Do Responsible Investors Invest Responsibly?

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February 2022

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Abstract

We study if institutional investors that join the Principles for Responsible Investment (PRI), the largest responsible investment initiative, exhibit better portfolio-level environmental, social and governance (ESG) scores. Signatory institutions have better ESG scores but this holds only outside of the United States. In contrast, US-domiciled PRI signatories exhibit at best similar, if not worse ESG scores, particularly those signatories that have underperformed recently, are retail-client facing and that have joined the initiative recently. We also find that clients' flows do not discriminate US PRI signatories according to their level of ESG incorporation.

~~Keywords: ESG, SRI, PRI, socially responsible investing, sustainability, institutional inves-~~ tors, greenwashing
JEL Classifications: G15, G23, G30, M14

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ABSTRACT

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1. Introduction

There is growing interest globally in responsible investing, whereby institutional investors incorporate environmental, social and governance (ESG) issues into their investment processes. The leading initiative, the Principles for Responsible Investment (PRI), which was founded in 2006 by some of the world's largest institutional investors with support from the United Nations, counted over 3,000 signatories with combined assets under management (AUM) of over US$ 100 trillion at the end of 2020. This raises the questions of how responsible investment principles are implemented by institutional investors and how these translate into different ESG portfolio outcomes. It is important to determine if institutions who commit to invest responsibly actually do so in practice and, ultimately, if their client flows are able to discriminate between truly committed responsible investors and those that fail to incorporate ESG in their portfolios. After all, the goal of responsible investing—to direct capital towards companies that make the world more sustainable—can only be achieved if investors live up to their commitments.[1]

In this paper, we examine if institutional investors' public commitments to responsible investing and higher reported levels of ESG incorporation actually translate into more sustainable portfolio allocations. For this purpose, we combine filings by institutional investors on their equity holdings around the world with stock-level ESG ratings from three leading ESG data providers to calculate value-weighted ESG scores at the portfolio level. We call these *Portfolio ESG scores* and use them to quantify the extent to which an institutional investor is pursuing ESG investment objectives.

We begin by documenting which types of institutional investors join the PRI and find that the largest asset managers and those located outside of the United States are more likely to become part of the initiative. Next, we turn to our main research question and examine if PRI signatories have better portfolio ESG scores than those who do not join the initiative and thus do not publicly commit to responsible investing. Our analysis shows that, on average, institutional investors who sign the PRI have better portfolio ESG scores and also improve these scores after joining the PRI. We complement our

[1] Although technically we prefer the term responsible investing in the context of our paper, we use the terms responsible, sustainable and ESG investing interchangeably.

analysis of the scores with other portfolio-level ESG measures, such as an investor's portfolio allocation to sin and fossil fuel related stocks.

Next, we examine the extent to which PRI signatory institutions really invest responsibly varies around the world. For instance, a survey by Amel-Zadeh and Serafeim (2018) suggests that ethical motives play a larger role in Europe where responsible investing might be more intrinsically motivated. In other geographic regions, institutional investors might be more commercially driven, potentially to attract the growing ESG-related fund flows (i.e., to increase their AUM and the associated management fees). This is particularly relevant in the U.S., which has witnessed the largest increase in PRI signatories recently and has perhaps the most competitive asset management industry (with some of the lowest fund fees, as shown by Cremers, Ferreira, Matos and Starks, 2016). Some US institutional investors may respond to the recent popularity of ESG by signing the PRI but failing to incorporate ESG factors into portfolio management. Regulatory approaches to responsible investment also vary around the world. While the EU launched an action plan for financing sustainable growth, there is regulatory uncertainty in the U.S. over whether institutions' fiduciary duties are consistent with the incorporation of ESG considerations in the investment process. In our analysis, we find that only PRI signatories located outside the U.S. have better portfolio-level ESG scores than non-PRI investors. In contrast, US PRI signatories do not exhibit better portfolio ESG scores than their uncommitted peers. In addition, there is no evidence that US PRI signatories improve their portfolio-level ESG scores after signing the principles, which raises concerns about greenwashing (i.e. overstating an institution's commitment to sustainable investing) among this subset of investors.

Signing up to the PRI is voluntary and institutions can resort to a menu of possible actions for incorporating ESG issues in their investment analysis and selection process. We use detailed survey data from the annual PRI reporting framework, which is a key PRI tool to enable signatory transparency on their efforts. These reports are often used by end investors and other stakeholders to assess an institution's ESG credentials. Instead of treating PRI signatories as a homogenous group of responsible investors, this survey data allows us to classify institutions into three groups: (1) those that report to fully apply ESG incorporation strategies to 100% of their equity AUM; (2) those that report to partially do so; and (3) those that do not report any form of ESG incorporation. Our analysis shows that, outside of the U.S., PRI signatories that report that they apply ESG incorporation strategies fully or at least partially do exhibit significantly better portfolio ESG scores than institutions that do not sign the PRI. These results validate prior tests using only the PRI signatory status as the main explanatory variable. In the U.S., however, we find no significantly different portfolio ESG scores, not even for signatories that report to fully apply ESG incorporation. More concerning perhaps, we find that US-domiciled PRI signatories that do not report any form of ESG incorporation (i.e., the third group above) have significantly *worse* ESG scores than non-PRI institutions.

In tests that further leverage the survey data, we aim to rule out the possibility that US PRI signatories who do not incorporate ESG considerations might invest in low-ESG stocks and instead use shareholder engagement to improve the ESG performance of their investee firms over time. We conclude that this is unlikely to be the case. First, the PRI survey data reveals that US investors report less ESG shareholder engagement than their peers from other geographical regions. Secondly, we also find evidence that those US PRI institutions who report to engage either individually or collectively with their portfolios firms do not exhibit better ESG portfolio scores in subsequent years. While we do not regard our paper as contributing directly to the ESG engagement literature (see for instance, Dimson et al. 2015, 2021), these tests help rule out the alternative explanation that US PRI signatories rely on activism to pursue responsible investing.

Our analysis identifies a group of US-domiciled institutions who join the PRI initiative but do not follow through on their commitments. These US investors either report that they do not incorporate ESG issues or do not report on their ESG incorporation efforts at all. Hence, these US institutions are fundamentally uncompliant with Principle 1 of the PRI ("We will incorporate ESG issues into investment analysis and decision-making processes"). They also have significantly *worse* portfolio ESG scores than non-PRI institutions, which is also inconsistent with the principles. We study what characterizes this subgroup of US PRI signatories who report no ESG incorporation and exhibit worse portfolio ESG scores and find that: (1) these institutions have recently underperformed; (2) cater to retail clients; (3) have a history of being involved in negative ESG incidents in their own operations; and (4) are more likely to have joined the PRI recently. These cross-sectional results indicate that the subgroup of US PRI signatories who fail to implement ESG might be greenwashing because of a misalignment of interest between the fund managers and their end investors or other stakeholders.

In the final part of the paper, we study if the end investors can see through the PRI label and are able to distinguish between truly committed responsible institutions and those likely to be greenwashing. In regressions that relate investor flows to PRI signatory status, we find that US PRI signatories experience higher flows than their non-signing peers, while this is not the case in the rest of the world. Splitting PRI signatory investors by our survey-based measure of ESG incorporation efforts, we find that in the U.S., signatories with the lowest ESG implementation receive the highest flows. We also find that, outside of the U.S., PRI investors with better reported ESG implementation experience lower flows than non-signatories. This latter finding might be explained by the relative maturity of the responsible investment market outside the U.S. For example, Global Sustainable Investment Alliance (GSIA) surveys suggest that the share of institutionally managed ESG assets has not experienced market share growth in Europe in recent years (GSIA, 2018 and GSIA, 2020). One factor might also be the higher regulatory scrutiny on ESG labels given the recent EU efforts to develop taxonomy and disclosure requirements as part of the European Sustainable Finance Action Plan.

Our paper contributes to the literature on responsible investment by institutional investors. Using survey-portfolio matched data, we show that there is a disconnect between what US institutional investors report in terms of ESG incorporation and their actual portfolio ESG scores. In contrast to prior studies examining responsible investment by institutional investors, which have relied either on anonymized investor surveys (e.g., Amel-Zadeh and Serafeim, 2018; Krueger, Sautner and Starks, 2020) or archival data of portfolio holdings (e.g., Starks, Venkat and Zhu, 2018; Dyck, Lins, Roth and Wagner, 2019; Gibson Brandon, Krueger and Mitali, 2021), we combine both survey and archival data. In particular, we extend prior research in Dyck, Lins, Roth and Wagner (2019), who find that E&S scores of firms with higher ownership by PRI signatories tends to be higher, by exploring important heterogeneities in ESG incorporation among PRI signatories. We provide novel evidence that, even when we consider the reported level of ESG incorporation, US signatories who report to fully incorporate ESG strategies actually do not have better portfolio ESG scores. Moreover, we identify a group of underperforming US signatories that exhibit *worse* portfolio ESG performance than non-PRI institutions, raising concerns about greenwashing.[2]

In related studies that are narrower in scope, Kim and Yoon (2021) study only US mutual funds and also find that those that sign the PRI fail to have better ESG scores. Liang, Sun and Teo (2021) find some greenwashing among the relatively small subset of hedge fund PRI signatories. Dimson, Karakas and Li (2021) focus instead on shareholder engagement in their study of the PRI collaboration platform. Our paper examines the aggregated and global equity portfolios of all types of institutional investors (investment managers as well as asset owners), based in different geographic regions and using different types of ESG strategies. Our use of the survey-portfolio matched data allows us to measure the reported level of ESG incorporation among PRI signatories and compare it directly to portfolio outcomes. We uncover economically significant differences in ESG incorporation between different categories of US and non-US investors.

Our paper also contributes to the literature examining fund flow reactions to sustainability ratings and ESG labels (see Hartzmark and Sussman, 2019; Ceccarelli, Ramelli and Wagner, 2021). By providing evidence that investors are unable to target flows based on the extent of actual ESG incorporation by institutions, our findings call into question whether simple labels such as the PRI membership provide meaningful signals to clients who would like to identify portfolio managers that invest responsibly.

2. Data on Responsible Investing

2.1. The Growth of the Principles for Responsible Investment (PRI)

The Principles for Responsible Investment (or PRI) was launched in 2006 with support from the United Nations (UN), which invited large institutional investors, including the California Public Employees' Retirement System (CalPERS), Hermes Pensions Management and the Norwegian Government Pension

[2] The U.S. Securities and Exchange Commission (SEC) started to scrutinize how strictly ESG funds adhere to responsible investment practices (Wall Street Journal, 2019) and recently announced the creation of a Climate and ESG Task Force in the Division of Enforcement to proactively identify ESG-related misconduct (SEC, 2021).

Fund. The objective of PRI is to harness the financial weight of institutional investors to address sustainable development goals (SDGs). The PRI is a nonprofit institution and its funding comes from annual membership fees from its signatories. By 2020, the PRI network had grown to be the largest investor initiative worldwide, with over 3,000 signatories and over US$ 100 trillion of AUM. Signatories include asset owners (e.g., pension funds, sovereign wealth funds, foundations), investment managers (e.g. fund companies and advisers) and service providers. Since service providers do not manage assets, these are excluded from the analysis in this paper.

The six PRI principles are as follows:

- #1: We will incorporate ESG issues into investment analysis and decision-making processes.
- #2: We will be active owners and incorporate ESG issues into our ownership policies and practices.
- #3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- #4: We will promote acceptance and implementation of the Principles within the investment industry.
- #5: We will work together to enhance our effectiveness in implementing the Principles.
- #6: We will each report on our activities and progress towards implementing the Principles.

By signing the principles, investors publicly commit to their adoption. The signatory status comes with two mandatory requirements. First, all signatories need to pay an annual membership fee. Second, PRI signatory investors commit to publicly report on their responsible investment considerations and decision-making on a yearly basis (principle #6 above). PRI has started delisting signatories for not meeting the minimum requirements but there are other forms of enforcement (PRI, 2020). In particular, PRI reports are increasingly posted voluntarily on investor websites and also provided by investment managers as signals of their ESG credentials when they compete for requests for proposals on investment mandates (as well as in subsequent reporting).

We match the PRI signatory data to global institutional equity holdings obtained from FactSet Ownership – see Ferreira and Matos (2008) for details on this data. The sample period starts in 2003 (three years before the PRI was formed) and ends in 2017, covering the set of institutions domiciled in countries that are part of the MSCI All Country World Index. We use portfolio data at the end of each calendar year. Our final sample consists of 684 PRI signatories that completed the PRI survey modules related to listed equities and whose disclosed equity holdings are available on FactSet Ownership. Table

IA1 of the Internet Appendix describes in detail how we match PRI signatory data to the institutional equity holdings data.

Figure 1 shows the growth of the PRI initiative both in terms of the number of PRI signatory institutions (Panel A) and the increasing importance of PRI signatory holdings in stock markets worldwide (Panel B). PRI signatories' equity holdings grew from US$ 0.7 trillion in 2006 to US$ 18 trillion by 2017. This means that, at the end of the sample, PRI institutions represented more than half of the total institutional investor equity holdings of US$ 32 trillion and illustrates the importance of institutional capital that purports to follow ESG principles.[3] Panels C and D of Figure 1 display the PRI expansion for US and non-US investors separately. At the end of 2017, the PRI AUM coverage was still substantially larger outside of the United States.

Panel A, Table 1 shows additional statistics on PRI signatories. While early signatories tended to be based in Europe, the percentage of North American signatories gradually rose and the share of PRI signatories from Asia-Pacific and remaining countries in the MSCI All Country World Index was stable at around 20%. Also of note is that the percentage of investment managers increased over time, while asset owners accounted for a larger proportion of the early cohort of signatories.[4] Finally, the number of small AUM signatories increased over time, which might reflect the fact that being part of PRI became a de facto requirement to obtain investment mandates from many clients. For reference, we provide a list of the largest institutional investors by portfolio AUM for each region and their PRI signing date in Table IA3 of the Internet Appendix. By the end of 2017, all of the top-10 global institutional investors had joined the PRI (including Vanguard, BlackRock, NBIM, UBS and Nomura).

Panel B of Table 1 complements the univariate evidence on the characteristics of PRI versus non-PRI signatories with estimated Probit regressions. Column (1) shows that the probability of joining

[3] These figures are calculated based on equity holdings for which ESG scores are available. The $32 trillion in institutional holdings represents over 40% of the world market capitalization and it is similar to the level of institutional ownership estimated in the OECD (2019) study on the ownership structure of the world's listed companies.
[4] Note that for an asset owner to be covered by FactSet Ownership, the institution needs to have considerable direct equity holdings. Asset owners that outsource the management of their equity investments do not show up in our sample as a separate institution as their assets will be part of their respective investment managers' portfolio filings.

the PRI is higher when an institution is an asset owner, is larger in terms of total equity holdings and is domiciled outside of North America. Column (2) looks at data from the world values survey obtained from Dyck et al. (2019) providing evidence that institutions domiciled in countries with stronger E&S values are also more likely to sign the PRI.

2.2. PRI Survey Data

Our research also makes use of the novel survey from the PRI reporting framework which is key to enable signatory transparency. These reports are showcased by many signatory institutions in their corporate sustainability websites and commonly submitted in response to request for proposals for investment mandates to demonstrate an institution's ESG efforts to their end investors.[5] This data allows us to distinguish PRI signatories according to their reported ESG incorporation strategies. The survey is non-anonymous and we are able to observe investor names and responses to a questionnaire for each signatory and reporting year.[6] While the PRI was founded in 2006, signatory reporting data only starts in 2014 and extends to 2018. Overall, the five years of PRI reports available to us contain 5,326 signatory-year observations by 1,549 unique PRI signatory identifiers.

