.33	2.11
%AUM Inst	2,679,557	0.00	0.00	0.03	0.00	0.00	0.50	0.09
Institutional fund	2,679,557	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Return$_{t-12;t-1}$	2,437,864	-46.58	-2.95	5.36	4.28	13.22	92.31	12.43
Return$_{t-24;t-13}$	2,118,027	-46.58	-2.24	6.25	5.28	14.45	92.31	12.76
Stdev. ret$_{t-1}$	2,644,077	0.33	2.44	3.84	3.55	4.92	11.82	1.97
Log Fund age$_{t-1}$	2,618,313	0.04	1.51	2.09	2.21	2.76	3.53	0.83
Stars$_{t-1}$	1,779,159	1.00	2.00	3.03	3.00	4.00	5.00	1.06
Stars upgrade	1,758,579	0.00	0.00	0.07	0.00	0.00	1.00	0.25
Stars downgrade	1,758,579	0.00	0.00	0.07	0.00	0.00	1.00	0.25
ESG fund	2,679,557	0.00	0.00	0.08	0.00	0.00	1.00	0.28
ESG Globes	459,798	1.00	2.00	3.04	3.00	4.00	5.00	1.12
Δ5Globes	2,679,557	0.00	0.00	0.00	0.00	0.00	1.00	0.07
Δ1Globes	2,679,557	0.00	0.00	0.00	0.00	0.00	1.00	0.07

Table 3: Summary statistics of the PRI Reporting & Assessment framework
This table shows summary statistics for PRI signatory funds that reported their ESG practices to the PRI and received an ESG reporting score. Panel A shows all funds, whereas panels B and C restrict the sample to institutional and retail funds, respectively. Institutional funds have more than 50% of assets from institutional share classes. The sample is at the fund-year level and covers the period from 2014, when the Reporting & Assessment framework was introduced, to 2019. ESG reporting scores come from the PRI. The score variables take a value of 1 for the lowest score, E, and a value of 6 for the highest score, A+. The various modules that constitute the overall ESG reporting scores are listed separately. SAM stands for "Selection, Appointment, and Monitoring processes." All variables are defined in Internet Appendix Table IA1.

Panel A: Full sample

	N	min	p25	mean	p50	p75	max	sd
Reporting score$_{t-1}$	106,185	1.25	3.50	4.22	4.25	5.00	6.00	0.95
Reporting score$^{restr.}_{t-1}$	106,185	1.25	4.00	4.61	4.75	5.25	6.00	0.86
Reporting score$_{t-1} \geq A$	106,185	0.00	0.00	0.27	0.00	1.00	1.00	0.44
Reporting score$_{t-1} \in [B; A)$	106,185	0.00	0.00	0.34	0.00	1.00	1.00	0.47
Reporting score$_{t-1} < B$	106,185	0.00	0.00	0.39	0.00	1.00	1.00	0.49
Strategy & Governance	106,185	2.00	5.00	5.08	5.00	6.00	6.00	0.84
SAM - Listed Equity	41,332	1.00	1.00	2.74	2.00	4.00	6.00	1.52
SAM - Fixed Income	20,111	1.00	1.00	2.39	1.00	4.00	6.00	1.77
Listed Equity - Screening	89,726	1.00	4.00	4.64	5.00	5.00	6.00	1.06
Listed Equity - Integration	97,432	1.00	4.00	4.53	5.00	5.00	6.00	1.00
Active Ownership	103,063	1.00	4.00	4.22	4.00	5.00	6.00	1.09
Private Equity	19,680	1.00	1.00	2.07	2.00	2.00	6.00	1.21
Direct Property	31,753	1.00	1.00	3.18	4.00	5.00	6.00	1.68
Direct Infrastructure	14,830	1.00	2.00	3.17	2.00	5.00	6.00	1.78

Panel B: Institutional funds

	N	min	p25	mean	p50	p75	max	sd
Reporting score$_{t-1}$	19,517	1.25	3.67	4.35	4.50	5.00	6.00	0.98
Reporting score$^{restr.}_{t-1}$	19,517	1.25	4.25	4.66	4.75	5.25	6.00	0.86
Reporting score$_{t-1} \geq A$	19,517	0.00	0.00	0.33	0.00	1.00	1.00	0.47
Reporting score$_{t-1} \in [B; A)$	19,517	0.00	0.00	0.35	0.00	1.00	1.00	0.48
Reporting score$_{t-1} < B$	19,517	0.00	0.00	0.32	0.00	1.00	1.00	0.47
Strategy & Governance	19,517	2.00	5.00	5.09	5.00	6.00	6.00	0.84
SAM - Listed Equity	4,865	1.00	2.00	3.16	3.00	5.00	6.00	1.61
SAM - Fixed Income	2,428	1.00	1.00	2.99	3.00	5.00	6.00	1.92
Listed Equity - Screening	16,074	1.00	4.00	4.69	5.00	5.00	6.00	1.06
Listed Equity - Integration	17,184	1.00	4.00	4.60	5.00	5.00	6.00	0.99
Active Ownership	18,424	1.00	4.00	4.24	4.00	5.00	6.00	1.08
Private Equity	3,883	1.00	1.00	1.90	2.00	2.00	6.00	1.09
Direct Property	6,532	1.00	2.00	3.42	4.00	5.00	6.00	1.69
Direct Infrastructure	3,853	1.00	1.00	3.24	2.00	5.00	6.00	1.88

Panel C: Retail funds

	N	min	p25	mean	p50	p75	max	sd
Reporting score$_{t-1}$	86,668	1.29	3.50	4.19	4.25	5.00	6.00	0.94
Reporting score$^{restr.}_{t-1}$	86,668	1.33	4.00	4.60	4.75	5.25	6.00	0.86
Reporting score$_{t-1} \geq A$	86,668	0.00	0.00	0.26	0.00	1.00	1.00	0.44
Reporting score$_{t-1} \in [B; A)$	86,668	0.00	0.00	0.34	0.00	1.00	1.00	0.47
Reporting score$_{t-1} < B$	86,668	0.00	0.00	0.41	0.00	1.00	1.00	0.49
Strategy & Governance	86,668	2.00	5.00	5.08	5.00	6.00	6.00	0.84
SAM - Listed Equity	36,467	1.00	1.00	2.68	2.00	4.00	6.00	1.49
SAM - Fixed Income	17,683	1.00	1.00	2.30	1.00	4.00	6.00	1.73
Listed Equity - Screening	73,652	1.00	4.00	4.63	5.00	5.00	6.00	1.06
Listed Equity - Integration	80,248	1.00	4.00	4.52	5.00	5.00	6.00	1.01
Active Ownership	84,639	1.00	4.00	4.21	4.00	5.00	6.00	1.10
Private Equity	15,797	1.00	1.00	2.12	2.00	2.00	6.00	1.23
Direct Property	25,221	1.00	1.00	3.11	4.00	5.00	6.00	1.67
Direct Infrastructure	10,977	1.00	2.00	3.14	2.00	5.00	6.00	1.74

