Why Do Investment Companies Abandon Sustainability?

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April 2023

ABSTRACT

This study examines an international sample of mutual fund companies that delisted themselves from United Nations-supported Principles for Responsible Investment (PRI) but continued to operate. I find that companies delist earlier when they do not realize their expected benefits in improving financial performance and portfolio sustainability scores, especially after being mandated to provide standardized sustainability disclosures. Companies also delist earlier when they have fewer internal resources and less external support for sustainable investment. Based on companies' standardized sustainability disclosures, I find that companies are more likely to delist when they implement weaker management control systems. After delisting, companies allocate more assets towards sin industries and stocks with more ESG controversies. Collectively, these results reveal the non-negligible cost of public sustainability commitments. Therefore, only companies with internal resources and external environment to "do well by doing good" can afford to commit publicly to sustainable investment in the long term.

Keywords: sustainable investment, environmental, social and governance (ESG), Principles for Responsible Investment (PRI), institutional investors, mutual funds, mandatory disclosure regulation, sustainability disclosure standards, management control systems (MCS), real effects.

I am grateful to Jan Bouwens, Alan Jagolinzer, and Rafael Rogo for their continuous guidance. I appreciate Shiva Rajgopal for the after-class discussions at the Limperg Institute which sparked this study, Ranjani Krishnan for feedback on the research proposal in the MAS PhD Mentorship Program, and Mary Barth for thorough advice during her visit to the University of Cambridge. I am grateful to Mikael Homanen for my research visit opportunity at PRI, and to Andrew Wells and Stephen Andrews for access to the proprietary data. I thank Pedro Saffi for access to Morningstar Direct, and Xi Li for access to FactSet during the early stage of this study. I thank members of the Signatory Relations Team and the Reporting & Assessment Team at PRI for sharing first-hand insights. I also thank Anne Beatty, Khrystyna Bochkay, Marion Boisseau-Sierra, Alon Brav, Marco Ceccarelli, Xin Chang, Jenny Chu, Jessica Jeffers, Hwa Young Kim, Andrei Kirilenko, Sarah Kroechert, Bart Lambrecht, Xi Li, Kin Lo, Mehrshad Motahari, Giovanna Michelon, Lakshmi Naaraayanan, James Naughton, Raghu Rau, Jason Tan, seminar participants at University of Cambridge, PRI and University of Amsterdam for helpful comments. I gratefully acknowledge the financial support from Cambridge Judge Business School and Cambridge Endowment for Research in Finance. All errors are my own.

I. INTRODUCTION

Why would investment companies abandon their public commitment to sustainability? This decision appears implausible because this commitment can attract substantial capital regardless of whether promised sustainability or financial outcomes are delivered (e.g., Brandon et al. 2022; Kim and Yoon 2022; Liang, Sun, and Teo 2022). However, in 2022, the closure of ESG funds rose disproportionately compared to conventional funds, and leading investment companies such as Blackrock voted against climate-related shareholder proposals (e.g., Chen 2022; Masters 2022). Motivated by this intriguing phenomenon, this study aims to explain why and when companies abandon their public commitment to sustainable investment.

I address this question in the setting of United Nations-supported Principles for Responsible Investment (PRI), by analyzing the circumstances under which companies delist themselves from PRI, for reasons other than merger, acquisition, or liquidation. PRI signatories commonly cite the mandatory sustainability disclosures, which PRI launched in 2013, as a primary reason for delisting. Hence, I also examine the effect of mandating sustainability disclosures on delisting incentives. Given that PRI signatories' sustainability disclosures are standardized, I further investigate the informational value of reported sustainability information in predicting future delisting decisions. Lastly, I investigate the consequences of delisting to understand how the market reacts to delisting and whether delisting implies any changes in investment performance.

The PRI setting is ideal for answering this question because the PRI signatory status is the most internationally recognized signal for an institutional investor to "*publicly demonstrate its commitment to including environmental, social and governance (ESG) factors in investment decision making and ownership*" (PRI 2022a). Established in 2006, PRI is the world's largest institutional network of sustainable investors, with almost 4,000 signatories managing combined assets of over US$120 trillion at the end of 2021. However, a little-known fact is

that from 2009 to 2021, PRI lost over 1,100 signatories collectively managing assets of US$10 trillion. Given the prevalence of this abandonment phenomenon, there is a need for a systematic explanation so as to build a sustainable global financial system in the long term. Given that PRI introduced mandatory sustainability disclosure standards in 2013, understanding the costs and benefits of this disclosure mandate also provides relevant insights to policymakers for considering adopting similar regulations, such as the Sustainable Finance Disclosure Regulation (SFDR) by European Commission and ESG Investment Product Disclosure by U.S. SEC (European Commission 2022; U.S. SEC 2022).