Figure 2 shows the reported ESG incorporation strategies of PRI signatories.[7] It provides the average percentage of signatories' AUM that is covered by screening, thematic or integration strategies, following a taxonomy of ESG strategies commonly used in academia and industry (e.g., Amel-Zadeh and Serafeim, 2018; CFA Institute, 2015; and GSIA, 2018). In Panel A, we find that PRI signatories apply, on average, ESG integration strategies to 66% of their equity AUM. Integration strategies consist

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[5] The PRI reports are used frequently by institutions around the world to communicate their responsible investment activities. For example, Blackrock features it prominently as part of their sustainability credentials – see awards https://www.blackrock.com/corporate/literature/publication/blk-awards-and-recognition-web.pdf and transparency reports https://www.blackrock.com/corporate/sustainability/pri-report. In addition, anyone can access freely the reports on the PRI website (ex: for Blackrock https://www.unpri.org/signatory-directory/blackrock/948.article).

[6] PRI has put processes in place to ensure the verifiability of the reports. A central element of this is to make a majority of the responses accessible to the public. For example, these publicly available reports allow asset owners to search and screen for potential investment managers, providing a strong incentive to report truthfully. In addition, the PRI compares the reports within its peer groups and runs validation checks to detect inconsistencies. Third-party audit and/or assurance of the PRI reports are not mandatory but encouraged.

[7] This is obtained from LEI 01.1 question of the PRI survey. See Figure IA2 in the Internet Appendix for more details on the survey question. The approaches (screening, thematic and integration) are not mutually exclusive and many institutions report implementing multiple ESG strategies simultaneously.

of inclusion of ESG factors into financial analysis by institutional investors. Signatories further apply screening strategies to 50% of their equity AUM. Screening consists of either including or excluding stocks based on their ESG performance relative to industry peers or other criteria such as international norms and standards. Finally, only 11% of PRI's equity assets are managed according to thematic strategies that target investments in areas specifically related to sustainability (e.g., clean energy). These strategies are not mutually exclusive: most PRI signatories' equity AUM are covered by multiple strategies (e.g., integration plus screening). Panel B illustrates that the reported usage of the three ESG incorporation strategies increases over the sample years.

Given that the defining principle #1 of PRI is the commitment by signatories to incorporate ESG issues into their investment decisions (see Section 2.1 above), we study the heterogeneity among PRI signatories in achieving this stated goal. We focus our analysis on the share of equity assets to which institutions report that they apply any form of ESG incorporation strategy as a proxy for their level of commitment to responsible investing. We do not attempt to separate the individual ESG strategies as they are typically combined in practice. We classify signatories into three different groups: (1) *PRI: Full ESG incorporation* representing signatories that report applying any form of ESG incorporation strategy to 100% of their equity AUM; (2) *PRI: Partial ESG incorporation* for those that report applying ESG strategies to less than 100% of their equity holdings; and (3) *PRI: No reported ESG incorporation* for the subset that do not apply ESG strategies to their equities or do not report these figures. Panels C and D of Figure 2 illustrates that investors who state to incorporate ESG issues fully use all of the three ESG strategies to a higher degree both in the U.S. and in the rest of the World than investors who report partial or no integration. Table 2 shows other survey indicators (engagement with portfolio companies plus organizational resources dedicated to ESG) which confirm that our classification of PRI signatories is a good proxy for an institutions' overall ESG investment effort. We discuss these and other descriptive statistics regarding the survey data in Appendix A.

3. How Do Responsible Investing Commitments Map to Portfolio ESG Outcomes?

3.1. Portfolio ESG Scores

One challenge in examining how the adherence to the PRI principles map into ESG portfolio outcomes is the lack of a universally accepted definition of sustainability. Prior literature has shown that ESG ratings of companies can diverge from one another (Berg, Koelbel and Rigobon, 2021; Gibson Brandon, Krueger and Schmidt, 2021). We overcome this challenge by calculating a portfolio-level sustainability score for each institutional investor based on the market consensus of three leading ESG rating providers: Thomson Reuters' ASSET4 (now Refinitiv ESG); MSCI IVA; and Sustainalytics (now part of Morningstar). We expect average ESG ratings to provide a better measure of corporate sustainability, similar to the notion that the consensus of analyst forecasts is a better predictor of future firm earnings than a forecast by an individual analyst. Taking the consensus of multiple ESG scores should also mitigate biases (e.g., selective company disclosures, methodological differences across rating agencies). Another reason for using multiple ESG scores is that different investors might use different data to implement their strategies, and by using the consensus we are more likely to capture this. Though we use ESG consensus ratings in our main tests, we corroborate our results using individual ESG ratings.

We calculate the portfolio-level sustainability score for each investor in two steps. First, we calculate the consensus as the equal-weighted average of the standardized scores from the three ESG data providers for each individual company:

$$ESG\ Score_{it} = \frac{1_{A4,it} \times z_t(ASSET4_{it}) + 1_{MSCI,it} \times z_t(MSCI_{it}) + 1_{SUST,it} \times z_t(SUST_{it})}{1_{ASSET4,it} + 1_{MSCI,it} + 1_{SUST,it}}$$

We obtain these scores on a yearly basis between 2003 and 2017 by keeping the last available ESG scores in each firm-calendar year combination, assuming that it reflects the most up-to-date information on the company for that year. Given the different rating scales of each data provider, we Z-score normalize the ESG scores in each year to have a mean of zero and a standard deviation of one; we denote these as $z_t(Score)$. Due to the growing data coverage over our sample period, we take the average of the ESG scores that are available if there is no full coverage by all rating providers for a given stock in a given year, reflected in the formula above by multiplying the Z-scored scores with the respective indicator variables $1_{k,it}$.

Second, we follow Gibson Brandon, Krueger, Mitali (2021) and compute the portfolio-level sustainability score using the weights of the individual stock holdings in the investors' portfolios:

$$Portfolio\ ESG\ score_{j,t} = \sum_{i=1}^{N_{j,t}} w_{i,j,t} \times ESG\ Score_{i,t}$$

where *Portfolio ESG score* denotes one of the following sustainability scores: *Total ESG score, Environmental score, Social score*, or *Governance score*. The variable $w_{i,j,t}$ denotes the value-weight of stock *i* in investor *j*'s portfolio at the end of year *t*. $ESG\ Score_{i,t}$ is the normalized sustainability score of stock *i* at the end of year *t* as defined above. $N_{j,t}$ is the total number of stocks investor *j* holds at the end of year *t* for which stock-level scores are available. The *Portfolio ESG score* variable quantifies the portfolio-level sustainability of institutional investor *j* at the end of year *t*. Note that the measure is scaled in a way that higher values correspond to better adherence to portfolio-level sustainability principles.

This aggregate measure of portfolio sustainability is our main variable to capture the effect of the actions taken by institutional investors to incorporate ESG considerations. It is reasonable to assume that more committed institutions will, on average, have better portfolio scores. This is similar in spirit to mutual fund ESG ratings (for instance, the Morningstar Globe ratings) that rank the sustainability of a fund by the average ESG profile of the securities held in their portfolios (used in Hartzmark and Sussman, 2019 among others). However, in our subsequent analysis, we also conduct robustness checks using other ESG portfolio outcomes, such as the percentage of equities allocated to stocks with the highest or lowest ESG ratings or, alternatively, the portfolio allocation to stocks operating in the sin and fossil fuel industries that are considered more controversial from an ESG perspective (Hong and Kacperczyk, 2009).

3.2. Do PRI Signatories Exhibit Better Portfolio ESG Scores?

Table 3 estimates pooled OLS regressions, in which we compare the portfolio-level ESG score of PRI signatories to non-PRI signatories controlling for other portfolio attributes (e.g., AUM, turnover, number of stocks, etc.) as well as other institution characteristics (region, type) and time fixed effects. The main variable of interest is the *PRI dummy*, which takes the value of one if an investor is a PRI signatory in a given year and zero otherwise. Standard errors are double clustered at the institution- and year-level.

In Panel A of Table 3, we find that PRI signatories have significantly better portfolio-level *Total ESG scores*, *Social scores* and *Governance scores* but not better *Environmental scores*.[8] A *PRI dummy* coefficient of 0.06 implies that the Portfolio ESG Score of PRI signatories is about 120 percent higher than the score of the average investor ((=0.06/0.05*100). As stated above, these results control for several portfolio characteristics.

We further examine whether institutions improve their portfolio-level ESG scores after becoming PRI signatories. Panel A of Table 4 runs difference-in-difference regressions, in which we match each PRI signatory to one non-PRI institution based on the logarithm of AUM, region and institution type (using a nearest-neighbor algorithm without replacement). We estimate the PRI signing effect on portfolio-level ESG scores measured in the years [−3; +3] around the signature dates. Again, these regressions include year, region and type fixed effects as well as controls for portfolio characteristics. Panel A of Table 4 shows that, on average, PRI signatories significantly improve their *Total ESG* and *Social scores* in the years after joining the PRI (compared to the non-PRI control institutions). Environmental and governance scores (columns 2 and 4) are unchanged.

We next investigate whether there are differences in the portfolio ESG outcomes between institutional investors based in the U.S. and other regions given different societal expectations and regulatory environments. This sub-sample analysis for the U.S. is motivated by the U.S. being the largest and most competitive institutional asset management market. US signatories also tend to be late PRI joiners who might perceive the PRI label as an emerging commercial trend they need to adopt in order to grow their business, and not purely out of strong ESG convictions. Furthermore, there is an ongoing

[8] In Figure IA1 of the Internet Appendix, we plot the distribution of portfolio-level ESG scores between PRI and non-PRI institutions. The univariate graphs show two interesting patterns. First, from the density graph it seems as if PRI institutions have slightly higher mean and median portfolio-level ESG scores. Second, the distribution of portfolio-level scores of non-PRI institutions has a fatter left tail, suggesting that in the non-PRI population, there are more institutions that have bad portfolio-level ESG scores.

regulatory debate in the U.S. on whether ESG concerns conflict with the fiduciary duties of institutional investors.[9] This question is more settled in countries such as those in the EU where ESG investing has become fairly mainstream over the last decades.

We test these cross-country differences by comparing the ESG scores of PRI signatories to non-PRI institutions for the subsample of US and non-US institutional investors separately. In Panel B of Table 3 we find that US-based PRI signatories tend to exhibit at best similar, if not, worse ESG scores than US non-signatory institutions. In line with this, in Panel B of Table 4, we also find no evidence that US-based institutions improve their portfolio ESG scores after signing the PRI relative to non-PRI institutions. In contrast, Panels C of Tables 3 and 4 show that, outside the U.S., PRI signatories not only have significantly better portfolio-level ESG scores than non-PRI institutions, but they also improve these scores after joining the initiative. We obtain qualitatively similar results in full sample regressions when we use interactions between the PRI dummy and a variable indicating if the institution is domiciled in the U.S.

We conduct several robustness checks in terms of ESG scores, the universe of stocks, and the set of institutional investors under consideration.[10] First, to address concerns about methodological differences in ESG ratings, we test and find similar results in regressions using each of the ESG scores from the three ESG rating providers separately instead of the average ESG scores. Second, we find consistent results when we calculate the portfolio-level ESG scores of US investors based on the subset of stock holdings of US listed companies, alleviating concerns that the results might be due to home bias in US investor holdings and lower ESG performance of US stocks compared to, for example, European stocks. Third, the results are also robust to excluding the Big 3 (Blackrock, Vanguard and State Street), which are US-based and could be different given their larger AUM size and indexed investment styles.

[9] For instance, the U.S. Department of Labor (DOL), which regulates private company retirement plans, has provided conflicting guidance on how to apply the Employee Retirement Income Security Act of 1974 (ERISA) fiduciary standards to ESG depending on the political party in power (see, Reuters, 2021). In addition, the SEC chair had also emphasized that investment advisers cannot put any interests, including ESG factors, ahead of the financial interests of their clients (Clayton, 2018) but this has also changed again recently with the new SEC chair appointment (SEC, 2021).
[10] In the interest of brevity, we are not tabulating these robustness checks, but the results are available upon request.

We conclude that there is evidence that PRI signatory institutions have better portfolio-level ESG scores but only when they are domiciled *outside* the U.S. which is consistent with non-US institutions adhering to Principle 1 of the PRI more diligently. In the U.S., however, our results suggest that institutions may be following the ESG trend without a thorough adoption of the sustainability criteria into their investment decisions.

3.3. Do Portfolio ESG Scores Depend on an Institution's Level of Reported ESG Incorporation?

The above analysis shows important regional differences between US and Non-US PRI signatories. Given that US institutional investors joined the PRI in more recent years, these institutions could be lagging in terms of implementing their responsible investing principles. We now use the annual PRI survey data to explore the reported level of ESG incorporation and test if such responsible investing efforts effectively translate into detectable differences in portfolio ESG scores. The survey is a key PRI mechanism to enable signatory transparency on their efforts, which is often used by end investors and other stakeholders to assess an institution's ESG credentials.

In Table 5 we regress portfolio ESG scores on dummy variables indicating the three sub-groups of PRI signatories by level of reported ESG incorporation (as described in Section 2.2). Panel A shows that PRI signatories that report full incorporation have significantly better portfolio-level ESG scores than non-PRI institutions but this is not the case for PRI signatories that state to do so only partially or not at all. In Panels B and C of Table 5, we again split the sample into US and Non-US based investors. We find that *PRI: Full ESG incorporation* signatories (and to some extent also those in the *PRI: Partial ESG incorporation* group) have better portfolio scores only when the signatories are based outside the U.S. Somewhat concerning, US PRI signatories that report *No ESG incorporation* have significantly *worse* scores than US institutions that do not sign the PRI, a result that is primarily driven by worse *Environmental scores*. The large negative estimate on *PRI: No reported ESG incorporation* in the US sample suggests that these signatories do not follow through on their public ESG commitments.[11]

[11] In Table IA5 of the Internet Appendix we further break-down *PRI: Full ESG incorporation* signatories based on their reported usage of screening and integration strategies. We observe that no US-based PRI signatories (not even those that report that they apply 100% screening and 100% integration) have significantly better portfolio

One concern with our baseline tests is that perhaps the portfolio ESG score measure might not capture more specialized ESG strategies employed by PRI signatories. For example, some longstanding strategies used by US socially responsible funds involve excluding stocks with worse ESG characteristics or filtering out certain industries for ethical reasons. To address this issue, we examine alternative ESG portfolio-level outcomes in Table 6. We first consider *Top-bottom ESG stocks, Top ESG stocks* and *Bottom ESG stocks* which we define as the percentage of AUM invested in stocks with a normalized ESG score in the top or bottom decile. A second alternative measure we use is *Sin and fossil fuel stocks* which consists of the percentage of assets invested in sin (alcohol, tobacco and gambling) and fossil fuel (oil and gas) industries. The results in Table 6 are consistent with the tests based on the average portfolio ESG scores. The *PRI: Full ESG incorporation* signatories overweight top-performing ESG stocks and underweight bottom ESG stocks and hold less sin and fossil fuel stocks, but these findings hold only among PRI signatories that are based outside the U.S. (see Panel B). Among US signatories, only the *PRI: Full ESG incorporation* group have a significantly lower investment in sin and fossil fuel stocks (see column 5, Panel A). However, the groups reporting partial or no ESG incorporation, exhibit largely similar ESG portfolio outcomes than non-PRI institutions. One exception is the group of full ESG incorporation in the U.S., which tends to allocate less assets to Sin and fossil fuel stocks (see column 5, Panel A). When we look at US-domiciled *PRI: No reported ESG incorporation*, we find, as in Table 5, worse average ESG scores but no significant differences in the other ESG portfolio outcome dimensions.