Table 4: ESG reporting scores and fund flows

This table shows regressions of flows on indicator variables for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and smaller than B. These indicators are set to zero for months when no scores are available or when the fund is not a PRI signatory. All regressions control for lagged fund characteristics, fund-family fixed effects, and either month or category-by-month fixed effects. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. T-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.07	0.06	0.23**	0.20**	0.03	0.01
	(1.30)	(1.12)	(2.50)	(2.31)	(0.44)	(0.24)
Reporting score$_{t-1} \in [B; A)$	0.01	-0.03	0.03	0.01	-0.00	-0.05
	(0.18)	(-0.64)	(0.32)	(0.10)	(-0.04)	(-0.91)
Reporting score$_{t-1} < B$	0.00	-0.01	0.03	0.04	-0.01	-0.02
	(0.04)	(-0.18)	(0.25)	(0.34)	(-0.16)	(-0.42)
Return$_{t-1}$	0.06***	0.11***	0.03**	0.09***	0.06***	0.11***
	(5.72)	(10.08)	(2.46)	(5.76)	(6.09)	(9.99)
Return$_{t-12;t-1}$	0.04***	0.06***	0.03***	0.06***	0.04***	0.06***
	(17.07)	(20.55)	(9.66)	(11.42)	(16.79)	(20.11)
Return$_{t-24;t-13}$	0.01***	0.02***	0.01***	0.03***	0.01***	0.01***
	(6.02)	(10.64)	(4.29)	(8.97)	(5.80)	(8.76)
Stdev. ret$_{t-1}$	-0.14***	-0.10***	-0.15***	-0.09***	-0.14***	-0.10***
	(-8.97)	(-5.90)	(-7.82)	(-3.16)	(-8.17)	(-5.50)
Log assets$_{t-1}$	0.04***	0.04***	0.01	0.01	0.04***	0.04***
	(4.54)	(4.84)	(0.87)	(0.68)	(4.15)	(4.51)
Log Fund age$_{t-1}$	-0.56***	-0.56***	-0.64***	-0.62***	-0.52***	-0.53***
	(-19.43)	(-20.29)	(-11.88)	(-12.02)	(-16.84)	(-17.76)
Stars upgrade	0.02	-0.02	0.00	-0.06	0.02	-0.02
	(1.01)	(-1.47)	(0.05)	(-1.65)	(1.10)	(-0.95)
Stars downgrade	-0.10***	-0.04**	-0.11**	-0.03	-0.09***	-0.03*
	(-5.10)	(-2.07)	(-2.61)	(-0.80)	(-4.79)	(-1.95)
Δ5Globes	-0.01	0.01	0.04	0.06	-0.02	-0.01
	(-0.12)	(0.26)	(0.29)	(0.42)	(-0.36)	(-0.16)
Δ1Globes	-0.16**	-0.15**	-0.25	-0.20	-0.12*	-0.12*
	(-2.39)	(-2.16)	(-1.40)	(-1.16)	(-1.90)	(-1.77)
Observations	1,865,535	1,865,535	367,838	367,838	1,497,229	1,497,229
R-squared	0.03	0.05	0.04	0.06	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Table 5: ESG reporting scores and fund flows - Identification based on the introduction of the Reporting & Assessment framework in 2014

This table shows regressions of flows on an indicator variable for several cutoffs of the ESG reporting scores of PRI signatories. The sample covers only signatories who joined before 2013, when submitting a Reporting & Assessment report became mandatory; signatories who did not file such a report; and non-PRI investors. We set the indicator variables to zero for months when no scores are available or when the fund is not a PRI signatory. All regressions control for lagged fund characteristics, fund-family fixed effects, and either month or category-by-month fixed effects. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. T-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

Dep. variable:	Flows					
	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Reporting score$_{t-1} \geq A$	0.17***	0.15**	0.40***	0.32***	0.12*	0.11
	(2.77)	(2.44)	(3.47)	(2.86)	(1.87)	(1.61)
Reporting score$_{t-1} \in [B; A)$	0.07	0.01	0.19	0.12	0.04	-0.02
	(1.14)	(0.20)	(1.61)	(1.05)	(0.67)	(-0.25)
Reporting score$_{t-1} < B$	0.09	0.05	0.18	0.14	0.07	0.04
	(1.18)	(0.78)	(1.03)	(0.83)	(0.97)	(0.55)
Observations	1,473,631	1,473,631	283,977	283,977	1,189,269	1,189,269
R-squared	0.03	0.05	0.04	0.07	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	No	Yes	No
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: ESG reporting scores and Morningstar's ESG globes – Descriptive statistics

This table shows the absolute frequencies of funds along cutoffs of the ESG reporting scores of PRI signatories. The frequencies are reported along the Morningstar sustainability "globes" ratings.

	Morningstar sustainability ratings ("Globes")						
ESG reporting score	Missing	1	2	3	4	5	Total
Reporting score$_{t-1} \geq A$	205,548	10,964	31,688	57,696	36,561	17,345	359,802
Reporting score$_{t-1} \in [B; A)$	243,922	6,641	20,208	33,354	20,953	9,869	334,947
Reporting score$_{t-1} < B$	267,122	6,300	15,804	25,188	15,423	6,701	336,538
Missing	1,936,584	28,948	63,483	93,724	60,786	29,809	2,213,334
Total	2,653,176	52,853	131,183	209,962	133,723	63,724	3,244,621
% Reporting score$\geq A$	7.75%	20.74%	24.16%	27.48%	27.34%	27.22 %	11.09%

Table 7: ESG reporting scores and Morningstar's ESG globes

This table shows regressions of flows on an indicator variable for funds with a high ESG reporting score of A or greater and its interaction with an indicator for funds with five and one Morningstar ESG globes. The regressions control for funds having an ESG reporting score greater than B but less than A and for funds with a score smaller than B. The ESG reporting score and globes indicators are set to zero for months when no scores are available or when the fund is not a PRI signatory. All regressions control for lagged fund characteristics, fund-family fixed effects, and either month or category-by-month fixed effects. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. T-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A \times$ Five globes	0.19**	0.23***	0.42**	0.39**	0.15	0.20**
	(2.35)	(2.75)	(2.60)	(2.35)	(1.59)	(2.14)
Five globes	-0.01	0.02	0.05	0.11	-0.03	-0.02
	(-0.15)	(0.44)	(0.45)	(1.10)	(-0.55)	(-0.39)
Reporting score$_{t-1} \geq A \times$ One globe	-0.05	-0.06	-0.04	-0.02	-0.04	-0.06
	(-0.50)	(-0.61)	(-0.20)	(-0.09)	(-0.39)	(-0.52)
One globe	-0.16***	-0.11**	-0.20	-0.10	-0.14**	-0.11*
	(-2.78)	(-2.04)	(-1.65)	(-0.80)	(-2.36)	(-1.94)
Reporting score$_{t-1} \geq A$	0.07	0.05	0.20**	0.19**	0.03	0.01
	(1.21)	(0.95)	(2.20)	(2.10)	(0.43)	(0.09)
Reporting score$_{t-1} \in [B; A)$	0.02	-0.03	0.02	0.01	0.01	-0.05
	(0.33)	(-0.64)	(0.27)	(0.11)	(0.13)	(-0.91)
Reporting score$_{t-1} < B$	-0.00	-0.01	0.02	0.04	-0.01	-0.02
	(-0.00)	(-0.19)	(0.14)	(0.35)	(-0.16)	(-0.43)
Observations	1,906,244	1,865,535	373,919	367,838	1,532,309	1,497,229
R-squared	0.03	0.05	0.04	0.06	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Table 8: Are the ESG reporting scores cheap talk? - Portfolio holdings
This table shows regressions of funds' ESG portfolio scores (column 1), incident portfolio scores (column 2), and the percentage of assets in ESG funds (column 3) on indicator variables for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B. These indicators are set to zero for months when no scores are available or when the fund is not a PRI signatory. The dependent variables in columns 1 and 2 are the number of collaborative engagements where the fund had a lead role and those where it had a support role, respectively. Columns 3 and 4 use the number of companies engaged as a dependent variable. All regressions control for lagged fund characteristics and category-by-month fixed effects. The sample includes all funds from countries with at least one PRI signatory and spans from 2012 to September 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

Dep. variable:	ESG Score	RepRisk Incident Score	%ESG Funds
	(1)	(2)	(3)
Reporting score$_{t-1} \geq A$	0.27***	-0.46**	0.10***
	(3.22)	(-2.07)	(4.52)
Reporting score$_{t-1} \in [B; A)$	0.25***	-0.15	0.06***
	(3.18)	(-0.77)	(3.39)
Reporting score$_{t-1} < B$	0.06	-0.23	0.04***
	(0.81)	(-1.26)	(2.64)
Observations	704,274	464,355	1,865,571
R-squared	0.90	0.57	0.05
Controls	Yes	Yes	Yes
Category-Month FE	Yes	Yes	Yes