Informed by previous literature as well as practical insights from PRI employees and signatories, I theorize that the duration of sustainability commitment depends on the realization of expected benefits. Empirical studies consistently suggest three key expected benefits for sustainable investment: improving risk-adjusted returns, attracting capital, and enhancing portfolio ESG performance (e.g., Edmans 2011; De Angelis, Tankov, and Zerbib 2022; Kim and Yoon 2022). However, the extent to which companies can realize these expected benefits is contingent on their internal resources and external environment. Internally, companies need to spend resources to acquire expertise and build management control systems to pursue dual objectives in financial and sustainability performance (e.g., Henri and Journeault 2010; Eccles, Ioannou, and Serafeim 2014; Darendeli, Law, and Shen 2022). Externally, support from PRI should alleviate the costs of practising sustainable investment, while market conditions, especially investor preferences, sentiment, and economic prosperity, influence the relative benefits of capital attraction and return improvement (Naughton, Wang, and Yeung 2018; Pedersen, Fitzgibbons, and Pomorski 2020; Bansal, Wu, and Yaron 2022).

Given the theoretical framework above, what is the relationship between realized benefits and commitment duration? It depends on what motivates companies to commit in the first place. Based on the three visions of corporate social responsibility proposed by Bénabou

and Tirole (2010), if companies are motivated to "do well by doing good", they will stay longer at PRI when risk-adjusted returns improve. On the contrary, if companies only use the PRI signatory status to divert attention from underperformance, they will stay longer when risk-adjusted returns deteriorate. Lastly, if market demand is the reason to sign up for PRI, companies will stay longer when they can attract more fund flows. However, regardless of commitment motivation, all companies are incentivized to improve portfolio ESG performance since PRI signatories are under heightened public monitoring of their sustainability efforts.

This study is based on the construction of a novel dataset. I assemble a monthly panel between 2006–2021 by manually mapping the entire population of PRI signatories categorized as investment managers with the open-end global mutual fund universe. Among PRI signatories, I focus on mutual fund investment companies because they are the targets of public and regulatory scrutiny on greenwashing (e.g., Fletcher and Oliver 2022). The final sample covers 1,280 unique investment companies from 55 countries, including 125 delisted companies as the treatment group and 1,155 companies that stayed in PRI as the control group.

In the primary analysis, I employ a log-logistic accelerated failure time model to estimate the commitment duration, given each company's initial characteristics upon joining PRI and their evolution over time relative to other companies. I find that the commitment duration decreases with the deterioration in risk-adjusted returns, measured by CAPM alpha and Sharpe ratio. I also find that commitment duration shortens with the decrease in portfolio value-weighted average ESG scores, measured together or separately for E, S, and G scores sourced from two leading rating agencies, Refinitiv and MSCI. Robust evidence shows that internal resources and external environment are associated with commitment duration. Companies commit for a shorter period when they manage fewer assets, have not voluntarily provided any standardized sustainability disclosures before PRI's 2013 disclosure mandate, receive less support from PRI, and operate in countries with worse environmental performance

or less progressive social norms. Collectively, these baseline results suggest that a long-term public commitment to sustainable investment can be a signal for companies that are capable of "doing well by doing good" with their internal resources and external environment.

Second, I examine the effects of mandatory standardized sustainability disclosures on delisting decisions. I expect companies that anticipate significant reporting costs to delist from PRI before the mandatory disclosure takes effect to avoid the requirement, resembling companies' avoidance actions ahead of the 2002 Sarbanes–Oxley Act (Engel, Hayes, and Wang 2007; Leuz, Triantis, and Wang 2008; DeFond and Lennox 2011). Given mandatory standardized disclosures are costly for reporting companies, I also expect the delisting decisions to become more sensitive to realized benefits after the disclosure mandate, but to a less extent for voluntary disclosers given their revealed preference (Christensen, Hail, and Leuz 2021). The empirical results are consistent with these conjectures. Hence, this disclosure mandate increases the costs of maintaining a public sustainability commitment, and acts as a catalyst to filter out companies that can "walk their talk".