Another concern is that US PRI signatories may not target high ESG rated stocks but rather invest in low-ESG stocks and aim to improve their investee firms' ESG performance via shareholder engagement. We again make use of the PRI survey data but conclude that it is unlikely to be the case. First, the PRI survey data actually reveals that US PRI signatories report lower levels of individual or collaborative shareholder engagement compared to their signatory peers from the rest of the world (see Internet Appendix Table IA4). Secondly, in Panel B of Table 7, we find no evidence that those US PRI

scores than non-PRI institutions. Outside of the U.S., we find better scores only for signatories that report applying 100% screening but not for signatories that focus on integration or that apply a mix of the two strategies.

institutions that report to engage with their portfolio firms on ESG issues exhibit better ESG portfolio scores in the three years (t+1, t+2, t+3) subsequent to the reported engagement. These findings suggest that it is unlikely that US investors prioritize engagement over incorporation. In contrast, Panel C of Table 7 shows that the *PRI: Engagement* group is successful outside the U.S. There is still the possibility that either US investors need more than three years to engage successfully or are just *unsuccessful* in their engagement approaches. In any case, we conclude that US institutions seem to fail to live up to PRI principle 2 which states that signatories "*will be active owners and incorporate ESG issues into their ownership policies and practices*".

The overall takeaway is that there is a disconnect between words and actions among US institutional investors. US-domiciled PRI signatories that report full or partial ESG incorporation do not have significantly better ESG portfolio outcomes compared to uncommitted non-signatory institutions (except perhaps for some US signatories investing less in sin and fossil fuel stocks). More concerning, we identified that a group of US PRI signatories that report no ESG incorporation efforts and actually exhibit significantly worse ESG scores than non-PRI investors. Hence, our analysis points to potential greenwashing by some US institutions that sign the PRI without following through on their public commitments to responsible investment in their equity portfolios.

4. What Types of US PRI Signatories Fail to Live Up to the principles?

We now take a closer look at the characteristics of US-domiciled institutions (*PRI: No reported ESG incorporation*) that sign the PRI but do not implement ESG considerations, ultimately exhibiting worse portfolio ESG scores than their non-PRI peers. Further studying the institutions in this group is important because this subset of US PRI signatories might be preventing their clients from reaching their investments' sustainability goals. To better understand what might be driving greenwashing behavior among these institutions, we conduct several cross-sectional tests. We conjecture that investors might be more likely to greenwash and hence skip the costs of implementing ESG when they are underperforming, face higher agency problems, or are less intrinsically motivated towards ESG.

We first test if US PRI signatories that have underperformed their peers might be more tempted to greenwash as they face more pressure to cut costs to offset their declining assets under management. Column (1) of Table 8 breaks-down the group of *PRI: No reported ESG incorporation* signatories if these are above and below the median portfolio buy-and-hold return performance among all US institutional investors in the prior year. We measure an investor's performance by its one factor holdings-based alpha as described in Appendix B. We observe that PRI signatories that report no ESG incorporation exhibit significantly worse portfolio ESG scores only when they had below-median performance. The relation between past underperformance and greenwashing (as measured by having low ESG scores and being in the *PRI: No reported ESG incorporation group)* suggests that institutions might use the PRI label to countervail their subpar investment performance, while not deploying resources towards implementing ESG practices.

Another potential driver of greenwashing might be agency issues between investment managers and their clients or conflicts with other stakeholders. We explore this prediction with two cross-sectional tests. First, we conjecture that greenwashing is likely to be more pronounced when institutions face less scrutiny, for instance when they serve the retail segment as opposed to institutional clients that are more sophisticated and can monitor investment managers more effectively. We classify investment managers as institutional-serving based on their inclusion in eVestment, which is used extensively by investment consultants and institutional clients (Jenkinson, Jones, Martinez 2016). Second, we test if there is greenwashing among investment management companies that are themselves involved in conflicts with their own stakeholders (e.g., employees, communities, or regulators). We measure these conflicts by the investment company's own history of negative ESG incidents. Note that this measure is different from the ESG portfolio scores because it is not based on portfolio holdings of the institution, but rather reflects the ESG compliance of the operations of the investment company itself (e.g. poor employment conditions, anti-competitive practices, regulatory violations). For this purpose, we obtain ESG incident data from RepRisk, which covers both private and publicly listed investment companies around the world and has been used in Glossner (2021), He, Kahraman and Lowry (2021), and Gantchev, Giannetti and Li (2021) among other papers. Consistent with our two predictions on agency issues, Columns (2) and (3) of Table 8 show that *PRI: No reported ESG incorporation* signatories have worse portfolio ESG scores when institutions predominately serve retail clients and experience more negative ESG incidents (higher operational ESG risks) in-house. Both findings indicate that when US signatories face less scrutiny from their clients or do not treat their own stakeholders responsibly, they also fail to implement ESG in their client portfolios, which is consistent with greenwashing.

Our last cross-sectional test explores the role of an institutional investor's general commitment to the PRI initiative. We conjecture that investors who are late joiners of the PRI are more likely trying to benefit from the ESG trend, but are less intrinsically motivated to implement responsible investing. We define a late joiner as an investor who joined in the second half of the sample period (2013 or later). In column (4) of Table 8, we find that the group of *PRI: No reported ESG incorporation* tend to exhibit worse portfolio ESG scores when the signatory joined the PRI late.

Taken together, these results suggest that greenwashing is more pervasive among US PRI signatories that face higher misalignment between the managers and their clients or other stakeholders. While the investor dimensions studied in Table 8 seem to all play a role in contributing to greenwashing behavior, we caution here that these characteristics may interact and are not mutually exclusive.

5. Can Clients See Through the PRI Label?

In the US asset management industry, where active management faces competitive pressure from index investing, ESG has been a bright spot for active management as ESG labeled strategies attract higher flows (Morningstar 2019). Previous studies provide evidence that sustainable mutual funds attract higher flows particularly after the introduction of external fund ESG labels (see Hartzmark and Sussman, 2019; Ceccarelli, Ramelli and Wagner, 2021), with ESG fund flows being less volatile and less sensitive to past negative returns (Renneboog, Ter Horst and Zhang, 2011). However, survey evidence suggests that in Europe, where ESG investing has had a longer presence, responsible investing already commands a sizable share of institutionally managed assets and ESG funds are not experiencing market share growth in recent years due to stricter standards (GSIA, 2018 and GSIA, 2020). In this last section, we examine whether investor flows are related to PRI membership and if investors can differentiate between truly committed and investors that are likely to be greenwashing.

In Table 9, we study investor flows imputed from institutional investors' disclosed holdings. We first calculate quarterly flows as the change in total equity assets scaled by total equity assets of the previous quarter-end and adjusting it for stock returns during the quarter. We then compute the total annual flows as the cumulative quarterly flows that an institution experienced over the year. Column (1) of Panel A shows that US PRI signatories attract significantly higher investor flows than non-PRI institutions also located in the U.S., even after controlling for past returns and flows. In column (2) we find that US fund investors are unable to differentiate between PRI signatories with different reported levels of ESG incorporation: both signatories that fully incorporate ESG and those with no reported ESG incorporation receive significantly higher flows.[12] These patterns do not seem to hold for non-US signatories. In column (1) of Panel B we observe that non-US signatories do not attract significantly higher investor flows. When we break down their level of reported ESG incorporation in column (2), we even observe that signatories that are fully committed to ESG seem to experience lower asset growth than non-signatories. We conjecture that the funds flows may be less responsive to ESG issues outside of the US, considering the level of maturity that sustainable investing has reached in European markets where ESG and conventional investing may be reaching a point of convergence.

The evidence is consistent with the view that investors are not able to distinguish between investors responsible investors that actually use ESG factors in their investment portfolio decisions and help explain why greenwashing may be sustainable by some US PRI signatories that do not incorporate ESG. End investors are also not able to differentiate between different shades of green, neither for the US (where US PRI signatories with no integration in the US experience higher flows) as well as in the non-US subsample (where Full and Partial ESG integration groups experience lower flows).

[12] Humphrey and Li (2021) also show that investor flows react positively to mutual fund companies that sign the PRI. In unreported robustness tests, we find qualitatively similar results on flows when we examine product-level data from eVestment which covers both US equity mutual funds and separately managed accounts.

6. Conclusions

We analyze how responsible investment principles map into ESG portfolio outcomes by studying the PRI, the largest (and UN-supported) global network focused on responsible investment. We compare what institutional investors report doing in terms of ESG incorporation with their portfolio-level ESG scores to answer which responsible investors actually invest responsibly.

We document that PRI signatories that report to fully or partially incorporate ESG into their active equity holdings have better portfolio ESG scores than non-PRI signatories – but this holds only for institutions domiciled outside of the U.S. In the U.S. we observe a substantial disconnect between what institutional investors claim to do and what they really do. We do not find better portfolio ESG scores for US PRI signatories, not even for those that report full ESG incorporation. US PRI signatories that report no ESG incorporation actually have, on average, *worse* scores than non-PRI investors. These latter findings are consistent with greenwashing by some US PRI signatories seeking to attract responsible flows. The difference in findings between the US and non-US signatories might be the result of a less regulated and more commercially-motivated approach to ESG in the U.S. Our results highlight that end investors need to look beyond the PRI label alone when evaluating investment managers on their sustainable credentials and the true alignment between their responsible investing commitments and actions.

This paper leaves open many questions for future research. Given that we show that some US PRI signatories do not allocate capital responsibly one may wonder about the ability of responsible investing to drive change in corporate ESG practices. More research is needed to better understand why some US PRI signatories engage in greenwashing whereas this phenomenon is not visible in other parts of the world. In addition, our sample period is relatively short given the recent history of the PRI initiative and the cross-section of our portfolio analysis is limited to publicly listed equities. Other asset classes, such as private equity, fixed income or real estate investments are worthy of investigation, but the empirical challenge is that there is less portfolio-level information. Given that responsible investing is a growing trend, future research should address these topics. It remains to be seen to what extent responsible investing directs capital towards companies that make the world more sustainable and ultimately contributes to attaining goals such as the UN Sustainable Development Goals.

7. References

Amel-Zadeh, Amir and George Serafeim, 2018, Why and How Investors use ESG Information: Evidence from a global survey, *Financial Analysts Journal* 74 (3), 87-103.

Berg, Florian, Julian F. Koelbel, and Roberto Rigobon, 2021, Aggregate Confusion: the Divergence of ESG ratings, MIT Working paper.

CFA Institute, 2015, Environmental, Social and Governance Issues in Investing: A Guide for Investment Professionals, 1–43.

Ceccarelli, Marco, Stefano Ramelli, and Alexander Wagner, 2021, Low-carbon mutual funds, Swiss Finance Institute working paper.

Clayton, Jay, 2018, SEC Chairman Remarks to the SEC Investor Advisory Committee, Dec. 13th 2018.

Cremers, Martijn., Ferreira, Miguel, Matos, Pedro and Laura Starks, 2016, Indexing and active fund management: International evidence. *Journal of Financial Economics* 120(3), pp.539-560.

Dimson, Elroy, Oguzhan Karakas, and Xi Li, 2015, Active Ownership, *Review of Financial Studies* 28 (12), 3225–3268.

Dimson, Elroy, Oguzhan Karakas, and Xi Li, 2021, Coordinated Engagements, University of Cambridge working paper.

Dyck, Alexander, Karl Lins, Lukas Roth, and Hannes Wagner, 2019, Do Institutional Investors Drive Corporate Social Responsibility? International Evidence, *Journal of Financial Economics* 131, 693-714.

Ferreira, Miguel and Pedro Matos, 2008, The Colors of Investors' Money: The Role of Institutional Investors Around the World, *Journal of Financial Economics* 88, 495-533.

Gantchev, Nickolay, Mariassunta Giannetti and Rachel Li, 2021, Does Money Talk? Market Discipline Through Selloffs and Boycotts, ECGI Finance Working Paper.

Gibson Brandon, Rajna, Philipp Krueger, and Shema F. Mitali, 2021, The Sustainability Footprint of Institutional Investors: ESG Driven Price Pressure and Performance, Swiss Finance Institute and ECGI working paper.

Gibson Brandon, Rajna, Philipp Krueger, and Peter Schmidt, 2021, ESG Rating Disagreement and Stock Returns, Swiss Finance Institute working paper.

Global Sustainable Investment Alliance (GSIA), 2018, Global Sustainable Investment Review 2018.

Global Sustainable Investment Alliance (GSIA), 2020, Global Sustainable Investment Review 2020.

Glossner, Simon, 2021, Repeat Offenders: ESG Incident Recidivism and Investor Underreaction, University of Virginia working paper.

Hartzmark, Samuel and Abigail Sussman, 2019, Do Investors Value Sustainability? A Natural Experiment Examining Ranking and Fund Flows, *The Journal of Finance* 74 (6), 2789-2837.

He, Yazhou, Bige Kahraman, and Michelle Lowry, 2021, ES Risks and Shareholder Voice, Drexel University Working Paper.

Hong, Harrison and Marcin Kacperczyk, 2009, The Price of Sin: The Effects of Social Norms on Markets, *Journal of Financial Economics* 93 (1), 15-36.

Humphrey, Jacquelyn and Yong Li, 2021, Who goes green: Reducing mutual fund emissions and its consequences, *Journal of Banking & Finance* 126, 106098.

Jenkinson, Tim, Howard Jones, and Jose Vicente Martinez, 2016, Picking Winners? Investment Consultants' Recommendations of Fund Managers, *The Journal of Finance* 71 (5), 2333-2370.

Kim, Soohun and Aaron Yoon, 2021, Assessing Active Managers' Commitment to ESG Evidence from United Nations Principles for Responsible Investment, Northwestern University working paper.

Krueger, Philipp, Zacharias Sautner, and Laura Starks, 2020, The Importance of Climate Risks for Institutional Investors, *Review of Financial Studies* 33 (3), 1067-1111.

Liang, Hao, Lin Sun, and Melvyn Teo, 2021, Greenwashing, Singapore Management University working paper

Morningstar, 2019, The Evolving Approaches to Regulating ESG Investing.

Organisation for Economic Co-operation and Development (OECD), 2019, Owners of the World's Listed Companies, OECD Capital Market Series.

PRI, 2020, Signatories delisted for not meeting the minimum requirements. Available at: https://www.unpri.org/reporting-and-assessment/signatories-delisted-for-not-meeting-the-minimum-requirements/6480.article

Renneboog, Luc, Jenke Ter Horst, and Chendi Zhang, 2011. Is ethical money financially smart? Nonfinancial attributes and money flows of socially responsible investment funds, *Journal of Financial Intermediation* 20(4), 562-588.

Reuters, 2021. ERISA and the challenges of using ESG in retirement plan investing. Available at https://reut.rs/3m5FaRg

Securities and Exchange Commission (SEC), 2021, SEC Announces Enforcement Task Force Focused on Climate and ESG Issues, Press Release 2021-42.

Starks, Laura, Parth Venkat, and Qifei Zhu, 2018, Corporate ESG Profiles and Investor Horizons, UT Austin working paper.

Wall Street Journal, 2019, ESG Funds Draw SEC Scrutiny, December 16 edition.

Appendix A: Additional Background on PRI Survey Data

In this appendix, we provide some further background information on the data from the PRI Reporting Framework. Annual reporting takes place between January and March and we interpret responses to account for the previous calendar year, resulting in a sample period from 2013 to 2017 (for example, the final 2018 report in our sample covers activities in 2017). In our analysis, we adjust and standardize reports to align across years, as reporting frameworks were subject to modifications. The PRI reporting framework includes twelve modules. Since we focus on direct equity investments by the signatories, we use the “organizational overview”, “strategy and governance”, “listed equity incorporation”, and “listed equity active ownership” modules to draw the necessary information for our analysis. These modules include information on ESG strategies. We use only answers to questions that are *mandatory to report and to disclose*. The reason is that mandatory indicators are completed by all eligible investors, while the response rates to voluntary indicators can vary widely. The Internet Appendix provides examples of the PRI survey questions used in our analysis (see Figures IA2 to IA8).

Table 2 shows descriptive statistics. Exploring cross-sectional heterogeneity, screening strategies (favoring or excluding stocks based on their ESG performance) are reported more frequently among European signatory institutions, while integration (the inclusion of ESG factors into financial analysis) is most popular among signatories from Asia-Pacific and the rest of the world. Thematic strategies (specific investments related to sustainability) are niche. Furthermore, larger signatories tend to use more integration relative to signatories with less equity AUM. There is an upward time trend in the intensity with which any given ESG strategy is applied over the sample period.