Table 9: Are the ESG reporting scores cheap talk? - Collaborative engagements
This table shows regressions of funds' involvement in collaborative engagements on indicator variables for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B (reference category). Only PRI signatories are included in these tests. Portfolio ESG Score is the weighted average of the Sustainalytics ESG ratings of a fund's holdings and is provided by Morningstar. The incident portfolio score is calculated based on the Peak RepRisk Index and is available only for U.S. funds. The percentage of assets in ESG funds is computed based on the total assets at the fund family level. The odd columns include funds from countries that have a strong presence of asset owners (above median AUM). The even columns show funds from the remaining countries. All regressions control for lagged fund characteristics and category-by-month fixed effects. The sample includes all funds from countries with at least one PRI signatory and spans from 2012 to September 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

Dep. variable:	#Engagements participated		#Companies engaged	
Investor role:	Lead	Support	Lead	Support
	(1)	(2)	(3)	(4)
Reporting score$_{t-1} \geq A$	0.90***	1.28***	2.39***	29.50***
	(7.14)	(8.81)	(6.29)	(7.67)
Reporting score$_{t-1} \in [B; A)$	0.55***	0.72***	1.40***	18.25***
	(4.64)	(5.34)	(4.13)	(5.31)
Reporting score$_{t-1} < B$	0.15*	0.21**	0.27	4.53*
	(1.71)	(2.04)	(1.48)	(1.69)
Observations	1,107,848	1,107,848	1,107,848	1,107,848
R-squared	0.10	0.11	0.08	0.09
Controls	Yes	Yes	Yes	Yes
Category-Month FE	Yes	Yes	Yes	Yes

Table 10: The role of asset owner scrutiny

This table shows regressions of flows (Panel A) or sustainability performance indicators (Panels B and C) on indicator variables for several cutoffs of the ESG reporting scores of PRI signatories. These are an average score of A or greater; greater than B but less than A; and smaller than B. These indicators are set to zero for months when no scores are available or when the fund is not a PRI signatory. The dependent variables in Panel B describe funds' holdings and are ESG portfolio scores (columns 1 and 2), incident portfolio scores (columns 3 and 4), and the percentage of assets in ESG funds (columns 5 and 6). Portfolio ESG Score is the weighted average of the Sustainalytics ESG ratings of a fund's holdings. The incident portfolio score is calculated based on the Peak RepRisk Index and is available only for U.S. funds. The percentage of assets in ESG funds is computed based on the total assets at the fund family level. Panel C looks at funds' involvement in collaborative engagements where the fund had a lead role or a supporting role. The sample in Panel C includes only PRI signatories. In all panels, the sample is split into countries where asset owners have above-median AUM (High AO) and countries with below-median asset owner representation (Low AO). PRI provided the categorization of signatories in asset owners and their relative size. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. T-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

Panel A: Fund flows

	All funds		Institutional		Retail	
Sample:	High AO	Low AO	High AO	Low AO	High AO	Low AO
	(1) Flows	(2) Flows	(3) Flows	(4) Flows	(5) Flows	(6) Flows
Reporting score$_{t-1} \geq A$	0.06	0.07	0.38**	0.16	0.01	0.03
	(0.79)	(1.08)	(2.13)	(1.55)	(0.17)	(0.40)
Reporting score$_{t-1} \in [B; A)$	0.00	-0.07	0.18	-0.03	-0.02	-0.10
	(0.01)	(-1.10)	(1.07)	(-0.31)	(-0.28)	(-1.28)
Reporting score$_{t-1} < B$	0.02	-0.03	0.23	-0.02	-0.00	-0.04
	(0.40)	(-0.38)	(1.31)	(-0.11)	(-0.03)	(-0.47)
Observations	957,105	896,548	111,499	253,686	844,726	642,363
R-squared	0.05	0.06	0.07	0.08	0.05	0.07
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Portfolio holdings

Dep. variable:	ESG Score		RepRisk Incident Score		%ESG Funds	
Sample:	High AO	Low AO	High AO	Low AO	High AO	Low AO
	(1)	(2)	(3)	(4)	(5)	(6)
Reporting score$_{t-1} \geq A$	0.41***	0.07	-0.95**	-0.31	0.14***	0.06*
	(3.75)	(0.89)	(-2.51)	(-1.26)	(4.22)	(1.93)
Reporting score$_{t-1} \in [B; A)$	0.36***	0.14	-0.75**	0.10	0.06***	0.04
	(3.55)	(1.57)	(-2.15)	(0.47)	(3.13)	(1.62)
Reporting score$_{t-1} < B$	0.12	0.02	-0.72**	0.00	0.03	0.06**
	(1.01)	(0.30)	(-2.19)	(0.00)	(1.41)	(2.36)
Observations	338,123	361,324	161,068	299,729	957,125	896,563
R-squared	0.91	0.91	0.51	0.61	0.10	0.04
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Engagement

Dep. variable:	#Engagements participated				#Companies engaged			
Investor role:	Lead		Support		Lead		Support	
Sample:	High AO	Low AO	High AO	Low AO	High AO	Low AO	High AO	Low AO
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Reporting score$_{t-1} \geq A$	1.10***	0.62***	1.76***	0.66***	2.70***	1.99***	41.99***	13.07***
	(5.95)	(4.40)	(8.78)	(4.46)	(4.70)	(4.49)	(7.86)	(3.66)
Reporting score$_{t-1} \in [B; A)$	0.76***	0.26***	0.97***	0.36***	1.90***	0.69***	25.28***	8.28***
	(3.94)	(3.07)	(4.56)	(3.42)	(3.33)	(3.39)	(4.91)	(2.80)
Reporting score$_{t-1} < B$	0.11	0.20**	0.17	0.27*	0.06	0.52**	3.80	5.17
	(0.80)	(2.18)	(1.19)	(1.92)	(0.19)	(2.62)	(0.98)	(1.62)
Observations	576,995	530,624	576,995	530,624	576,995	530,624	576,995	530,624
R-squared	0.15	0.11	0.20	0.09	0.13	0.10	0.16	0.07
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Internet Appendix

A Appendix - Institutional setting

Overall information

This appendix provides additional information about PRI's survey, the PRI Reporting & Assessment (R&A) framework. In 2019, the last year of our sample, the R&A framework consisted of 14 modules: Organizational Overview, Strategy and Governance, Climate Change Reporting, Manager Selection, Appointment and Monitoring, Listed Equity Incorporation, Listed Equity Active Ownership, Fixed Income, Private Equity, Property, Infrastructure, Direct Inclusive Finance, Indirect Inclusive Finance, Hedge Funds, and the Closing Module. Not every signatory needs to fill out all 14 modules. For example, only those signatories whose "total directly managed fixed income allocation is 10% or more of [their] total AUM" are required to fill out the Fixed Income module.[25]

Every signatory must fill out the Organizational Overview and Strategy and Governance modules. The former defines which of the modules are applicable on a signatory-by-signatory basis. The latter covers sustainability practices for the entire organization. An example question would be "Indicate if you have an investment policy that covers your responsible investment approach." If the answer is yes, signatories are asked to provide more details about the type of the policy via multiple choice answers (e.g., if the policies cover formalized guidelines on environmental and/or social factors). The answer to this question is then assessed by PRI, who gives the signatory a number of points (PRI calls these "stars") for its efforts on responsible investing. More points indicate better ESG practices. In the exemplary question above, PRI gives three points if the signatory implements at least three different policies that cover the majority of AUM, two points for implementing two policies, and one star for one policy. Most signatories received the maximum of three points in this question (the sample mean in 2019 is 2.6).

It is not as easy to score the maximum number of points for all survey items. For example,

[25] For more information on the survey than presented in this appendix, please consult https://www.unpri.org/reporting-and-assessment/reporting-and-assessment-archive/6567.article.

the next question asks about the specific investment policy documents that are available online. For example, if the signatory discloses its engagement or proxy voting policy or the formalized guidelines on environmental factors mentioned in the previous question. Here the maximum score is achieved only if the signatory discloses all the policies mentioned in the previous question. Of those that received three stars for the previous question, only about a fifth get the highest number of points for this question as well.