Third, I analyze the informativeness of mandatory standardized sustainability disclosures, by testing the extent to which reported information predicts future delisting decisions. The answer is *ex-ante* unclear because, on the one hand, the disclosures mandated for PRI signatories focus on management control systems, which theoretically play an important role in achieving dual objectives in sustainability and profits (e.g., Eccles et al. 2014; Flammer, Hong, and Minor 2019). On the other hand, PRI signatories are not required to audit their reports and may have incentives to misreport because PRI grades their reports and provides the grading scheme along with the disclosure standards (Cho, Laine, Roberts, and Rodrigue 2015; Pinnuck, Ranasinghe, Soderstrom, and Zhou 2021). I identify over 100 internal management practices that are compulsory for signatories to report across all years between 2014-2020, then summarize these practices into 17 principal components. Surprisingly, results

show that reported management control practices effectively predict future delisting. Companies are most unlikely to delist if they provide internal training on sustainable investment, internally assure their sustainability disclosures, and assign individual accountability for sustainable investment performance to a specialized department head. Hence, albeit being costly to reporting companies, mandating standardized sustainability disclosures benefits stakeholders with valuable information.

Finally, I look into the consequences of delisting to examine how the market reacts to delisting and whether delisting has any implications for investment performance. This analysis is important to understand whether a public sustainability commitment is merely a label or a binding constraint on investment activities. On average, I find no significant market reaction to delisting within one year. This can be due to the market's lack of delisting information or changes in client base. However, companies start to attract more fund flows from the second year after delisting as their returns improve. The improvement in returns can be explained by changes in portfolio holdings. Delisted companies become "browner" as they allocate more assets towards sin industries and stocks with more ESG controversies.

Overall, the primary contribution of this study is to document the non-negligible cost of public sustainability commitments such as PRI signatory status. Such a public commitment is costly not only due to compliance costs such as membership fees, but also because it imposes a constraint on companies' investment activities. Hence, only companies with internal resources and external environment to "do well by doing good" can afford to maintain their commitment. This article adds to the literature investigating whether companies with a public sustainability commitment "walk the talk", especially the three recent papers focusing on PRI signatories (Brandon et al. 2022; Liang, Sun, and Teo 2022; Kim and Yoon 2022). These three studies point out that companies are likely to use PRI membership as a greenwashing label to attract capital. In contrast, this study suggests that on average PRI membership can be binding,

because signatories that "do well by doing good" stay longer at PRI, whereas those who do not tend to leave PRI and invest more in "dirtier" stocks.

This study also contributes to the nascent literature on integrating sustainability objectives in management control systems. Research in sustainability accounting has focused on disclosure, with limited empirical insights on internal management primarily due to data limitation (Huang and Watson 2015; Joshi and Li 2016; Soderstrom, Soderstrom, and Stewart 2017; Grewal and Serafeim 2020). Recent literature explores specific internal mechanisms to manage corporate social responsibility, such as via executive compensation (Flammer, Hong, and Minor 2019; Ormazabal et al. 2022) and board oversight (Amiraslani et al. 2020; Chu, Li, and Zou 2022). This study documents a positive association between investment companies' long-term public sustainability commitment and managerial accounting practices.

Lastly, this study responds to calls to examine the real effects of mandatory sustainability reporting standards, particularly to directly document reporting companies' usage of market exit as a strategy to avoid regulation (Christensen et al. 2021). Existing evidence on companies' withdrawal decisions in response to sustainability disclosure standards is indirect and limited to specific elements of ESG information (Jouvenot and Krueger 2019; Rauter 2020). This study documents spikes in PRI signatories' delisting, which are largely attributable to PRI's standardized sustainability disclosure mandate. This disclosure mandate increases the costs of maintaining the PRI signatory status to the extent that signatories' delisting decisions become more sensitive to their realized benefits. On the flip side, the added costs help screen out companies that are more capable of improving both financial and sustainability performance. While Bochkay, Hales, and Serafeim (2021) find voluntary ESG disclosure standards work as a coordinating device, I suggest that mandating sustainability disclosure standards benefits stakeholders with valuable information, notwithstanding freedom and incentives to misreport.

II. INSTITUTIONAL BACKGROUND AND THEORETICAL DEVELOPMENT

Principles for Responsible Investment

Principles for Responsible Investment (PRI) is a global network of sustainable investors that was launched in 2006 by the United Nations Environment Programme Finance Initiative and United Nations Global Compact to foster a sustainable global financial market. To date, PRI is the world's leading institutional network of sustainable investors, with all but one of the world's top 50 investment companies being signatories (SquareWell 2021).

Joining PRI is straightforward, and any organization qualified as an asset owner, investment manager, or service provider can apply by submitting an application form and paying an annual fee. The annual fee has been mandatory since 2011 and is scaled based on the signatory's size. There is no admission criteria regarding experience or expertise in sustainable investing, because PRI adopts a "big tent" approach that welcomes signatories of all types to facilitate collective actions and peer learning (PRI 2021).