We focus our analysis on the share of equity assets to which institutions apply any form of ESG incorporation strategy as a proxy for their level of commitment to responsible investing. For this purpose, we classify signatories into three different groups: (1) *PRI: Full ESG incorporation*; (2) *PRI: Partial ESG incorporation* representing; and (3) *PRI: No reported ESG incorporation*. Among the top institutions, listed in Table IA3 of the Internet Appendix, Norges Bank Investment Management and Standard Life Aberdeen Plc are examples of *PRI: Full ESG incorporation* signatories. Fidelity and

Korea National Pension Service are classified as *PRI: Partial ESG incorporation* signatories, while Deutsche Bank AG and Janus Henderson Group Plc are *PRI: No reported ESG incorporation*.

The lower section of Panel A of Table 2 shows that the relative proportion of institutions that fully incorporate ESG into their portfolios is higher among non-US signatories (1,596 out of 2,144 investor-years) compared to US signatories (372 out of 651 investor-years). Conversely, the share of signatories not reporting ESG incorporation is higher among US PRI signatories. This is a first indication that US signatories report lower levels of ESG incorporation than signatories based in other regions. Among the *PRI: Full ESG incorporation* group, investors report using integration most frequently (89% and 83% of equity AUM among US and non-US signatories, respectively) followed by screening (54% and 66% of AUM) and with thematic strategies lagging far behind (18% and 14% of AUM). As expected, *PRI: Partial ESG incorporation* apply ESG strategies to a substantially lower share of their AUM, while signatories in the *PRI: No reported ESG incorporation* group report no usage of ESG incorporation strategies at all.

In order to validate whether our PRI signatory classification above is a plausible proxy for an institution's overall ESG investment effort, we examine other survey indicators in the PRI reporting framework. Panel B of Table 2 reports the frequency with which PRI signatories use specific ESG strategies.[13] Perhaps not surprisingly, we first document that signatories that report higher ESG incorporation (in terms of equity AUM covered) also report a higher frequency in usage of specific strategies. Second, a higher intensity of ESG incorporation strategies in terms of portfolio allocation (screening, integration, and thematic) also correlates with higher reported engagement with their portfolio companies. However, PRI signatories that do not incorporate ESG considerations in portfolio construction (i.e., those in the *PRI: No reported ESG incorporation* group) also engage less with portfolio companies on ESG issues. In fact, more than 50% of these signatories do not report any form of individual or collaborative ESG engagement.

[13] Table IA2 of the Internet Appendix provides variable definitions of the PRI survey These are sourced from questions LEI 04.1, LEA 02.1, LEA 16.1 of the PRI survey. For more details, see Figures IA3 to IA5. We provide overall statistics on the percentage of PRI signatories that use ESG strategies in Panel A of Table IA4.

Panel C of Table 2 looks at the PRI survey module that quantifies the organizational resources that PRI signatories dedicate to ESG issues.[14] We observe that *PRI: Full ESG incorporation* and *PRI: Partial ESG incorporation* have similar organizational structures when it comes to ESG. Almost all of these signatories have a dedicated ESG policy, involve their C-Suite executives and portfolio managers in the ESG process, employ 5-8% dedicated ESG employees (measured as a share of total employees), and are part of about five other responsible initiatives besides the PRI. In contrast, the signatories in the *PRI: No reported ESG incorporation* group are less organizationally focused on ESG. About 20-30% of them report no involvement of the C-suite executives or portfolio managers in ESG issues, ESG staff involvement is also 20-30% lower, and these signatories participate in fewer other sustainability initiatives.

Overall, we conclude that our classification of PRI signatories is a good proxy for how institutions incorporate ESG issues. *PRI: Full ESG incorporation* not only apply ESG to the entirety of their equity allocations, but these signatories also subsequently engage companies on ESG issues and have more organizational resources dedicated to ESG. *PRI: Partial ESG incorporation* commit to ESG for only a fraction of their AUM but still engage companies on ESG issues. The last group – *PRI: No reported ESG incorporation* – reports no ESG investment activity except for some engagement.

[14] This is sourced from questions SG 01, SG 07, SG09 of the PRI survey. See Figures IA6 to IA8 of the Internet Appendix for more details. Panel B of Table IA4 of the Internet Appendix provides more overall statistics.

Appendix B: Variable definitions

	ESG portfolio outcomes Sources: FactSet Ownership, MSCI IVA, ASSET4, Sustainalytics
Total ESG scores	is the (value-weighted) equity portfolio-level total ESG scores of an institutional investor. The first step is to calculate an equal-weighted ESG score for each stock in an investor's portfolio. We do so by taking an equal-weighted average of the normalized ESG scores from three ESG data providers (MSCI IVA, ASSET4, and Sustainalytics) or from the ones that are available if there is no coverage for one of them. The second step is to take the value-weighted average of the portfolio using the market value of each stock position.
Environmental scores	is the portfolio-level environmental scores of an institutional investor.
Social scores	is the portfolio-level social scores of an institutional investor.
Governance scores	is the portfolio-level governance scores of an institutional investor.
Top–bottom ESG stocks	is the percentage of equity assets invested in stocks with a normalized ESG score (based on MSCI IVA, ASSET4, and Sustainalytics) in the best decile minus the percentage of equity assets invested in stocks with an ESG score in the bottom decile.
Top ESG stocks	is the percentage of equity assets invested in stocks with a normalized ESG score in the best decile.
Bottom ESG stocks	is the percentage of equity assets invested in stocks with a normalized ESG score in the worst decile.
Sin and fossil fuel stocks	is the percentage of equity assets invested in sin stocks (Factset industries: alcoholic beverages, tobacco, casinos/gaming) and fossil fuel stocks (Factset industry codes: oil & gas production, integrated oil, oil refining/marketing, coal, contract drilling, oil & gas pipelines).
	PRI signatories and country-level ESG variables Sources: PRI signatory data from 2006 to 2017 and World/European Value Survey
PRI dummy	is one if the institutional investor is a PRI signatory in a given year, and zero if an investor is not a PRI signatory.
World Values (ES)	is the average World Value E&S index from the World Value Survey and European Value Study for 1999-2010. We obtain the values from Dyck et al. (2019).
	PRI signatories: by level of ESG incorporation Sources: PRI signatory data from 2013 to 2017 and PRI surveys from 2013 to 2017
PRI: Full ESG incorporation	is one if a PRI signatory reports that it applies ESG incorporation strategies (i.e., screening, thematic, or integration) to 100% of its equity AUM, and zero if a PRI signatory applies ESG strategies to less than 100% of its equity AUM or if an investor is not a PRI signatory. We take the percentage of equities to which incorporation strategies are applied in LEI 01.1 of the PRI survey.
PRI: Partial ESG incorporation	is one if a PRI signatory reports that it applies ESG strategies (i.e., screening, thematic, or integration) to between 1-99% of its equity AUM, and zero if a PRI signatory applies ESG strategies to 100% or 0% of its equity AUM or if an investor is not a PRI signatory. We take the percentage of equities to which incorporation strategies are applied in LEI 01.1 of the PRI survey.

PRI: No reported ESG incorporation	is one if a PRI signatory reports that it applies ESG strategies (i.e., screening, thematic, or integration) to 0% of its equity AUM or does not report this number, and zero if a PRI signatory applies ESG strategies to more than 0% of its equity AUM or if an investor is not a PRI signatory. We take the percentage of equities to which incorporation strategies are applied in LEI 01.1 of the PRI survey.

PRI signatories: break-downs by investor characteristics

Sources: PRI signatory data from 2013 to 2017, PRI surveys from 2013 to 2017, eVestment, and RepRisk

A: Low or B: high past performance	is low if an investor had a below-median 1-factor alpha of the holdings-based returns in the past year, and low if the alpha was above the median. We calculate the returns of an institutional investor as the buy-and-hold returns based on an institutions' disclosed equity holdings (for which ESG scores are available). We assume no interim trading between reported quarter-ends. We use AQR's global equity market factor to calculate the alpha.
A: Institutional or B: retail clients	is institutional if an investor is in the eVestment database, and retail if the investor is not in the eVestment database.
A: Low or B: high operational ESG risks	is high if an investor has an above-median ESG incident rate in her own investment company in a given year, and zero if the incident rate is below the median. We proxy the ESG incident rate of an investor based on a weighted moving average of an institutional investor's history of ESG incidents (the "Peak RepRisk Index"). The range of this measure is from 0 to 100, where a higher value signals that an investor had more or more severe ESG incidents in the past years. RepRisk calculates this measure by collecting ESG incidents from news sources and weighting them according to an incident's severity, reach, and novelty. The measure increases when an investor has new incidents and it decays over time when an investor has no new incidents.
A: Early or B: late joiner	is early if an investor committed to the PRI before 2013, and late if an investor joined the PRI in 2013 or later.

Portfolio characteristics

Sources: FactSet Ownership and Datastream returns

Europe	is one if the institutional investor is domiciled in Europe.
North America	is one if the institutional investor is domiciled in North America.
Investment manager	is one if the institution is an investment company or adviser and zero if it is an asset owner (pension funds, endowments, and sovereign wealth funds).
Number of stocks	is the number of unique stocks (in logs) held by an investor.
Industry concentration	is a dummy that takes the value of one if an investor holds stocks from two or less different industries.
Portfolio turnover	is the portfolio turnover of an investor. It is defined as the average portfolio churn rate of the last 4 quarters. See Gaspar, Massa, and Matos (2005) for more details.
Portfolio activeness	is the active share measure (versus the MSCI All Country World Index) of an institutional investor. We calculate active share as in Cremers and Petajisto (2009).
Average stock size	is the logarithm of the stocks' average market capitalizations.
AUM	is the logarithm of the total market value of an investors' equity holdings for which ESG scores are available.

Investment flows Sources: FactSet Ownership and Datastream returns	
Annual flows	are the annual flows of an institutional investor calculated based on her disclosed equity portfolio. We calculate the quarterly flows as the change in total equity assets (for which ESG scores are available) scaled by total equity assets of the previous quarter-end. We adjust the change in total equity assets for stock price changes during the quarter. We assume no interim trading between reported quarter-ends.

Figures and Tables

Fig. 1. The growth of the Principles for Responsible Investment

These figures examine the growth of PRI signatories among the population of institutional equity investors around the world. *PRI* denotes those institutional investors in the FactSet Ownership data that signed the UN Principles for Responsible Investment (PRI). *Non-PRI* denotes institutional investors that did not sign the PRI. Panel A plots the number of PRI signatories and non-PRI signatories over time. Panel B shows the coverage in terms of equity assets under management (AUM in USD trillion is computed as the sum of the market value of equity holdings for which we have ESG scores). Panels C and D show the AUM coverage for the sample of US and Non-US investors. The full sample period is from 2003 to 2017.

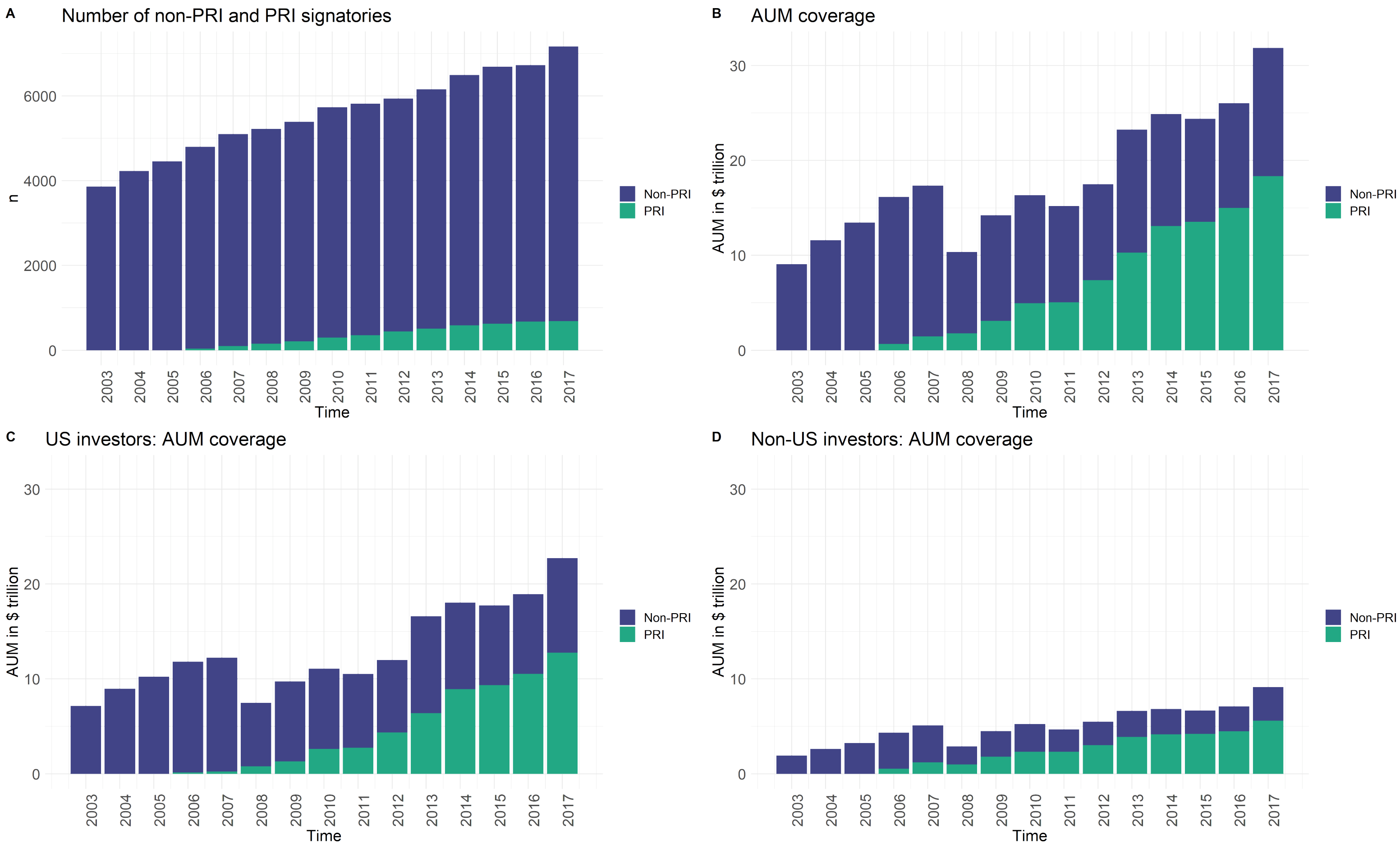

Fig. 2. Reported ESG incorporation strategies by PRI signatory institutional investors

These figures compare the percentage of equity AUM affected by different ESG incorporation strategies among PRI signatory institutional investors. Panel A reports the overall average percentage of AUM for the different strategies. The strategies are screening (*%-Screening*), thematic investment (*%-Thematic*), and integration of ESG factors (*%-Integration*). Panel B shows the average percentage of AUM affected by the strategies across each survey year. Panels C and D show the average percentage of AUM affected by the strategies by level of ESG incorporation, separately for the sample of US and Non-US institutional investors. We define the level of ESG incorporation based on whether PRI signatories report in the PRI survey that they apply ESG incorporation strategies (i.e., screening, thematic, or integration) to all of their equity AUM (*PRI: Full ESG incorporation*), part of their equity AUM (*PRI: Partial ESG incorporation*), or none of their equity AUM or do not report (*PRI: No reported ESG incorporation*). The sample period of the survey is from 2013 to 2017.