A signatory's reporting score – which is the focus of this study – is the sum of the points that a signatory receives for each question in the survey, averaged over the different modules of the survey. Reporting scores can take values from A+ to E, where A+ is the highest score that signatories can get on their ESG disclosure.

Example questions

To provide the reader with an intuitive understanding of the ESG reporting scores, we illustrate the correlation between signatories' reporting scores and their answers to exemplary questions about how responsible investing is implemented at the organizational level.

Internet Appendix Figure IA1 shows summary statistics for institutions whose C-level suite has oversight or accountability for the responsible investing process as well as for institutions whose compensation structure is linked to responsible investing targets or KPIs. While 30% of all PRI signatories implemented RI objectives in their C-level compensation, less than 20% tie the variable compensation of their executives to responsible investing metrics. This number is three times larger for PRI signatories with a high reporting score than for signatories with a medium or low reporting score.

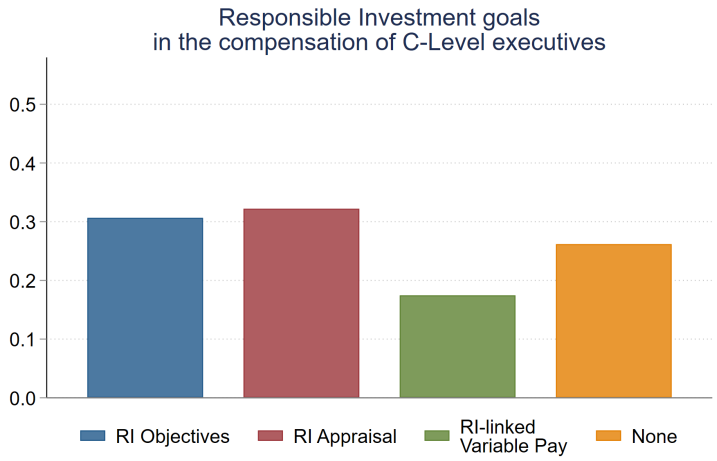
In Internet Appendix Figure IA2, we plot the number of dedicated ESG staff that signatories employ in their organizations. Across signatories, about 50% of them employ between 1 and 5 ESG employees. However, as it becomes apparent from the lower panels, there is a substantial difference between high- and low-scoring signatories. About 50% of the signatories with high reporting scores employ 6 or more ESG employees compared with 20% of the

signatories with a medium or low score.

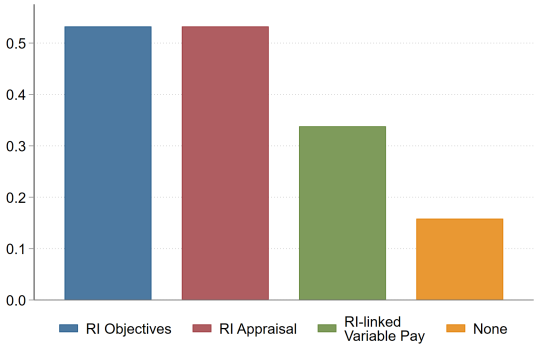
Internet Appendix Figure IA3 shows how signatories differ in their ESG incorporation practices. ESG incorporation strategies involve screening (which is altering the pool of possible investments based on positive, negative, or norms-based criteria), thematic (which is investing in responsible projects, such as renewables), and integration (which is considering ESG information in investment decisions). These strategies are not mutually exclusive, meaning that signatories can apply multiple incorporation strategy to the same assets. The figure shows that on average, signatories apply screening and integration strategies to 60% and 80% of their AUM, respectively. 40% of the signatories' AUM is not under an ESG incorporation strategy. Signatories with high reporting scores have only 20% of their assets without an ESG incorporation strategy, while signatories with medium or low reporting scores do not apply incorporation strategies to 50% of their AUM.

Internet Appendix Figure IA4 shows descriptive statistics for the engagement practices of PRI signatories. Signatories individually and collaboratively engage with 30% and 10% of their AUM, respectively. The lower panels show that signatories with high reporting scores do not engage more often than signatories with medium or low scores. Internet Appendix Figure IA5 looks at the intensive margin of engagement, measured as the number of interactions that signatories have with the engaged firms. With more than half of engaged firms (in terms of AUM), signatories have only one interaction during the reporting year. While this holds for all signatories, regardless of their ESG reporting score, high-scoring signatories tend to engage slightly more intensively, i.e., engagements where there are 2 or more interactions.

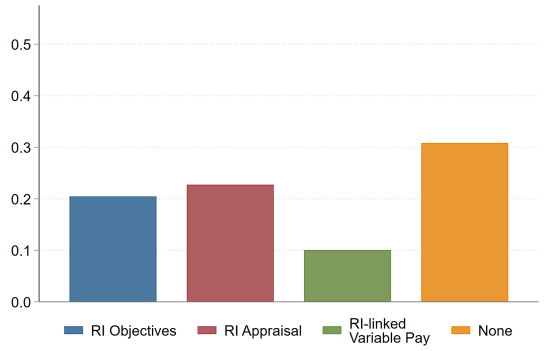
Figure IA1: C-Level compensation tied to responsible investing
This figure shows the relative frequency of C-level compensation that is tied to responsible investing criteria. The first (blue) bar plots signatories that implement responsible KPIs or goals in their objectives. The second (red) line shows signatories that use responsible investing criteria in the appraisal processes of C-Level executives. The third (green) line shows signatories where the variable pay of C-level executives is linked to responsible investing performance. Panel (a) shows all signatories, Panel (b) shows only signatories with high reporting scores, and Panel (c) shows signatories with medium or low reporting scores. The graph shows results for the year 2019.



(a) All signatories

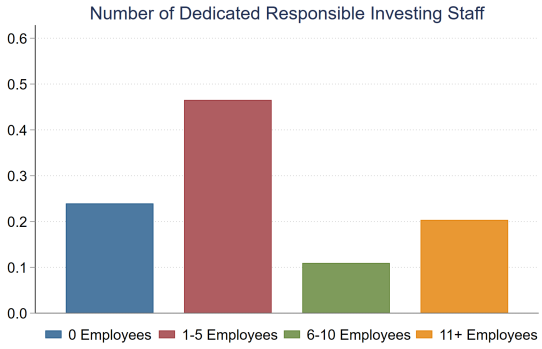


(b) High-scoring signatories

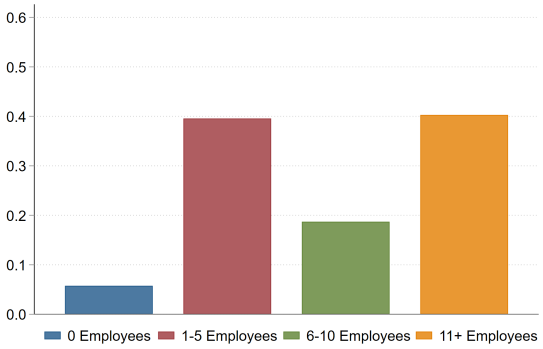


(c) Low and medium-scoring signatories

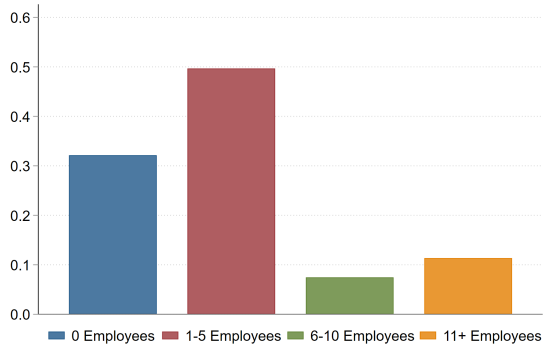
Figure IA2: Dedicated responsible investing staff
This figure plots the number of dedicated responsible investing staff that a signatory employs. Panel (a) shows all signatories, Panel (b) shows only signatories with high reporting scores, and Panel (c) shows signatories with medium or low reporting scores. The graph shows results for the year 2019.