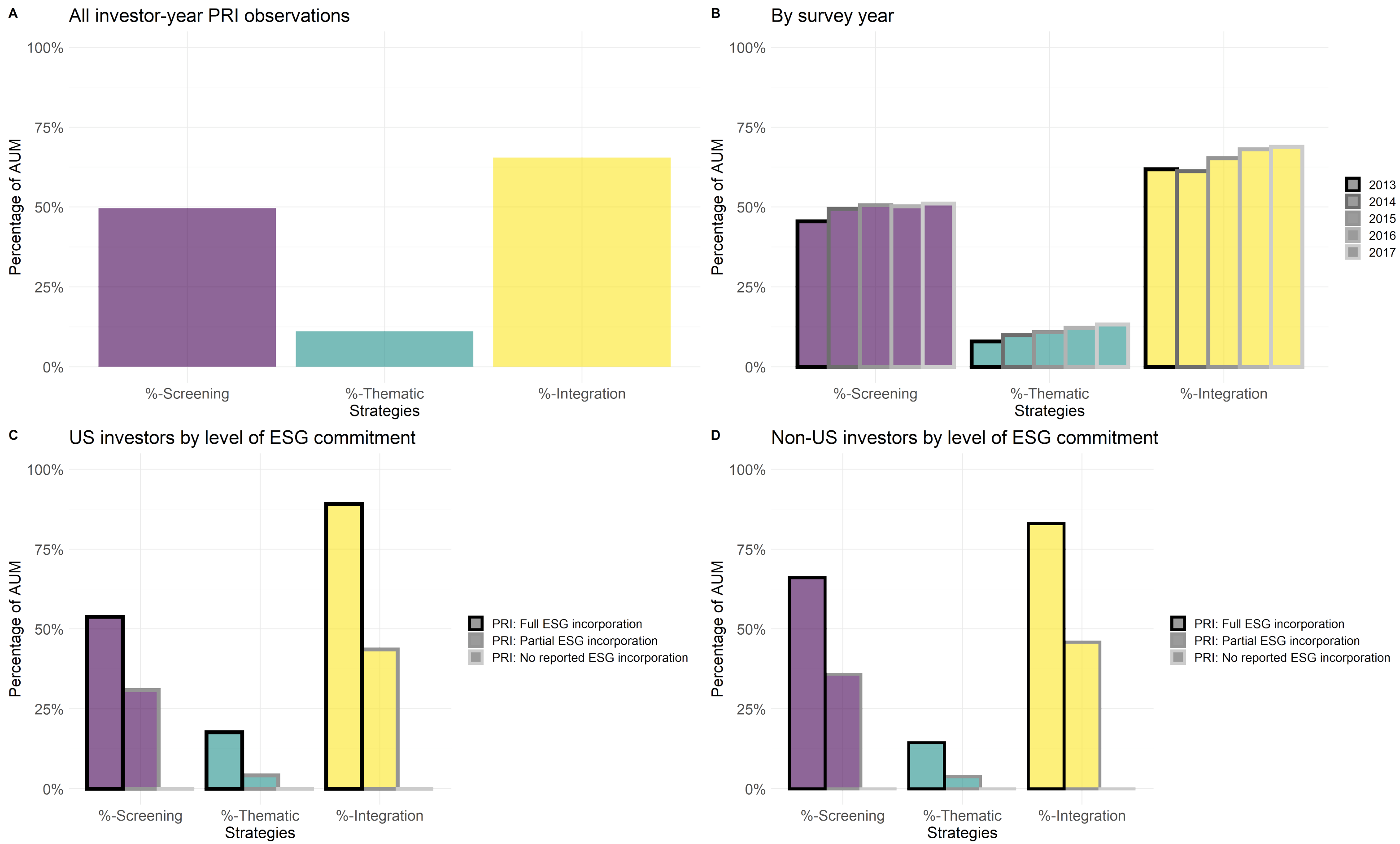

Table 1. Descriptive statistics on PRI signatory institutional investors

Panel A compares the characteristics of PRI signatory institutional investors to non-PRI investors in the FactSet Ownership data in different sample years (2006, 2012, and 2017). PRI signatories are institutional investors that report in the PRI survey (listed equity module of the PRI reporting framework) and could be matched to FactSet Ownership data on equity portfolio holdings, Datastream stock returns, and to ESG company ratings. *Number of investors* counts the number of institutional investors in each group. *AUM coverage* corresponds to the sum of the market value of equity holdings for which ESG scores are available. Panel B relates the PRI signing dummy to institutional investors' characteristics. Variable *PRI dummy* takes the value of 1 for PRI signatories from the signature year onwards. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2003 to 2017. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels. Definitions of the variables are provided in Appendix B.

Panel A: Summary statistics on PRI signatories vs. non-PRI institutional investors

	PRI			**Non-PRI**			**All**
	2006	2012	2017	2006	2012	2017	All
Number of investors	36	439	684	4762	5498	6481	10689
AUM coverage (USD, trillion)	0.65	7.37	18.35	15.52	10.13	13.52	271.61
by Region							
Europe	61.1%	51.3%	47.8%	29.4%	25.2%	19.9%	27.2%
North America	19.4%	23.0%	31.4%	63.1%	61.1%	68.3%	61.2%
Asia-Pacific + others	19.4%	25.7%	20.8%	7.5%	13.7%	11.8%	11.6%
by Type							
Asset owner	30.6%	8.7%	5.4%	5.3%	3.1%	2.0%	4.0%
Investment manager	69.4%	91.3%	94.6%	94.7%	96.9%	98.0%	96.0%
by AUM (USD)							
<1bn	27.8%	41.9%	42.1%	77.8%	82.0%	80.5%	78.5%
1-10bn	25.0%	35.1%	33.2%	16.8%	14.6%	15.8%	16.4%
10-100bn	47.2%	19.6%	19.9%	5.1%	3.3%	3.5%	4.8%
>100bn	0.0%	3.4%	4.8%	0.3%	0.1%	0.3%	0.4%
Portfolio characteristics							
Total ESG scores	0.36	0.18	0.22	0.12	0.01	0.01	0.05
Number of stocks	1196	808	820	277	212	208	270
Industry concentration	0.00	0.00	0.01	0.01	0.02	0.04	0.02
Portfolio turnover	0.28	0.27	0.28	0.40	0.37	0.33	0.37
Portfolio activeness	0.69	0.82	0.82	0.89	0.90	0.88	0.88
Average stock size (USD, million)	11.7	19.7	22.9	15.1	17.3	25.1	17.9

Table 1. Descriptive statistics on PRI signatory institutional investors (contd.)

Panel B: Characteristics of PRI signatories

	Dependent variable:	
	PRI dummy	
	(1)	(2)
Lag mean(return)	-3.12	-3.98^{*}
	(2.03)	(2.05)
World Values (ES)		3.19^{***}
		(0.39)
Europe	-0.07	-0.34^{***}
	(0.08)	(0.08)
North America	-1.07^{***}	-1.28^{***}
	(0.08)	(0.08)
Investment manager	-0.22^{**}	-0.22^{*}
	(0.11)	(0.12)
Number of stocks	0.10^{**}	0.13^{***}
	(0.05)	(0.05)
Industry concentration	0.40^{***}	0.43^{***}
	(0.14)	(0.15)
Portfolio turnover	-0.13^{*}	-0.09
	(0.07)	(0.07)
Portfolio activeness	-0.62^{***}	-0.41^{*}
	(0.23)	(0.23)
Average stock size	0.09^{*}	0.09^{*}
	(0.05)	(0.05)
AUM	0.12^{**}	0.11^{**}
	(0.05)	(0.05)
Constant	-6.60^{***}	-8.50^{***}
	(0.36)	(0.44)
Year fixed effects	Yes	Yes
Pseudo R2	0.27	0.29
Observations	69,994	69,459

Table 2. Reported ESG strategies by PRI signatory institutional investors

This table compares the ESG strategies of PRI signatory institutional investors as reported in the PRI surveys from 2013 to 2017. Panel A shows the percentage of signatories' AUM that is covered by an ESG strategy (*%-Screening*, *%-Thematic*, *%-Integration*). We define the level of ESG incorporation based on whether PRI signatories report in the PRI survey that they apply ESG incorporation strategies (i.e., screening, thematic, or integration) to all of their equity AUM (*PRI: Full ESG incorporation*), part of their equity AUM (*PRI: Partial ESG incorporation*), or none of their equity AUM or do not report (*PRI: No reported ESG incorporation*). Panel B provides the frequency by which PRI signatories report using negative screening, positive screening, norms-based screening, thematic investment, integration of ESG factors, and engagement. Overall engagement is further broken down into individual engagement, collaborative engagement, and internal voting. The strategies are not mutually exclusive. Panel C provides the frequency by which PRI signatories report having a formal ESG policy, Board involvement in ESG, C-suite involvement in ESG, asset manager involvement in ESG, and having a dedicated ESG staff. The panel also reports the number of ESG employees per total employees and the number of other responsible initiatives that the investor has committed to. Detailed definitions of these variables are available in Table IA2 of the Internet Appendix. The first column of each panel reports the number of investor-year observations.

Panel A: Fraction of PRI signatories' equity AUM covered by ESG incorporation strategies

	PRI overall			
	Total	**%-Screening**	**%-Thematic**	**%-Integration**
Overall	2,796	50%	11%	66%
by Year				
2013	442	46%	8%	62%
2014	497	49%	10%	61%
2015	556	51%	11%	65%
2016	625	50%	12%	68%
2017	676	51%	13%	69%
by Region				
Europe	1,379	60%	12%	62%
North America	777	37%	11%	62%
Asia-Pacific + others	640	42%	10%	77%
by Type				
Asset owner	184	57%	8%	67%
Investment manager	2,612	49%	11%	65%
by AUM (USD)				
<1bn	1,202	47%	12%	58%
1-10bn	919	55%	10%	68%
10-100bn	560	49%	10%	75%
>100bn	115	43%	12%	79%
	PRI by level of ESG incorporation			
US investors:				
PRI: Full ESG incorporation	372	54%	18%	89%
PRI: Partial ESG incorporation	112	31%	4%	44%
PRI: No reported ESG incorporation	168	0%	0%	0%
Non-US investors:				
PRI: Full ESG incorporation	1,596	66%	14%	83%
PRI: Partial ESG incorporation	275	36%	4%	46%
PRI: No reported ESG incorporation	273	0%	0%	0%

Table 2. Reported ESG strategies of PRI signatories (contd.)

Panel B: Percentage of PRI signatories that apply different sub-types of ESG strategies

	Total	Negative screening	Positive screening	Norms-based screening	Thematic	Integration	Engagement	Individual engagement	Collaborative engagement	Internal voting
Overall	2,796	68%	38%	33%	33%	77%	86%	81%	65%	72%
	PRI by level of ESG incorporation									
US investors:										
PRI: Full ESG incorporation	372	84%	43%	33%	42%	93%	94%	86%	68%	78%
PRI: Partial ESG incorporation	112	88%	52%	32%	31%	89%	85%	71%	52%	76%
PRI: No reported ESG incorporation	168	1%	1%	0%	1%	1%	39%	35%	30%	27%
Non-US investors:										
PRI: Full ESG incorporation	1,596	79%	44%	40%	38%	91%	93%	89%	73%	81%
PRI: Partial ESG incorporation	275	81%	53%	39%	45%	89%	96%	91%	68%	86%
PRI: No reported ESG incorporation	273	0%	0%	0%	0%	0%	54%	47%	44%	26%

Panel C: ESG organizational resources of PRI signatories

	Total	ESG policy	Board ESG involvement	C-Suite ESG involvement	Asset manager ESG involvement	ESG staff	% ESG employees	Other initiatives
Overall	2,796	95%	59%	90%	95%	72%	5%	4.6
	PRI by level of ESG incorporation							
US investors:								
PRI: Full ESG incorporation	372	93%	44%	94%	92%	74%	7%	4.8
PRI: Partial ESG incorporation	112	86%	38%	92%	99%	68%	6%	5.2
PRI: No reported ESG incorporation	168	89%	49%	74%	82%	43%	2%	2.5
Non-US investors:								
PRI: Full ESG incorporation	1,596	98%	65%	94%	97%	73%	5%	4.7
PRI: Partial ESG incorporation	275	92%	57%	94%	98%	87%	8%	6.2
PRI: No reported ESG incorporation	273	87%	58%	67%	85%	65%	2%	3.7

Table 3. Are ESG portfolio scores better for PRI signatory institutional investors?

This table regresses portfolio-level ESG scores on the *PRI dummy* (which takes the value of 1 for institutional investors that sign the PRI from the signature year onwards) and institutional investors' characteristics. The dependent variables are the value-weighted ESG scores of institutional investors' equity portfolios: *Total ESG scores*, *Environmental scores*, *Social scores*, and *Governance scores*. Panel A reports the results for the full sample, Panel B for US investors, and Panel C reports for non-US investors. Appendix B provides definitions of the variables. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2003 to 2017. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Full sample

	Dependent variable:			
	Total ESG scores (1)	Environmental scores (2)	Social scores (3)	Governance scores (4)
PRI dummy	0.06^{***} (0.01)	0.01 (0.01)	0.04^{***} (0.01)	0.10^{***} (0.02)
Europe	0.33^{***} (0.03)	0.24^{***} (0.02)	0.21^{***} (0.03)	0.42^{***} (0.04)
North America	0.05^{*} (0.03)	-0.10^{***} (0.03)	-0.12^{***} (0.02)	0.57^{***} (0.04)
Investment manager	-0.03 (0.02)	-0.03 (0.02)	-0.04^{**} (0.02)	0.00 (0.02)
Number of stocks	-0.19^{***} (0.01)	-0.19^{***} (0.01)	-0.16^{***} (0.02)	-0.10^{***} (0.01)
Industry concentration	-0.43^{***} (0.04)	-0.42^{***} (0.05)	-0.36^{***} (0.04)	-0.23^{***} (0.02)
Portfolio turnover	-0.20^{***} (0.02)	-0.18^{***} (0.01)	-0.19^{***} (0.01)	-0.07^{***} (0.01)
Portfolio activeness	-1.47^{***} (0.09)	-1.60^{***} (0.11)	-1.13^{***} (0.12)	-0.91^{***} (0.09)
Average stock size	-0.17^{***} (0.01)	-0.17^{***} (0.01)	-0.15^{***} (0.01)	-0.06^{***} (0.01)
AUM	0.14^{***} (0.01)	0.13^{***} (0.01)	0.12^{***} (0.01)	0.05^{***} (0.01)
Year fixed effects	Yes	Yes	Yes	Yes
Observations	76,335	76,335	76,335	76,335
Adjusted R^2	0.33	0.35	0.33	0.29

Panel B: US institutional investors

	Dependent variable:			
	Total ESG scores (1)	Environmental scores (2)	Social scores (3)	Governance scores (4)
PRI dummy	-0.05^{*} (0.03)	-0.05 (0.03)	-0.03 (0.02)	-0.04^{**} (0.02)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	43,620	43,620	43,620	43,620
Adjusted R^2	0.35	0.36	0.31	0.25

Panel C: Non-US institutional investors

	Dependent variable:			
	Total ESG scores (1)	Environmental scores (2)	Social scores (3)	Governance scores (4)
PRI dummy	0.07^{***} (0.02)	0.05^{***} (0.02)	0.06^{***} (0.01)	0.04^{*} (0.02)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	32,715	32,715	32,715	32,715
Adjusted R^2	0.24	0.24	0.20	0.17

Table 4. Do ESG portfolio scores improve after signing the PRI?

This table regresses portfolio-level ESG scores on the *PRI dummy*, *Post-signature dummy*, and institutional investors' characteristics. The dependent variables are the value-weighted portfolio-level ESG scores. *Post-signature dummy* takes the value 1 for investor-year observations from the year an institutional investor signs the PRI onwards (also for non-PRI institutions, matched on AUM, region, and institution type), and 0 otherwise. *PRI dummy* takes the value 1 for PRI signatories, and 0 for matched non-signatories *Post-signature x PRI* interacts the previous two dummy variables. Panel A reports the results for the full sample, Panel B for US investors, and Panel C reports for non-US investors. Definitions of the variables are provided in Appendix B. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2003 to 2017, but trimmed to [-3;+3] years around the signature dates for each PRI signatory (and matched non-PRI investor). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Full sample

	Dependent variable:			
	Total ESG scores	Environmental scores	Social scores	Governance scores
	(1)	(2)	(3)	(4)
Post-signature x PRI	0.04^{**} (0.02)	0.01 (0.01)	0.05^{***} (0.01)	0.03 (0.03)
Post-signature dummy	-0.02^{*} (0.01)	-0.02^{**} (0.01)	-0.03^{***} (0.01)	-0.01 (0.01)
PRI dummy	0.05^{**} (0.02)	0.05^{***} (0.02)	0.02 (0.02)	0.02 (0.02)
Number of stocks	-0.20^{***} (0.03)	-0.17^{***} (0.02)	-0.13^{***} (0.03)	-0.17^{***} (0.03)
Industry concentration	-0.70^{***} (0.09)	-0.60^{***} (0.09)	-0.61^{***} (0.07)	-0.46^{***} (0.11)
Portfolio turnover	-0.25^{***} (0.03)	-0.21^{***} (0.03)	-0.25^{***} (0.03)	-0.07^{*} (0.04)
Portfolio activeness	-0.73^{***} (0.12)	-0.74^{***} (0.11)	-0.39^{***} (0.11)	-0.97^{***} (0.14)
Average stock size	-0.20^{***} (0.02)	-0.18^{***} (0.02)	-0.16^{***} (0.02)	-0.10^{***} (0.02)
AUM	0.17^{***} (0.02)	0.16^{***} (0.02)	0.12^{***} (0.02)	0.09^{***} (0.02)
Year fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Type fixed effects	Yes	Yes	Yes	Yes
Observations	8,601	8,601	8,601	8,601
Adjusted R^2	0.31	0.32	0.30	0.27

Panel B: US institutional investors

	Dependent variable:			
	Total ESG scores	Environmental scores	Social scores	Governance scores
	(1)	(2)	(3)	(4)
Post-signature x PRI	-0.03 (0.03)	-0.03 (0.03)	-0.04 (0.03)	-0.03 (0.02)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Type fixed effects	Yes	Yes	Yes	Yes
Observations	2,345	2,345	2,345	2,345
Adjusted R^2	0.34	0.34	0.27	0.18

Panel C: Non-US institutional investors

	Dependent variable:			
	Total ESG scores	Environmental scores	Social scores	Governance scores
	(1)	(2)	(3)	(4)
Post-signature x PRI	0.07^{**} (0.03)	0.04^{*} (0.02)	0.08^{***} (0.02)	0.06 (0.03)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Type fixed effects	Yes	Yes	Yes	Yes
Observations	6,256	6,256	6,256	6,256
Adjusted R^2	0.21	0.21	0.17	0.18

Table 5. Are the ESG portfolio scores of PRI signatories different by extent of ESG incorporation?

This table regresses portfolio-level ESG scores on the intensity of ESG incorporation as reported in the PRI reporting framework. We split the *PRI dummy* into three groups based on whether PRI signatories report in the PRI survey that they use ESG incorporation strategies (i.e., screening, thematic, or integration). These signatories report incorporating ESG to 100% of their equity AUM (*PRI: Full ESG incorporation*), to 1-99% of their equity AUM (*PRI: Partial ESG incorporation*), or to 0% of their equity AUM or do not report (*PRI: No reported ESG incorporation*). Panel A reports the results for the full sample, Panel B for US investors, and Panel C reports for non-US investors. As in Table 3, we control for institutional investor's region, type, and portfolio characteristics. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2013 to 2017 (the years of the PRI survey). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Full sample

	Dependent variable:			
	Total ESG scores (1)	Environmental scores (2)	Social scores (3)	Governance scores (4)
PRI: Full ESG incorporation	0.06^{**} (0.02)	0.02 (0.02)	0.05^{**} (0.01)	0.06^{**} (0.02)
PRI: Partial ESG incorporation	0.03 (0.02)	0.02 (0.02)	0.04^{*} (0.02)	−0.02 (0.03)
PRI: No reported ESG incorporation	−0.02 (0.02)	−0.05 (0.02)	−0.01 (0.02)	0.00 (0.02)
Controls and year fixed effects	Yes	Yes	Yes	Yes
Observations	30,511	30,511	30,511	30,511
Adjusted R^2	0.34	0.34	0.30	0.25

Panel B: US institutional investors

	Dependent variable:			
	Total ESG scores (1)	Environmental scores (2)	Social scores (3)	Governance scores (4)
PRI: Full ESG incorporation	−0.04 (0.03)	−0.06 (0.04)	−0.03 (0.03)	−0.03 (0.03)
PRI: Partial ESG incorporation	−0.07 (0.05)	−0.08 (0.05)	−0.04 (0.03)	-0.06^{*} (0.03)
PRI: No reported ESG incorporation	-0.12^{**} (0.04)	-0.13^{**} (0.03)	−0.08 (0.04)	−0.04 (0.03)
Controls and year fixed effects	Yes	Yes	Yes	Yes
Observations	17,641	17,641	17,641	17,641
Adjusted R^2	0.34	0.36	0.26	0.15

Panel C: Non-US institutional investors

	Dependent variable:			
	Total ESG scores (1)	Environmental scores (2)	Social scores (3)	Governance scores (4)
PRI: Full ESG incorporation	0.09^{**} (0.02)	0.05^{**} (0.02)	0.07^{**} (0.02)	0.05 (0.03)
PRI: Partial ESG incorporation	0.06 (0.03)	0.07^{*} (0.03)	0.07^{*} (0.03)	−0.05 (0.04)
PRI: No reported ESG incorporation	0.06 (0.03)	0.03 (0.03)	0.05 (0.03)	0.04 (0.04)
Controls and year fixed effects	Yes	Yes	Yes	Yes
Observations	12,870	12,870	12,870	12,870
Adjusted R^2	0.22	0.23	0.17	0.18

Table 6. Are other ESG portfolio outcomes of PRI signatories different by extent of ESG incorporation?

This table regresses alternative portfolio-level ESG outcomes on different levels of reported ESG incorporation in the PRI survey. The dependent variables are the *Total ESG scores*, *Top–bottom ESG stocks*, *Top ESG stocks*, *Bottom ESG stocks*, and *Sin and fossil fuel stocks*. Panel A reports the results for US investors and Panel B reports for non-US investors. As in Table 3, we control for institutional investor's region, type, and portfolio characteristics. Definitions of the variables are provided in Appendix B. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2013 to 2017. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: US institutional investors

	Dependent variable:				
	Total ESG scores	Top–bottom ESG stocks	Top ESG stocks	Bottom ESG stocks	Sin and fossil fuel stocks
	(1)	(2)	(3)	(4)	(5)
PRI: Full ESG incorporation	−0.04 (0.03)	−0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	-0.02^{**} (0.01)
PRI: Partial ESG incorporation	−0.07 (0.05)	−0.03 (0.01)	−0.01 (0.01)	0.02^{**} (0.01)	−0.01 (0.01)
PRI: No reported ESG incorporation	-0.12^{**} (0.04)	−0.03 (0.02)	−0.01 (0.01)	0.02 (0.01)	0.01 (0.02)
Controls and year fixed effects	Yes	Yes	Yes	Yes	
Observations	17,641	17,641	17,641	17,641	17,641
Adjusted R^2	0.34	0.21	0.20	0.09	0.02

Panel B: Non-US institutional investors

	Dependent variable:				
	Total ESG scores	Top–bottom ESG stocks	Top ESG stocks	Bottom ESG stocks	Sin and fossil fuel stocks
	(1)	(2)	(3)	(4)	(5)
PRI: Full ESG incorporation	0.09^{**} (0.02)	0.04^{**} (0.01)	0.03^{*} (0.01)	-0.01^{**} (0.00)	-0.01^{**} (0.00)
PRI: Partial ESG incorporation	0.06 (0.03)	0.02 (0.01)	0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
PRI: No reported ESG incorporation	0.06 (0.03)	0.02 (0.01)	0.02 (0.01)	−0.00 (0.00)	−0.00 (0.01)
Controls and year fixed effects	Yes	Yes	Yes	Yes	
Observations	12,870	12,870	12,870	12,870	12,870
Adjusted R^2	0.22	0.16	0.12	0.10	0.02

Table 7. Do PRI signatories engage companies to become more sustainable?

This table regresses portfolio-level ESG scores measured in years $t+1$, $t+2$, and $t+3$ on reported ESG engagement activity in the PRI reporting framework. We split the *PRI dummy* into two groups based on whether PRI signatories report in the PRI survey that they engage companies on ESG issues (i.e., collaborative engagement, individual engagement, or internal voting). Panel A reports the results for the full sample, Panel B for US investors, and Panel C reports for non-US investors. As in Table 3, we control for institutional investor's region, type, and portfolio characteristics. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2013 to 2017 (the years of the PRI survey). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Full sample

	Dependent variable:		
	Total ESG scores (t+1)	Total ESG scores (t+2)	Total ESG scores (t+3)
	(1)	(2)	(3)
PRI: Engagement	0.05* (0.02)	0.04* (0.01)	0.04 (0.01)
PRI: No engagement	−0.05 (0.04)	−0.02 (0.04)	−0.03 (0.04)
Controls and year fixed effects	Yes	Yes	Yes
Observations	22,582	15,898	9,946
Adjusted R^2	0.35	0.38	0.37

Panel B: US institutional investors

	Dependent variable:		
	Total ESG scores (t+1)	Total ESG scores (t+2)	Total ESG scores (t+3)
	(1)	(2)	(3)
PRI: Engagement	−0.07 (0.03)	−0.06 (0.02)	−0.04 (0.03)
PRI: No engagement	−0.15** (0.04)	−0.10 (0.07)	−0.14 (0.05)
Controls and year fixed effects	Yes	Yes	Yes
Observations	13,009	9,085	5,613
Adjusted R^2	0.34	0.35	0.35

Panel C: Non-US institutional investors

	Dependent variable:		
	Total ESG scores (t+1)	Total ESG scores (t+2)	Total ESG scores (t+3)
	(1)	(2)	(3)
PRI: Engagement	0.07* (0.02)	0.06* (0.02)	0.06 (0.01)
PRI: No engagement	0.08 (0.05)	0.10 (0.05)	0.09 (0.05)
Controls and year fixed effects	Yes	Yes	Yes
Observations	9,573	6,813	4,333
Adjusted R^2	0.24	0.26	0.25

Table 8. US-institutional investors: What are the characteristics of "greenwashing" PRI signatories?

This table examines the characteristics of US institutional investors that fail to implement ESG practices despite their commitments. We regress portfolio-level ESG scores on different levels of ESG incorporation and split the dummy *PRI: No reported ESG incorporation* according to five different investor characteristics. Column 1 differentiates between institutional investors with low and high past portfolio performance, which we measure based on the median of an investor's 1-factor holdings-based alpha in the previous year. Column 2 differentiates institutional investors based on their client focus. An investor is considered to focus on "institutional" clients if it is covered by the eVestment platform, a database used extensively by institutional investment consultants in the US, and "retail" clients otherwise. Column 3 differentiates between institutional investors with high and low operational ESG risks, which we measure based on the median of the number of ESG incident news that the investor experiences in its investment company. The incident data comes from RepRisk. Column 4 differentiates between early and late PRI joiners, where "late" joiners are institutional investors that commit to the PRI in 2013 or after. As in Table 3, we control for institutional investor's region, type, and portfolio characteristics. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2013 to 2017. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Dependent variable:			
	Total ESG scores			
	A: high past performance B: low past performance (1)	A: institutional clients B: retail clients (2)	A: low operational ESG risks B: high operational ESG risks (3)	A: early joiner B: late joiner (4)
PRI: Full ESG incorporation	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)
PRI: Partial ESG incorporation	−0.07 (0.05)	−0.07 (0.05)	−0.07 (0.05)	−0.07 (0.05)
PRI: No reported ESG incorporation (A)	−0.07 (0.05)	−0.03 (0.05)	−0.03 (0.06)	−0.08 (0.04)
PRI: No reported ESG incorporation (B)	-0.14^{**} (0.03)	-0.20^{**} (0.06)	-0.17^{*} (0.06)	-0.15^{**} (0.04)
Controls and year fixed effects	Yes	Yes	Yes	Yes
Observations	17,633	17,641	17,579	17,641
Adjusted R^2	0.34	0.34	0.34	0.34

Table 9. Are investors' asset flows different by level of ESG incorporation?

This table tests if investor flows are sensitive to signing the PRI and different levels of ESG incorporation. We regress the growth of institutions' AUM due to investors in- or outflows (annual asset flows) on the PRI signing dummy or different levels of reported ESG incorporation. The dependent variable is *Annual flows*, which is calculated based on the investor's disclosed equity holdings. We calculate the quarterly flows as the change in total equity assets (for which ESG scores are available) scaled by total equity assets of the previous quarter-end. We adjust the change in total equity assets for stock price changes during the quarter. We then compute annual flows by cumulating the quarterly flows. Panel A reports the results for US investors and Panel B reports for non-US investors. The sample period is from 2003 to 2017 (full sample) in the first column and from 2013 to 2017 (survey years) in the second column. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels. Definitions of the variables are provided in Appendix B.

Panel A: US investors

	Dependent variable:	
	Annual flows	
	(1)	(2)
PRI dummy	0.09***	
	(0.02)	
PRI: Full ESG incorporation		0.08**
		(0.03)
PRI: Partial ESG incorporation		0.07
		(0.04)
PRI: No reported ESG incorporation		0.16**
		(0.04)
Past alpha	1.28	0.55
	(0.87)	(0.73)
Past flows	0.04**	0.05**
	(0.01)	(0.01)
Investment manager	0.01	−0.02
	(0.01)	(0.03)
Number of stocks	−0.41***	−0.54***
	(0.06)	(0.06)
Industry concentration	0.15**	0.14*
	(0.06)	(0.06)
Portfolio turnover	0.48***	0.46***
	(0.10)	(0.04)
Portfolio activeness	0.08	−0.41**
	(0.17)	(0.11)
Average stock size	−0.40***	−0.52***
	(0.04)	(0.06)
AUM	0.38***	0.49***
	(0.04)	(0.05)
Year fixed effects	Yes	Yes
Observations	40,054	16,110
Adjusted R^2	0.13	0.15

Panel B: Non-US investors

	Dependent variable:	
	Annual flows	
	(1)	(2)
PRI dummy	−0.00	
	(0.02)	
PRI: Full ESG incorporation		−0.05***
		(0.01)
PRI: Partial ESG incorporation		−0.06**
		(0.02)
PRI: No reported ESG incorporation		−0.03
		(0.03)
Past alpha	2.36*	2.83**
	(1.10)	(0.93)
Past flows	0.03***	0.03*
	(0.01)	(0.02)
Investment manager	0.10***	0.06**
	(0.03)	(0.02)
Number of stocks	−0.40***	−0.41***
	(0.03)	(0.03)
Industry concentration	0.13	0.16
	(0.09)	(0.12)
Portfolio turnover	0.66***	0.53***
	(0.11)	(0.02)
Portfolio activeness	0.48***	0.29*
	(0.12)	(0.12)
Average stock size	−0.38***	−0.42***
	(0.03)	(0.03)
AUM	0.39***	0.42***
	(0.03)	(0.03)
Year fixed effects	Yes	Yes
Observations	29,940	12,289
Adjusted R^2	0.15	0.18

INTERNET APPENDIX

Do Responsible Investors Invest Responsibly?

Fig. IA1. Densities of portfolio-level ESG scores: PRI signatories vs. non-PRI investors

PRI denotes those institutional investors in the FactSet Ownership data that signed the UN Principles for Responsible Investment (PRI). PRI Signatories are denoted *PRI* from their signature year onwards. *Non-PRI* denotes all institutional investors in the FactSet Ownership data that did not sign the PRI. The densities are computed based on value-weighted portfolio-level ESG scores for all stocks with available ESG scores. Panel A compares the *Total ESG scores* for PRI and Non-PRI investors, while the other panels compare the densities of the *Environmental scores* (Panel B), *Social scores* (Panel C), and *Governance scores* (Panel C). The sample period is from 2003 to 2017.