(a) All signatories



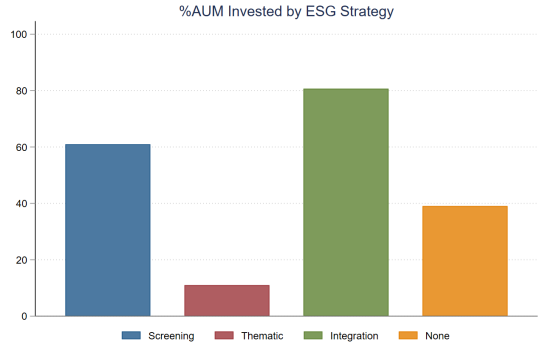
(b) High-scoring signatories



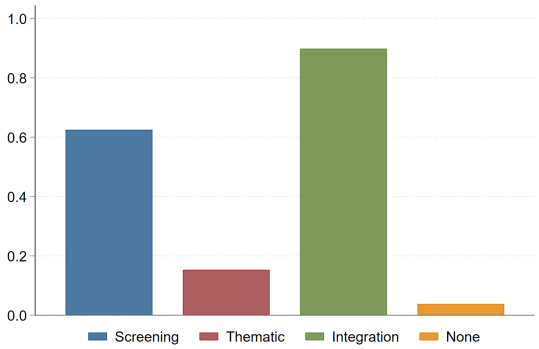
(c) Low and medium-scoring signatories

Figure IA3: ESG incorporation practices

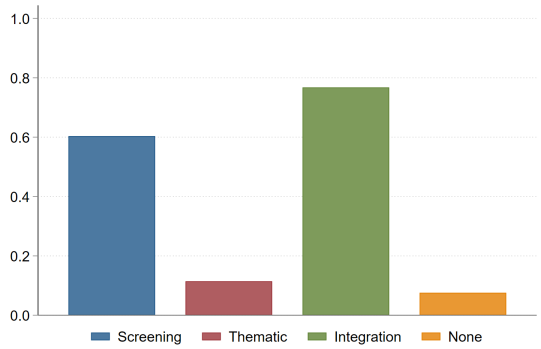
This figure plots the distribution of ESG incorporation practices of signatories. The panels show the applied ESG incorporation criteria (i.e., screening, thematic, or integration) to the actively managed portion of signatories' assets. These strategies are not mutually exclusive: Signatories often apply more than one incorporation strategy to their AUM. Panel (a) shows all signatories, Panel (b) shows only signatories with high reporting scores, and Panel (c) shows signatories with medium or low reporting scores. The sample covers the year 2019 for all panels.



(a) All signatories

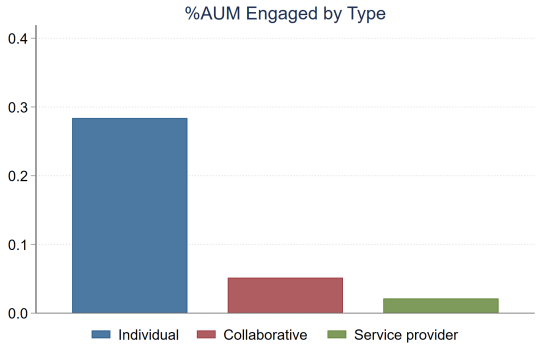


(b) High-scoring signatories

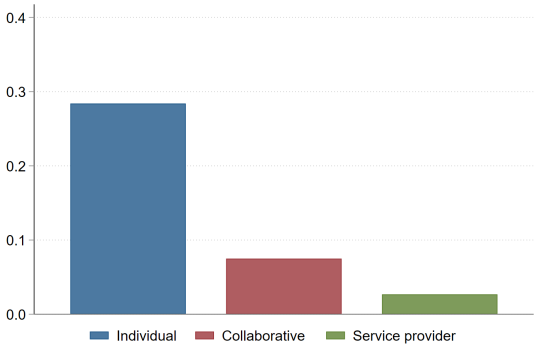


(c) Low and medium-scoring signatories

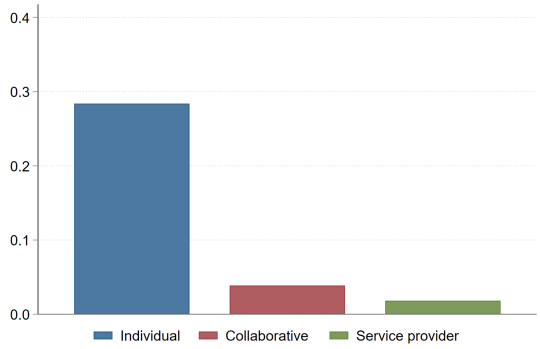
Figure IA4: Engagement practices - Extensive margin
This figure plots the distribution of engagement practices of signatories. Panel (a) shows all signatories, Panel (b) shows only signatories with high ESG reporting scores (≥A), and Panel (c) shows signatories with medium or low ESG reporting scores (<A). The sample covers the year 2019 for all panels.



(a) All signatories

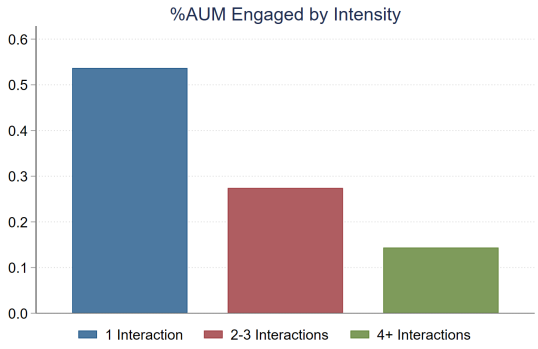


(b) High-scoring signatories

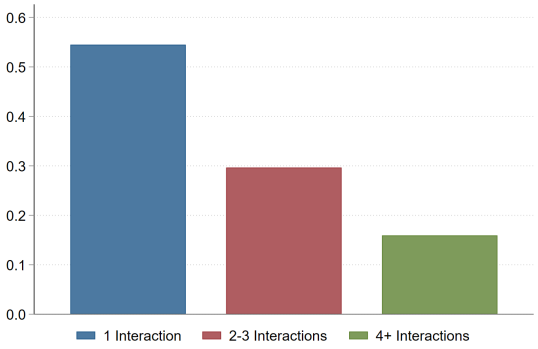


(c) Low and medium-scoring signatories

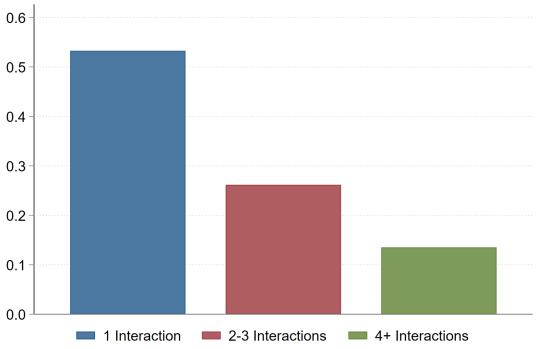
Figure IA5: Engagement practices - Intensive margin
This figure plots the distribution of engagement intensity of signatories measured as the number of interactions with the engaged firms. Panel (a) shows all signatories, Panel (b) shows only signatories with high ESG reporting scores (≥A), and Panel (c) shows signatories with medium or low ESG reporting scores (<A). The sample covers the year 2019 for all panels.



(a) All signatories



(b) High-scoring signatories



(c) Low and medium-scoring signatories

B Appendix - Additional Results

Table IA1: Variable definitions

Panel A: Fund-level variables

Flows	The inflow of funds, net of returns, that a mutual fund receives during a month measured in % of assets under management.
Normalized flows	Normalized flows are computed following Hartzmark and Sussman (2019): First, we split the sample into deciles of fund size. Second, we rank funds according to their net flows within their size decile and compute percentiles of the net flow rankings. These percentiles correspond to the normalized flows variable.
Institutional	Dummy for funds that have 50% or more of AUM from institutional asset classes.
ESG Portfolio Score	Morningstar's portfolio ESG score, which Morningstar calculates by value-weighting the Sustainalytics ESG scores of the stocks held by a mutual fund in a quarter.
Incident Portfolio Score	The value-weighted Peak RepRisk Index of the stocks held by a fund in a quarter. We calculate this variable using fund holding data from FactSet.
%AUM in ESG Funds	Percentage of a fund families' AUM that are held in mutual funds with a explicit ESG mandate.
Return_{t-1}	Return in the previous month.
$\text{Return}_{t-12;t-1}$	Return in the previous year.
$\text{Return}_{t-24;t-13}$	Return two years ago.
Stdev. ret	Standard deviation of monthly returns over the past twelve months.
Log assets	The natural logarithm of the AUM of a fund.
Log fund age	The natural logarithm of the number of years that passed from the incorporation date of the fund.
Stars	Morningstar's fund performance stars.
Stars upgrade	Indicator for the month when a fund receives one additional star.
Stars downgrade	Indicator for the month when a fund looses one star.
Δ5Globes	Indicator for the month when a fund switches in the five sustainability globes category.
Δ1Globe	Indicator for the month when a fund switches in the one sustainability globe category.
5 Globes	Indicator for funds that have five sustainability globes.
1 Globe	Indicator for funds that have one sustainability globe.
ESG Fund	Indicator variable for funds that are classified by Morningstar as "socially conscious".

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Panel B: PRI Reporting and Assessment Variables

PRI	Indicator for funds that eventually join the PRI.
Post × PRI	Indicator for the time period after a fund becomes a PRI signatory.
Reporting score$_{t-1}$	Average of the scores received by a fund across all Reporting & Assessment modules.
Reporting score$^{restr.}_{t-1}$	Average of the scores received by a fund across a subset of Reporting & Assessment modules: Strategy and Governance, Listed Equity - Screening, Listed Equity - Integration, and Active Ownership.
Reporting score $_{t-1} \geq A$	Indicator variable for funds that have an average ESG reporting score of A or greater across all modules.
Reporting score$_{t-1} \in [B; A)$	Indicator variable for funds that have an average ESG reporting score of B or greater, but smaller than A across all modules.
Reporting score$_{t-1} < B$	Indicator variable for funds that have an average ESG reporting score smaller than B across all modules.
#Engagements participated	The number of collaborative engagements in which the mutual fund family participated in a given year as either a leader or a supporter. Lead investors take on the main responsibility of engaging firms and coordinating the communication between shareholders and management. Collaborative engagements occur through the PRI collaboration platform. For more information see Dimson, Karakaş, and Li, 2020 and Ceccarelli et al., 2021.
#Companies engaged	The number of companies that a given investor engaged during a year through collaborative engagements.

Table IA2: Transition matrix between ESG reporting scores

This table shows the number (and percent) of signatories that change their ESG reporting score year-on-year. For example, a change of "+1" means that a signatory moves from a medium to a high (or from a low to a medium) reporting score. The sample is at the signatory-year level and spans from 2015 to 2019.

	Change in ESG Reporting Score					
Year	-2	-1	0	+1	+2	Total
2015	0 (0.00%)	2 (2.06%)	74 (76.29%)	21 (21.65%)	0 (0.00%)	97
2016	0 (0.00%)	14 (6.36%)	159 (72.27%)	41 (18.64%)	6 (2.73%)	220
2017	1 (0.38%)	11 (4.18%)	209 (79.47%)	37 (14.07%)	5 (1.90%)	263
2018	1 (0.33%)	12 (3.97%)	223 (73.84%)	56 (18.54%)	10 (3.31%)	302
2019	2 (0.56%)	15 (4.20%)	264 (73.95%)	68 (19.05%)	8 (2.24%)	357
Total	4 (0.33%)	54 (4.36%)	929 (74.98%)	223 (18.00%)	29 (2.34%)	1,239 (100.00%)

Table IA3: Robustness test for ESG reporting scores and fund flows - Alternative fund flow definition

This table shows regressions of flows on an indicator variable for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B. All regressions control for lagged fund characteristics and fund-family fixed effects. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes only PRI signatories and spans from 2014 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

Dep. variable:	Normalized flows					
	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Reporting score$_{t-1} \geq A$	1.22***	0.94**	1.56**	1.19*	1.11**	0.82*
	(2.96)	(2.44)	(2.11)	(1.74)	(2.48)	(1.96)
Reporting score$_{t-1} \in [B; A)$	0.55	0.13	0.39	0.22	0.49	0.01
	(1.48)	(0.37)	(0.61)	(0.39)	(1.23)	(0.02)
Reporting score$_{t-1} < B$	0.31	0.12	0.07	0.16	0.28	0.06
	(0.79)	(0.30)	(0.09)	(0.21)	(0.71)	(0.16)
Observations	1,906,244	1,865,535	373,919	367,838	1,532,309	1,497,229
R-squared	0.08	0.11	0.07	0.11	0.08	0.12
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	No	No	No	No	No
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA4: Robustness test for ESG reporting scores and fund flows - Subset of Reporting & Assessment modules

This table shows regressions of flows on an indicator variable for several cutoffs of the restricted ESG reporting scores (Reporting score$^{restr.}$) of PRI signatories, using only a subset of modules (Strategy & Governance, Listed Equity Screening, Listed Equity Integration, and Active Ownership). These are a score of A or greater; greater than B but less than A; and one smaller than B. These indicators are set to zero for months when no scores are available or the fund is not a PRI signatory. All regressions control for lagged fund characteristics and fund-family fixed effects. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$^{restr.}_{t-1} \geq A$	0.06	0.05	0.24**	0.22**	0.02	-0.00
	(1.17)	(0.93)	(2.48)	(2.43)	(0.32)	(-0.06)
Reporting score$^{restr.}_{t-1} \in [B; A)$	0.01	-0.02	-0.05	-0.03	0.03	-0.01
	(0.18)	(-0.38)	(-0.54)	(-0.40)	(0.59)	(-0.26)
Reporting score$^{restr.}_{t-1} < B$	-0.04	-0.06	-0.01	-0.03	-0.03	-0.07
	(-0.66)	(-1.02)	(-0.08)	(-0.18)	(-0.54)	(-1.18)
Observations	1,865,535	1,865,535	367,838	367,838	1,497,229	1,497,229
R-squared	0.03	0.05	0.04	0.06	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA5: Robustness test for ESG reporting scores and fund flows - Controlling for ESG Funds

This table shows regressions of flows on an indicator variable for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B. These indicators are set to zero for months when no scores are available, or the fund is not a PRI signatory. All regressions control for lagged fund characteristics – including an indicator variable equal to one for ESG funds ("socially conscious funds") – and fund-family fixed effects. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.07	0.06	0.23**	0.20**	0.02	0.01
	(1.24)	(1.07)	(2.46)	(2.27)	(0.40)	(0.21)
Reporting score$_{t-1} \in [B; A)$	0.01	-0.03	0.02	0.01	-0.00	-0.05
	(0.12)	(-0.70)	(0.29)	(0.07)	(-0.09)	(-0.97)
Reporting score$_{t-1} < B$	0.00	-0.01	0.03	0.04	-0.01	-0.02
	(0.01)	(-0.21)	(0.24)	(0.34)	(-0.19)	(-0.45)
ESG Fund	0.27***	0.28***	0.24**	0.25***	0.28***	0.29***
	(5.98)	(6.14)	(2.56)	(2.82)	(5.92)	(6.12)
Observations	1,865,535	1,865,535	367,838	367,838	1,497,229	1,497,229
R-squared	0.03	0.05	0.04	0.06	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Table IA6: Robustness test for ESG reporting scores and fund flows - Fund FEs
This table shows regressions of flows on an indicator variable for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B. These indicators are set to zero for months when no scores are available or the fund is not a PRI signatory. All regressions control for lagged fund characteristics, and fund fixed effects. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.10*	0.09*	0.29***	0.25***	0.06	0.05
	(1.80)	(1.68)	(2.90)	(2.67)	(0.99)	(0.91)
Reporting score$_{t-1} \in [B; A)$	0.01	-0.02	0.07	0.06	0.01	-0.03
	(0.31)	(-0.47)	(0.77)	(0.67)	(0.13)	(-0.66)
Reporting score$_{t-1} < B$	0.03	0.02	0.08	0.07	0.02	0.01
	(0.51)	(0.35)	(0.63)	(0.62)	(0.33)	(0.17)
Observations	1,865,112	1,865,112	367,696	367,696	1,496,802	1,496,802
R-squared	0.10	0.11	0.11	0.13	0.11	0.12
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA7: Robustness test for ESG reporting scores and fund flows - Controlling for performance "stars"