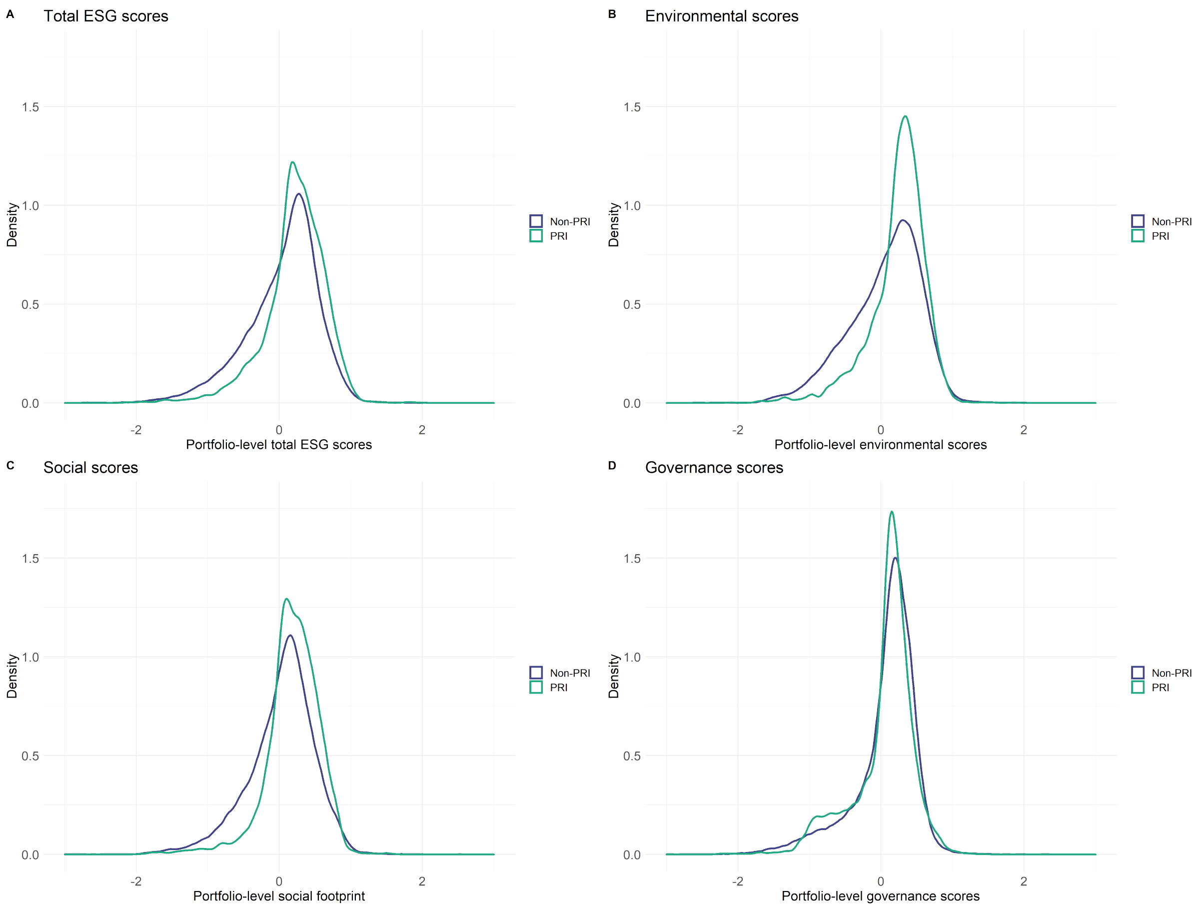

Fig. IA2. PRI Survey: Indicator LEI 01.1 (ESG incorporation strategy)

Retrieved from the Listed Equity Incorporation (LEI) module of the PRI reporting framework. Principle 1 states that PRI signatories must incorporate ESG factors into investment analysis and decision-making processes. The purpose of this indicator is to capture the proportions of the listed equity assets of the PRI signatories that are covered by different approaches in implementing this principle. For instance, if a signatory applies two strategies to the same asset, she needs to select the relevant combination options. For example, one may apply screening for only 5% of one's assets, and for the remainder a combination of screening and integration. In these cases, one would report 'Screening alone' for 5% and 'Screening and Integration strategies' for the remaining 95%. If one does not apply any incorporation approach, then the option 'We do not apply incorporation strategies' should account for 100% of your listed equity assets. *Screening* is defined as a) negative/exclusionary screening: The exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria; b) positive/best-in-class screening: Investment in sectors, companies or projects selected for positive ESG performance relative to industry peers; or c) norms-based screening: Screening of investments against minimum standards of business practice based on international norms. *Thematic* is defined as investment in themes or assets specifically related to sustainability (for example, clean energy, green technology or sustainable agriculture). *Integration* is defined as the systematic and explicit inclusion by investment managers of environmental, social and governance factors into traditional financial analysis.

	Indicator status	Purpose	Principle
LEI 01	MANDATORY	CORE ASSESSED	PRI 1

LEI 01	INDICATOR	
LEI 01.1	Indicate • which ESG incorporation strategy and/or combination of strategies you apply to your actively managed listed equities; and • the breakdown of your actively managed listed equities by strategy or combination of strategies.	
	ESG incorporation strategy (select all that apply)	**Percentage of active listed equity to which the strategy is applied — you may estimate +/- 5%**
	❑ Screening alone (i.e. not combined with any other strategies)	%
	❑ Thematic alone (i.e., not combined with any other strategies)	%
	❑ Integration alone (i.e., not combined with any other strategies)	%
	❑ Screening and integration strategies	%
	❑ Thematic and integration strategies	%
	❑ Screening and thematic strategies	%
	❑ All three strategies combined	%
	❑ We do not apply incorporation strategies	%
	Total actively managed listed equities	**100%**

Fig. IA3. PRI Survey: Indicator LEI 04.1 (ESG screening)

Retrieved from the Listed Equity Incorporation (LEI) module of the PRI reporting framework. This indicator asks PRI signatories to describe which ESG screens are used and whether they are used in combination with other screens. Screening can be based on: a) *products*—e.g., specified weapons, tobacco; b) *activities*—e.g., specific products within a sector that is not in itself excluded such as uranium mining; c) *sectors*—e.g., oil and gas, mining; d) *countries/geographic regions*—e.g., Sudan, Iran; e) *environmental and social practices and performance*—e.g., child labor, environmental damage, sustainability reporting; or f) *corporate governance*—e.g., excessive executive remuneration, non-independent boards.

	Indicator status	Purpose	Principle
LEI 04	MANDATORY	DESCRIPTIVE	PRI 1

LEI 04	INDICATOR		
LEI 04.1	Indicate and describe the type of screening you apply to your internally managed active listed equities.		
	Type of screening	**Screened by**	**Description**
	Negative/exclusionary screening	☐ Product ☐ Activity ☐ Sector ☐ Country/geographic region ☐ Environmental and social practices and performance ☐ Corporate governance	
	Positive/best-in-class screening	☐ Product ☐ Activity ☐ Sector ☐ Country/geographic region ☐ Environmental and social practices and performance ☐ Corporate governance	
	Norms-based screening	☐ UN Global Compact Principles ☐ The UN Guiding Principles on Business and Human Rights ☐ International Labour Organization Conventions ☐ United Nations Convention Against Corruption ☐ OECD Guidelines for Multinational Enterprises ☐ Other; specify______________	

Fig. IA4. PRI Survey: Indicator LEA 02.1 (engagement)

Retrieved from the Listed Equity Active Ownership (LEA) module of the PRI reporting framework. This indicator targets engagements that seek better ESG-related disclosure and transparency, and relate to Principles 2 and 3. There are many different configurations of engagement. The defining characteristics of an *individual/internal staff engagement* are: a) it is carried out by your internal staff alone; and b) it is conducted in the name of your organization. *Collaborative engagement* is engagement that an investor conducts jointly with other investors. This includes: a) groups of investors working together without the involvement of a formal investor network; b) groups of investors working together within a formal investor network, with some level of support but with individual members of the collaboration responsible for most of the engagement activity; and c) collaborative engagement coordinated and facilitated by a formal investor network (i.e. PRI coordinated investors coalitions). *Service provider engagements* include engagements conducted via: a) commercial parties that provide stand-alone engagement services without managing their clients' underlying assets; and b) investor organizations that conduct engagement on their members' behalf and that have an explicit mandate from their members to represent them. These include engagements conducted entirely on an outsourced basis as well as those facilitated by the service provider with some involvement of the investor's own staff.

	Indicator status	Purpose	Principle
LEA 02	MANDATORY	GATEWAY	PRI 1, 2, 3

LEA 02	INDICATOR	
LEA 02.1	Indicate the method of engagement, giving reasons for the interaction.	
	Type of engagement	**Reason for interaction**
	Individual/Internal staff engagements	☐ To influence corporate practice (or identify the need to influence) on ESG issues ☐ To encourage improved/increased ESG disclosure ☐ Other; specify_________ ☐ We do not engage via internal staff. Please specify why your organisation does not engage via internal staff. (max. 200 words)
	Collaborative engagements	☐ To influence corporate practice (or identify the need to influence) on ESG issues ☐ To encourage improved/increased ESG disclosure ☐ Other; specify_________ ☐ We do not engage via collaborative engagements. Please specify why your organisation does not engage via collaborative engagement. (max. 200 words)
	Service provider engagements	☐ To influence corporate practice (or identify the need to influence) on ESG issues ☐ To encourage improved/increased ESG disclosure ☐ Other; specify_________ ☐ We do not engage via service providers. Please specify why your organisation does not engage via service providers. (max. 200 words

Fig. IA5. PRI Survey: Indicator LEA 16.1 (internal voting)

Retrieved from the Listed Equity Active Ownership (LEA) module of the PRI reporting framework. This indicator relates to PRI signatories' voting policies. The provided answer options are self-explanatory.

LEA 16	Indicator status MANDATORY	Purpose DESCRIPTIVE	Principle PRI 2

LEA 16	INDICATOR	
LEA 16.1	Indicate how you typically make your (proxy) voting decisions.	
	Approach	**Based on**
	❍ We use our own research or voting team and make voting decisions without the use of service providers.	❍ Our own voting policy ❍ Our clients' requests or policy ❍ Other; explain__________
	❍ We hire service provider(s) that makes voting recommendations and/or provides research that we use to inform our voting decisions.	❍ The service provider voting policy we sign off on ❍ Our own voting policy ❍ Our clients' requests or policy ❍ Other; explain__________
	❍ We hire service provider(s) that make voting decisions on our behalf, except for some pre-defined scenarios for which we review and make voting decisions.	❍ The service provider voting policy we sign off on ❍ Our own voting policy ❍ Our clients' requests or policy ❍ Other; explain__________
	❍ We hire service provider(s) that make voting decisions on our behalf.	❍ The service provider voting policy we sign off on ❍ Our own voting policy ❍ Our clients' requests or policy ❍ Other; explain__________

Fig. IA6. PRI Survey: Indicator SG 01 (ESG policy)

Retrieved from the Strategy and Governance (SG) module of the PRI reporting framework. This indicator relates to the investment policy of a PRI signatory.

SG 01	Indicator status MANDATORY	Purpose CORE ASSESSED	Principle GENERAL

SG 01	INDICATOR	
SG 01.1	Indicate if you have an investment policy that covers your responsible investment approach.	
	❍ Yes	❍ No

Fig. IA7. PRI Survey: Indicator SG 07 (organizational structure)

Retrieved from the Strategy and Governance (SG) module of the PRI reporting framework. This indicator relates to roles in a PRI signatory's organization and whether they have oversight or are involved in the implementation of responsible investment strategies.

SG 07	Indicator status MANDATORY	Purpose CORE ASSESSED	Principle GENERAL

SG 07	INDICATOR			
	Indicate the roles in your organisation, and indicate for each whether they have oversight and/or implementation responsibilities for responsible investment.			
	Roles present in your organisation	**Oversight/ accountability for RI**	**Implementation of RI**	**No responsibility for RI**
	❑ Board members or trustees	❑	❑	❑
	❑ Chief Executive Officer (CEO), Chief Investment Officer (CIO), Investment Committee	❑	❑	❑
	❑ Other chief-level staff or head of department, specify_______________	❑	❑	❑
	❑ Portfolio managers	❑	❑	❑
SG 07.1	❑ ESG portfolio manager	❑	❑	❑
	❑ Investment analysts	❑	❑	❑
	❑ Dedicated responsible investment staff	❑	❑	❑
	❑ External managers or service providers	❑	❑	❑
	❑ Investor relations	❑	❑	❑
	❑ Other role, specify (1) _______________	❑	❑	❑
	❑ Other role, specify (2) _______________	❑	❑	❑
	For the roles for which you have RI oversight/accountability or implementation responsibilities, indicate how you execute these responsibilities.			

SG 07.3	Indicate the number of dedicated responsible investment staff your organisation has.
	☐

Fig. IA8. PRI Survey: Indicator SG 09 (responsible initiatives)

Retrieved from the Strategy and Governance (SG) module of the PRI reporting framework. This indicator relates to the responsible initiatives of which a PRI signatory is a member or in which the investor participated.

SG 09	Indicator status MANDATORY	Purpose CORE ASSESSED	Principle PRI 4,5

SG 09	INDICATOR		
SG 09.1	Select the collaborative organisation and/or initiatives of which your organisation is a member or in which it participated during the reporting year and the role played.		
	Collaborative Organisation/ Initiative	**Your organisation's role in the initiative during the reporting year (see definitions)**	**Provide a brief commentary on the level of your organisation's involvement in the initiative** [OPTIONAL]
	☑ Principles for Responsible Investment (PRI)	Basic, Moderate, Advanced [drop down]	
	❑ Asian Corporate Governance Association	[same as above]	
	❑ Australian Council of Superannuation Investors	[same as above]	
	❑ AFIC—La Commission ESG	[same as above]	
	❑ BVCA—Responsible Investment Advisory Board	[same as above]	

. . .

	❑ United Nations Global Compact	[same as above]	
	❑ Other collaborative organisation/ initiative; specify_______	[same as above]	
	❑ Other collaborative organisation/ initiative; specify_______	[same as above]	
	❑ Other collaborative organisation/ initiative; specify_______	[same as above]	
	❑ Other collaborative organisation/ initiative; specify_______	[same as above]	

Table IA1. Match between PRI signatory data and Factset Ownership equity data

This table describes how we construct the sample of PRI signatory data and equity holdings from Factset Ownership.

- We match the PRI signatory data to global institutional equity holdings obtained from FactSet Ownership. We match signatories that are asset owners or investment managers but not service providers because these do not manage assets by themselves.
- As a first step, we run a name-matching algorithm on the two lists of names cleaned for punctuation, accents, and non-alphanumeric and special characters using the Jaro-Winkler measure to determine the smallest distance between two given names in the lists.
- In a second step, we perform manual checks and improvements to the initial output of the name-matching algorithm by controlling for the country location of the signatory's headquarter, the asset class composition of its holdings as reported to PRI, and the website URLs reported to PRI and FactSet.
- Our matching of the PRI with the FactSet investor universe occasionally leads to double matches. This can happen when both the parent and the entity sign the PRI independently. In such cases, we give priority to entity over parent matches. In rare cases, even though both parent and entity signed, a valid report might not be available for the entity while it is available for the parent. Should this occur, we then prioritize the parent match. Whenever a parent signed but the entities did not, we assume that the entities inherit the PRI status, but not vice versa.
- We are able to match 684 PRI signatories with institutional investor names in FactSet using a name-matching algorithm and manual verifications. All of our analysis is conducted at the FactSet entity level. Of the 1,549 unique PRI identifiers, only 874 needed to complete the PRI modules relating to listed equity (the other 675 either do not hold publicly listed equities, do not incorporate responsible investment in their equities, or hold less than 10% of their AUM in actively managed equity strategies). Of those 874 signatories, we match 537 to the FactSet database leaving us with 337 unmatched entities. Some of the matches are at the group parent level and translate to 684 FactSet affiliated entities.
- A large proportion of the unmatched 337 signatories that do report to PRI on their listed equities do not have sufficient direct equity holdings to show up in FactSet. Many do hold a substantial proportion of their equity AUM under fund-of-funds, or simply do not have enough AUM. For example, the SEC Form 13-F filing of portfolio holdings of equity-like securities is required only for institutional investment managers that exercise discretion over US$ 100 million or more.