This table shows regressions of flows on an indicator variable for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B. These indicators are set to zero for months when no scores are available or the fund is not a PRI signatory. All regressions control for lagged fund characteristics – including Morningstar's performance "stars" – and fund-family fixed effects. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.05	0.04	0.22**	0.20**	0.00	-0.00
	(0.89)	(0.75)	(2.51)	(2.41)	(0.08)	(-0.08)
Reporting score$_{t-1} \in [B; A)$	-0.01	-0.04	0.01	0.00	-0.02	-0.06
	(-0.15)	(-0.97)	(0.18)	(0.04)	(-0.31)	(-1.20)
Reporting score$_{t-1} < B$	-0.00	-0.02	0.02	0.03	-0.01	-0.03
	(-0.10)	(-0.34)	(0.16)	(0.27)	(-0.26)	(-0.54)
Stars$_{t-1}$	0.41***	0.40***	0.57***	0.55***	0.38***	0.37***
	(25.77)	(25.30)	(14.72)	(14.89)	(24.97)	(24.62)
Observations	1,883,481	1,883,481	371,101	371,101	1,511,919	1,511,919
R-squared	0.04	0.05	0.05	0.07	0.04	0.06
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA8: Joining the PRI and fund flows

This table shows difference-in-differences regressions of flows on an indicator for funds that join the PRI interacted with a dummy for the period after the fund became a signatory (Post). All regressions control for lagged fund characteristics, fund-family fixed effects, and either month or category-by-month fixed effects. The direct effect of the dummy Post is absorbed by the time fixed effects. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors double clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Post × PRI	-0.05	-0.02	0.02	0.06	-0.08	-0.03
	(-0.88)	(-0.32)	(0.17)	(0.57)	(-1.15)	(-0.56)
Return_{t-1}	0.06***	0.11***	0.03**	0.09***	0.06***	0.11***
	(5.72)	(10.09)	(2.46)	(5.76)	(6.09)	(9.99)
$\text{Return}_{t-12;t-1}$	0.04***	0.06***	0.03***	0.06***	0.04***	0.06***
	(17.07)	(20.55)	(9.69)	(11.46)	(16.80)	(20.12)
$\text{Return}_{t-24;t-13}$	0.01***	0.02***	0.01***	0.03***	0.01***	0.01***
	(6.00)	(10.62)	(4.30)	(8.97)	(5.78)	(8.75)
Stdev. ret_{t-1}	-0.14***	-0.10***	-0.15***	-0.09***	-0.14***	-0.10***
	(-8.99)	(-5.91)	(-7.84)	(-3.18)	(-8.18)	(-5.50)
Log assets_{t-1}	0.04***	0.04***	0.01	0.01	0.04***	0.04***
	(4.55)	(4.85)	(0.87)	(0.68)	(4.16)	(4.52)
Log Fund age_{t-1}	-0.56***	-0.56***	-0.65***	-0.62***	-0.52***	-0.53***
	(-19.44)	(-20.30)	(-11.91)	(-12.09)	(-16.84)	(-17.76)
Stars upgrade	0.02	-0.02	0.00	-0.06	0.02	-0.02
	(1.01)	(-1.47)	(0.03)	(-1.65)	(1.10)	(-0.95)
Stars downgrade	-0.10***	-0.04**	-0.11***	-0.03	-0.09***	-0.03*
	(-5.10)	(-2.07)	(-2.62)	(-0.81)	(-4.79)	(-1.95)
Δ5Globes	-0.01	0.01	0.04	0.06	-0.02	-0.01
	(-0.13)	(0.26)	(0.29)	(0.42)	(-0.36)	(-0.17)
Δ1Globes	-0.17**	-0.15**	-0.25	-0.21	-0.13*	-0.12*
	(-2.41)	(-2.17)	(-1.42)	(-1.17)	(-1.91)	(-1.77)
Constant	0.60***	0.24	1.33***	0.76**	0.50***	0.18
	(3.48)	(1.40)	(3.82)	(2.28)	(2.76)	(1.01)
Observations	1,865,535	1,865,535	367,838	367,838	1,497,229	1,497,229
R-squared	0.03	0.05	0.04	0.06	0.03	0.05
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Table IA9: Robustness test for ESG reporting scores - Identification test

This table shows regressions of flows on an indicator variable for several cutoffs of the ESG reporting scores of PRI signatories. These are a score of A or greater; greater than B but less than A; and one smaller than B. The sample covers only signatories that either joined before 2013, when submitting a Reporting & Assessment report became mandatory, or funds that do *not* file such report. These indicators are set to zero for months when no scores are available, or the fund is not a PRI signatory. All regressions control for lagged fund characteristics. Panel A uses normalized flows as a dependent variable. Panel B computes the cutoffs of the ESG reporting scores using the restricted sample of modules. Panel C adds fund fixed effects instead of fund-family fixed effects. Panel D controls for the performance "stars". Panel E controls for ESG funds. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

Panel A: Normalized flows

Dep. variable:	Normalized flows					
	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Reporting score$_{t-1} \geq A$	1.99***	1.57***	2.84***	1.98**	1.85***	1.47***
	(3.94)	(3.43)	(3.08)	(2.29)	(3.42)	(2.98)
Reporting score$_{t-1} \in [B; A)$	1.12**	0.52	1.66*	0.99	0.98*	0.36
	(2.37)	(1.21)	(1.98)	(1.26)	(1.92)	(0.76)
Reporting score$_{t-1} < B$	1.11**	0.67	1.62	1.18	1.00*	0.57
	(2.09)	(1.39)	(1.40)	(1.07)	(1.92)	(1.22)
Observations	1,473,631	1,473,631	283,977	283,977	1,189,269	1,189,269
R-squared	0.08	0.11	0.07	0.11	0.08	0.12
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	No	Yes	No
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

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Panel B: Subset of R&A modules

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$^{restr.}_{t-1} \geq A$	0.15**	0.12**	0.39***	0.32***	0.10	0.07
	(2.49)	(2.06)	(3.37)	(2.85)	(1.50)	(1.15)
Reporting score$^{restr.}_{t-1} \in [B; A)$	0.08	0.03	0.09	0.05	0.09	0.03
	(1.32)	(0.50)	(0.73)	(0.46)	(1.39)	(0.48)
Reporting score$^{restr.}_{t-1} < B$	-0.02	-0.05	0.12	-0.01	-0.04	-0.06
	(-0.17)	(-0.64)	(0.46)	(-0.04)	(-0.49)	(-0.84)
Observations	1,473,631	1,473,631	283,977	283,977	1,189,269	1,189,269
R-squared	0.03	0.05	0.04	0.07	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Panel C: Fund FEs