Table IA2. Variable definitions of the PRI survey (presented in Table 2)

Reported ESG incorporation strategies (Panel A)

Sources: PRI surveys from 2013 to 2017, questions from the LEI (Listed Equity Incorporation) module of the PRI reporting framework

%-Screening	is the percentage of AUM covered by screening strategies. We take the percentage of equities to which screening is applied in LEI 01.1 of the PRI survey.
%-Thematic	is the percentage of AUM covered by thematic strategies. We take the percentage of equities to which thematic investment is applied in LEI 01.1 of the PRI survey.
%-Integration	is the percentage of AUM covered by integration strategies. We take the percentage of equities to which thematic investment is applied in LEI 01.1 of the PRI survey.

Reported ESG incorporation sub-strategies (Panel B)

Sources: PRI surveys from 2013 to 2017, questions from the LEI (Listed Equity Incorporation) and LEA (Listed Equity Active Ownership) modules of the PRI reporting framework

Negative screening	is one if the "Negative/exclusionary screening" type is selected in *LEI 04.1* of the PRI survey. This comprises the exclusion from a portfolio of certain sectors, companies, or practices based on specific ESG criteria.
Positive screening	is one if the "Positive/best-in-class screening" type is selected in *LEI 04.1* of the PRI survey. This comprises the investment in companies selected for positive ESG performance relative to industry peers.
Norms-based screening	is one if the "Norms-based screening" type is selected in *LEI 04.1* of the PRI survey. This comprises screening of investments against minimum standards of business practice based on international norms (UN Global Compact Principles, etc.).
Thematic	is one if any of the options containing the word "thematic" and/or "All three strategies combined" are ticked in *LEI 01.1* of the PRI survey. Thematic is defined as investment in companies specifically related to sustainability (e.g. clean energy, green technology, or sustainable agriculture).
Integration	is one if any of the options containing the word "integration" and/or "All three strategies combined" are ticked in *LEI 01.1* of the PRI survey. Integration is defined as the systematic and explicit inclusion by investment managers of environmental, social, and governance factors into traditional financial analysis.
Engagement	is one if any of the variables individual engagement, collaborative engagement, or internal voting is one.
Individual engagement	is one if the type of engagement in *LEA 02.1* of the PRI survey equals "Individual/Internal staff engagements" and the reason for interaction includes any of the following: "To influence corporate practice (or identify the need to influence) on ESG issues", "To encourage improved/increased ESG disclosure", or "Other; specify______"
Collaborative engagement	is one if the type of engagement in *LEA 02.1* of the PRI survey equals "Collaborative engagements" and the reason for interaction includes any of the following: "To influence corporate practice (or identify the need to influence) on ESG issues", "To encourage improved/increased ESG disclosure", or "Other; specify______"
Internal voting	is one if the approach in *LEA 16.1* of the PRI survey equals either "We use our own research or voting team and make voting decisions without the use of service providers." or "We hire service provider(s) that make voting recommendations or provide research that we use to inform our voting decisions."

ESG organizational resources (Panel C)

Sources: PRI surveys from 2013 to 2017, questions from the SG (Strategy and Governance) module of the PRI reporting framework

ESG policy	is one if a PRI signatory has an investment policy that covers her responsible investment approach. We take the answer in SG 01.1 of the PRI survey.
Board ESG involvement	is one if the Board members or trustees of a PRI signatory are involved in the oversight or implementation of responsible investment. We take the answer in SG 07.1 of the PRI survey.
C-suite ESG involvement	is one if the C-suite of a PRI signatory are involved in the oversight or implementation of responsible investment. We take the answer in SG 07.1 of the PRI survey.
Asset manager ESG involvement	is one if the portfolio managers of a PRI signatory are involved in the oversight or implementation of responsible investment. We take the answer in SG 07.1 of the PRI survey.
ESG staff	is one if the PRI signatory has a dedicated ESG staff that is involved in the oversight or implementation of responsible investment. We take the answer in SG 07.1 of the PRI survey.
% ESG employees	is the number of dedicated responsible investment staff divided by the total number of employees. We take the answer in SG 07.4 of the PRI survey.
Other initiatives	is the number of other responsible investment initiatives that the PRI signatory is part of. We take the answer in SG 09.1 of the PRI survey.

Table IA3. Top institutional investors by region

This table shows the top 10 institutional investors by portfolio AUM (as of the end of 2017) at the parent level domiciled for each *Region*. *Signing year* denotes the earliest year where either the parent or any of its entities signed the PRI. The *Parent AUM* and *PRI AUM covg* are the assets under management at the parent level and the proportion of the AUM (in percent) covered by the PRI signature. If *PRI AUM covg* is less than 100%, this means that the signatory committed to the PRI not for its parent but only for one or more of its entities. We calculate an investor's AUM as the sum of the market value of equity holdings for which ESG scores are available.

Parent name	Country	Region	Signing year	Parent AUM	PRI AUM covg
Norges Bank Investment Management	NO	Europe	2006	664 bn	100 %
UBS Group AG	CH	Europe	2009	316 bn	34 %
AXA SA	FR	Europe	2007	239 bn	100 %
BPCE SA	FR	Europe	2008	239 bn	34 %
Deutsche Bank AG	DE	Europe	2008	223 bn	1 %
Janus Henderson Group Plc	GB	Europe	2006	221 bn	9 %
Schroders Plc	GB	Europe	2007	189 bn	100 %
Standard Life Aberdeen Plc	GB	Europe	2007	179 bn	100 %
Amundi	FR	Europe	2006	168 bn	41 %
Legal and General Group Plc	GB	Europe	2010	157 bn	98 %
The Vanguard Group, Inc.	US	North America	2014	2732 bn	100 %
BlackRock, Inc.	US	North America	2008	2619 bn	100 %
State Street Corp.	US	North America	2012	1328 bn	90 %
The Capital Group Cos., Inc.	US	North America	2010	1265 bn	100 %
FMR LLC	US	North America	2017	938 bn	100 %
T. Rowe Price Group, Inc.	US	North America	2010	665 bn	100 %
JPMorgan Chase and Co.	US	North America	2007	491 bn	51 %
Wellington Management Group LLP	US	North America	2012	482 bn	99 %
The Bank of New York Mellon Corp.	US	North America	2006	423 bn	54 %
Northern Trust Corp.	US	North America	2009	384 bn	95 %
Nomura Holdings, Inc.	JP	Asia-Pacific + others	2011	250 bn	52 %
Sumitomo Mitsui Trust Holdings, Inc.	JP	Asia-Pacific + others	2006	141 bn	89 %
FIL Ltd.	BM	Asia-Pacific + others	2012	135 bn	100 %
ORIX Corp.	JP	Asia-Pacific + others	2006	128 bn	32 %
Mitsubishi UFJ Financial Group, Inc.	JP	Asia-Pacific + others	2006	119 bn	45 %
Daiwa Securities Group Inc.	JP	Asia-Pacific + others	2006	59 bn	99 %
Macquarie Group Ltd.	AU	Asia-Pacific + others	2015	57 bn	0 %
Asset Management One Co., Ltd.	JP	Asia-Pacific + others	2013	51 bn	100 %
Commonwealth Bank of Australia	AU	Asia-Pacific + others	2007	43 bn	27 %
Korea National Pension Service	KR	Asia-Pacific + others	2009	38 bn	48 %

Table IA4. ESG strategies by PRI signatory institutional investors

This table compares the ESG strategies of PRI signatories as reported in the PRI surveys from 2013 to 2017. Panel A shows the frequency by which PRI signatories report using negative screening, positive screening, norms-based screening, thematic investment, integration of ESG factors, and engagement strategies. Overall engagement is further broken down into individual engagement, collaborative engagement, and internal voting. The strategies are not mutually exclusive. Panel B provides the frequency by which PRI signatories report having a formal ESG policy, Board involvement in ESG, C-suite involvement in ESG, asset manager involvement in ESG, and having a dedicated ESG staff. The panel also reports the number of ESG employees per total employees and the number of other responsible initiatives that the investor has committed to. Detailed definitions of these variables are available in Table IA2 of the Internet Appendix. The first column of each panel reports the number of investor-year observations.

Panel A: Percentage of PRI signatories that use ESG strategies

	PRI overall									
	Total	**Negative screening**	**Positive screening**	**Norms-based screening**	**Thematic**	**Integration**	**Engagement**	**Individual engagement**	**Collaborative engagement**	**Internal voting**
Overall	2,796	68%	38%	33%	33%	77%	86%	81%	65%	72%
by Year										
2013	442	61%	26%	19%	27%	73%	83%	79%	68%	64%
2014	497	64%	32%	29%	29%	72%	84%	78%	65%	71%
2015	556	70%	38%	30%	32%	76%	87%	81%	62%	74%
2016	625	69%	42%	38%	37%	78%	88%	82%	65%	75%
2017	676	71%	47%	41%	37%	82%	87%	83%	68%	74%
by Region										
Europe	1,379	72%	42%	44%	35%	76%	85%	79%	66%	67%
North America	777	63%	32%	22%	30%	72%	81%	74%	60%	67%
Asia-Pacific + others	640	65%	36%	20%	32%	85%	95%	91%	70%	89%
by Type										
Asset owner	184	51%	18%	38%	15%	72%	91%	86%	76%	84%
Investment manager	2,612	69%	40%	32%	34%	77%	86%	80%	65%	71%
by AUM (USD)										
<1bn	1,202	60%	34%	25%	29%	69%	78%	73%	55%	65%
1-10bn	919	70%	38%	36%	28%	79%	90%	82%	69%	73%
10-100bn	560	77%	46%	40%	47%	89%	94%	92%	78%	82%
>100bn	115	91%	40%	45%	48%	91%	100%	96%	84%	98%

Table IA4. ESG strategies by PRI signatory institutional investors (contd.)

Panel B: ESG organizational resources of PRI signatories

	PRI overall							
	Total	**ESG policy**	**Board ESG involvement**	**C-Suite ESG involvement**	**Asset manager ESG involvement**	**ESG staff**	**% ESG employees**	**Other initiatives**
Overall	2,796	95%	59%	90%	95%	72%	5%	4.6
by Year								
2013	442	89%	55%	78%	93%	66%	3%	4.3
2014	497	94%	59%	90%	96%	72%	4%	4.4
2015	556	95%	58%	94%	95%	74%	6%	4.6
2016	625	97%	59%	93%	96%	73%	6%	4.9
2017	676	97%	63%	93%	94%	72%	6%	4.9
by Region								
Europe	1,379	96%	62%	92%	95%	75%	6%	4.8
North America	777	91%	47%	89%	92%	64%	5%	4.4
Asia-Pacific + others	640	96%	68%	87%	98%	74%	5%	4.6
by Type								
Asset owner	184	97%	84%	96%	91%	79%	2%	6.5
Investment manager	2,612	94%	57%	90%	95%	71%	5%	4.5
by AUM (USD)								
<1bn	1,202	95%	55%	90%	95%	62%	8%	3.7
1-10bn	919	94%	63%	88%	95%	75%	4%	4.5
10-100bn	560	95%	62%	93%	94%	84%	2%	6.3
>100bn	115	94%	61%	97%	97%	92%	1%	7.7

Table IA5. Are the ESG portfolio scores of PRI signatories different by the type and extent of ESG incorporation?

This table regresses portfolio-level ESG scores on different levels of reported ESG incorporation. We split the *PRI: Full ESG incorporation* dummy into four groups based on whether PRI signatories report in the PRI survey that they apply both screening and integration to 100% of their equity AUM (*PRI: Full ESG incorporation, 100% SCR & 100% INT*), screening to 100% of their equity AUM (*PRI: Full ESG incorporation, 100% SCR*), integration to 100% of their AUM (*PRI: Full ESG incorporation, 100% INT*), a mix of ESG strategies to 100% of their AUM (*PRI: Full ESG incorporation, Mix*). Panel A reports the results for the full sample, Panel B for US investors, and Panel C reports for non-US investors. As in Table 3, we control for institutional investor's region, type, and portfolio characteristics. Robust standard errors double clustered at the investor-level and year-level are reported in parentheses. The sample period is from 2013 to 2017. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Full sample

	Dependent variable:			
	Total ESG scores	Environmental scores	Social scores	Governance scores
	(1)	(2)	(3)	(4)
PRI: Full ESG incorporation, 100% SCR & 100% INT	0.07** (0.02)	0.03 (0.02)	0.06** (0.02)	0.06* (0.03)
PRI: Full ESG incorporation, 100% SCR	0.04 (0.04)	−0.01 (0.03)	0.04 (0.03)	0.04 (0.03)
PRI: Full ESG incorporation, 100% INT	0.07* (0.03)	0.03 (0.02)	0.05* (0.02)	0.09** (0.03)
PRI: Full ESG incorporation, Mix	−0.01 (0.05)	−0.04 (0.05)	−0.02 (0.05)	−0.01 (0.06)
PRI: Partial ESG incorporation	0.03 (0.02)	0.02 (0.02)	0.04* (0.02)	−0.02 (0.03)
PRI: No reported ESG incorporation	−0.02 (0.02)	−0.05 (0.02)	−0.00 (0.02)	0.00 (0.02)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	30,511	30,511	30,511	30,511
Adjusted R^2	0.34	0.34	0.30	0.25

Table IA5. Are the ESG portfolio scores of PRI signatories different by the type and extent of ESG incorporation?

Panel B: US institutional investors

	Dependent variable:			
	Total ESG scores	Environmental scores	Social scores	Governance scores
	(1)	(2)	(3)	(4)
PRI: Full ESG incorporation, 100% SCR & 100% INT	0.01 (0.05)	0.01 (0.05)	−0.00 (0.04)	−0.03 (0.05)
PRI: Full ESG incorporation, 100% SCR	−0.10* (0.04)	−0.15* (0.06)	−0.04 (0.06)	−0.05 (0.05)
PRI: Full ESG incorporation, 100% INT	−0.04 (0.05)	−0.04 (0.05)	−0.03 (0.04)	−0.03 (0.03)
PRI: Full ESG incorporation, Mix	−0.12 (0.09)	−0.25* (0.11)	−0.10 (0.08)	0.04 (0.05)
PRI: Partial ESG incorporation	−0.07 (0.05)	−0.08 (0.05)	−0.04 (0.04)	−0.06* (0.03)
PRI: No reported ESG incorporation	−0.12** (0.04)	−0.13** (0.03)	−0.08 (0.04)	−0.04 (0.03)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	17,641	17,641	17,641	17,641
Adjusted R^2	0.34	0.36	0.26	0.15

Panel C: Non-US institutional investors

	Dependent variable:			
	Total ESG scores	Environmental scores	Social scores	Governance scores
	(1)	(2)	(3)	(4)
PRI: Full ESG incorporation, 100% SCR & 100% INT	0.11** (0.03)	0.07** (0.02)	0.10*** (0.02)	0.07 (0.04)
PRI: Full ESG incorporation, 100% SCR	0.14** (0.05)	0.09* (0.04)	0.12** (0.04)	0.09 (0.05)
PRI: Full ESG incorporation, 100% INT	0.04 (0.03)	0.01 (0.02)	0.03 (0.02)	0.03 (0.04)
PRI: Full ESG incorporation, Mix	0.04 (0.05)	0.06 (0.04)	0.03 (0.04)	−0.07 (0.08)
PRI: Partial ESG incorporation	0.06 (0.03)	0.07* (0.03)	0.07* (0.03)	−0.05 (0.04)
PRI: No reported ESG incorporation	0.06 (0.03)	0.03 (0.03)	0.05 (0.03)	0.04 (0.04)
Controls	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	12,870	12,870	12,870	12,870
Adjusted R^2	0.22	0.23	0.18	0.18

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