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.21***	0.19***	0.53***	0.45***	0.17**	0.15**
	(3.26)	(3.11)	(4.08)	(3.77)	(2.46)	(2.33)
Reporting score$_{t-1} \in [B; A)$	0.11*	0.05	0.30**	0.25**	0.08	0.03
	(1.74)	(0.95)	(2.44)	(2.21)	(1.27)	(0.48)
Reporting score$_{t-1} < B$	0.13*	0.10	0.32*	0.28	0.10	0.08
	(1.73)	(1.51)	(1.73)	(1.62)	(1.43)	(1.19)
Observations	1,473,279	1,473,279	283,864	283,864	1,188,916	1,188,916
R-squared	0.10	0.11	0.10	0.13	0.10	0.12
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

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Panel D: Controlling for performance Stars

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.15**	0.13**	0.36***	0.30***	0.10	0.09
	(2.41)	(2.15)	(3.40)	(2.85)	(1.56)	(1.37)
Reporting score$_{t-1} \in [B; A)$	0.05	-0.01	0.14	0.09	0.03	-0.03
	(0.78)	(-0.11)	(1.30)	(0.84)	(0.42)	(-0.48)
Reporting score$_{t-1} < B$	0.06	0.03	0.11	0.08	0.05	0.02
	(0.83)	(0.46)	(0.68)	(0.50)	(0.70)	(0.34)
Stars$_{t-1}$	0.40***	0.38***	0.57***	0.54***	0.36***	0.35***
	(23.92)	(23.64)	(14.11)	(14.08)	(23.24)	(23.13)
Observations	1,488,055	1,488,055	286,543	286,543	1,201,138	1,201,138
R-squared	0.04	0.05	0.04	0.07	0.04	0.06
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Panel E: Controlling for ESG Funds

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A$	0.17***	0.14**	0.39***	0.31***	0.12*	0.10
	(2.69)	(2.37)	(3.44)	(2.84)	(1.81)	(1.56)
Reporting score$_{t-1} \in [B; A)$	0.06	0.01	0.18	0.11	0.04	-0.02
	(1.08)	(0.13)	(1.60)	(1.04)	(0.61)	(-0.32)
Reporting score$_{t-1} < B$	0.08	0.05	0.18	0.14	0.07	0.04
	(1.15)	(0.75)	(1.02)	(0.83)	(0.93)	(0.52)
ESG Fund	0.28***	0.30***	0.20**	0.19*	0.30***	0.31***
	(5.55)	(5.78)	(2.01)	(1.98)	(5.55)	(5.90)
Observations	1,473,631	1,473,631	283,977	283,977	1,189,269	1,189,269
R-squared	0.03	0.05	0.04	0.07	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Table IA10: Robustness for ESG reporting scores and Morningstar's ESG globes
This table shows regressions of flows on an indicator variable for funds with a high ESG reporting score of A or greater and its interactions with indicators for the number of Morningstar ESG globes. The ESG reporting scores and globes indicators are set to zero for months when no scores are available, or the fund is not a PRI signatory. The reference category is missing globes. All regressions control for lagged fund characteristics, and fund-family fixed effects. The odd columns also include month fixed effects. The even ones control for category-by-month fixed effects instead. The sample includes all funds from countries with at least one PRI signatory and spans from 2011 to 2019. Singleton observations are dropped. t-statistics, based on robust standard errors clustered at the fund-family and month level, are reported in parentheses. ***, **, and * indicate that the parameter estimate is significantly different from zero at the 1%, 5%, and 10% level, respectively. All variables are defined as in Internet Appendix Table IA1.

	All funds		Institutional		Retail	
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. variable:	Flows	Flows	Flows	Flows	Flows	Flows
Reporting score$_{t-1} \geq A \times$ 5 Globes	0.16*	0.21**	0.42**	0.42**	0.11	0.17
	(1.68)	(2.21)	(2.37)	(2.31)	(1.00)	(1.63)
Reporting score$_{t-1} \geq A \times$ 4 Globes	0.01	0.04	0.20	0.22*	-0.05	-0.01
	(0.13)	(0.60)	(1.48)	(1.73)	(-0.65)	(-0.22)
Reporting score$_{t-1} \geq A \times$ 3 Globes	-0.04	-0.01	-0.01	0.02	-0.05	-0.02
	(-0.63)	(-0.19)	(-0.05)	(0.18)	(-0.82)	(-0.34)
Reporting score$_{t-1} \geq A \times$ 2 Globes	-0.17***	-0.12**	-0.08	-0.01	-0.19***	-0.15**
	(-2.66)	(-2.02)	(-0.61)	(-0.09)	(-2.70)	(-2.21)
Reporting score$_{t-1} \geq A \times$ 1 Globe	-0.09	-0.08	-0.04	0.01	-0.09	-0.09
	(-0.86)	(-0.78)	(-0.20)	(0.04)	(-0.78)	(-0.77)
5 Globes	-0.09	-0.04	-0.13	0.03	-0.08	-0.08
	(-1.40)	(-0.80)	(-1.03)	(0.20)	(-1.29)	(-1.41)
4 Globes	-0.11**	-0.06	-0.29***	-0.10	-0.06	-0.05
	(-2.10)	(-1.37)	(-3.57)	(-1.17)	(-1.14)	(-1.17)
3 Globes	-0.18***	-0.12***	-0.35***	-0.15*	-0.13***	-0.12***
	(-4.10)	(-3.53)	(-5.30)	(-1.93)	(-2.68)	(-3.25)
2 Globes	-0.15***	-0.10***	-0.32***	-0.12	-0.10*	-0.10**
	(-2.96)	(-2.63)	(-3.83)	(-1.34)	(-1.80)	(-2.41)
1 Globe	-0.24***	-0.18***	-0.39***	-0.18	-0.19***	-0.17***
	(-3.82)	(-3.03)	(-3.01)	(-1.43)	(-2.93)	(-2.83)
Reporting score$_{t-1} \geq A$	0.10*	0.07	0.21**	0.17*	0.07	0.03
	(1.76)	(1.23)	(2.25)	(1.89)	(1.10)	(0.56)
Reporting score$_{t-1} \in [B; A)$	0.02	-0.02	0.04	0.02	0.01	-0.04
	(0.47)	(-0.53)	(0.44)	(0.20)	(0.22)	(-0.82)
Reporting score$_{t-1} < B$	0.01	-0.01	0.03	0.05	-0.00	-0.02
	(0.11)	(-0.11)	(0.27)	(0.39)	(-0.08)	(-0.35)
Observations	1,906,244	1,865,535	373,919	367,838	1,532,309	1,497,229
R-squared	0.03	0.05	0.04	0.06	0.03	0.05
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fund-Family FE	Yes	Yes	Yes	Yes	Yes	Yes
Category-Month FE	No	Yes	No	Yes	No	Yes
Month FE	Yes	No	Yes	No	Yes	No

Table IA11: List of high- and low-asset-owner-scrutiny countries

This table shows the list of high and low asset-owner-scrutiny countries. High-scrutiny countries are defined based on the fraction of total signatory assets under management from asset owners. PRI provided the classification of signatories as asset owners (AO) or asset managers.

High AO scrutiny			Low AO scrutiny		
Country	N	%	Country	N	%
Australia	44,075	3.33	Austria	30,528	3.26
Belgium	36,344	2.74	Bermuda	31,464	3.36
Brazil	129,890	9.80	Cayman Islands	267	0.03
Canada	117,430	8.86	Egypt	16	0.00
Denmark	43,024	3.25	Estonia	172	0.02
Finland	20,255	1.53	Greece	1,822	0.19
France	260,775	19.68	Guernsey	219	0.02
Germany	118,083	8.91	Ireland	1,750	0.19
Hong Kong SAR	2,359	0.18	Saudi Arabia	808	0.09
Iceland	931	0.07	Singapore	8,402	0.90
Italy	39,529	2.98	Switzerland	150,502	16.06
Japan	297,692	22.47	United Kingdom	167,364	17.86
Luxembourg	22,968	1.73	United States	543,571	58.02
Netherlands	42,007	3.17			
New Zealand	7,425	0.56			
Norway	21,334	1.61			
South Africa	26,118	1.97			
Spain	19,477	1.47			
Sweden	75,337	5.69			
Total	1,325,053	100.00	Total	936,885	100.00