Upon joining the network, signatories can receive tailored support from their local relationship managers and access rich resources on the PRI platform. The level of support available to each signatory depends on its service tier, which is assigned based on the signatory's size and strategic importance to PRI.[1]

Signatories are obliged to fulfill their commitment to the six responsible investment principles, which include annual disclosure of their sustainable investment practices. PRI also encourages signatories to report voluntarily during the initial reporting cycle or grace period.[2]

[1] For example, signatories from regions less advanced in sustainable development such as Latin America are assigned to a higher service tier compared to signatories of the same size from Europe. Signatories affiliated with the local government generally sit on the highest service tier.

[2] Each reporting cycle starts at the beginning of January and ends by 31st March, except for the initial reporting cycle for 2014 reports which began from 1st October 2013. Signatories that joined before 24th May 2012 must participate in the first cycle. Reports are published for public access around July following each reporting cycle.

Signatories that have been signed up to PRI for more than one reporting cycle must disclose their sustainable investment practices annually following a standardized framework. The mandatory disclosure standards were first released for public consultation in 2011 and launched in 2013. Between 2007 and 2011, signatories could voluntarily disclose their sustainable investment practices in a standardized format using PRI's annual survey.

Signatories are assessed annually based on their standardized disclosures and are required to comply with the three mandatory requirements - annual fee, standardized disclosures, and minimum requirements.[3] Signatories that fail to comply are engaged by PRI and are subject to delisting if engagement proves unsuccessful. Delisting requests are automatically approved one week after submission, and PRI records the delisting approval date as the formal delisted date and discloses delisted organizations in annual reports since 2013.

It is worth noting that signatories often proactively request to delist during the engagement process rather than wait to be removed by PRI. However, signatories seldom announce their withdrawal from PRI, and many continue to claim their dedication to sustainable investing on their websites after leaving PRI.

Reasons to Abandon a Public Sustainability Commitment

Based on prior literature as well as first-hand experiences shared by PRI employees and signatories, the duration of companies' public commitment to sustainable investment is likely to depend on their realization of expected benefits, subject to their internal resources and external environment. Empirical studies consistently suggest three expected benefits for sustainable investment: (1) improving risk-adjusted returns (e.g. Fornell, Mithas, Morgeson III, and Krishnan 2006; Edmans 2011; Flammer 2015), (2) attracting capital (e.g., Bollen 2007;

[3] The minimum requirements in 2018-2020 are: (1) overall responsible investment policies or specific policies on environmental, social and governance factors that cover at least 50 percent of assets under management, (2) senior-level oversight of responsible investment, (3) implementation of responsible investment by internal or external staff. The minimum requirements will be raised in the coming years (PRI 2022b).

Hartzmark and Sussman 2019; Ceccarelli, Ramelli, and Wagner 2021; Liang, Sun, and Teo 2022; Kim and Yoon 2022), and (3) enhancing portfolio ESG performance (e.g., Curtis, Fisch, and Robertson 2021; Heath et al. 2021; Naaraayanan, Sachdeva, and Sharma 2021; De Angelis, Tankov, and Zerbib 2022).

However, realizing these benefits requires significant internal resources, including expertise and management control systems (e.g., Henri and Journeault 2010; Eccles, Ioannou, and Serafeim 2014; Darendeli, Law, and Shen 2022). Otherwise, if their internal infrastructure does not allow them to pursue sustainability outcomes without sacrificing investment value, companies may underperform or greenwash (e.g., Liang and Renneboog 2020; Li, Naaraayanan, and Sachdeva 2021; Michaely, Ordonez-Calafi, and Rubio 2021).

The external environment is also critical in realizing the expected benefits. External support from PRI may help alleviate internal costs. Importantly, the benefits obtainable from sustainable investment are contingent on market conditions (Liang and Renneboog 2017; Dyck, Lins, Roth, and Wagner 2019; Brandon et al. 2021), specifically investor preferences (Pedersen et al. 2020), investor sentiment (Naughton et al. 2018), and economic prosperity (Bansal, Wu, and Yaron 2022). Companies in developing economies, where the public does not appreciate corporate social responsibility, may have limited benefits of flow attraction.

The initial motivation for committing to sustainability is crucial to understand the relationship between commitment duration and realized benefits. Bénabou and Tirole (2010) propose three visions for corporate social responsibility, which are coherently documented by field surveys (Amel-Zadeh and Serafeim 2018; Krueger et al. 2020; BNP Paribas 2019; BlackRock 2020). These three visions are (1) “doing well by doing good”, (2) delegated philanthropy or market demand, and (3) insider-initiated corporate philanthropy. Applying this three-vision framework, companies motivated by "doing well by doing good" are likely to maintain their commitment for longer when risk-adjusted returns improve. Those incentivized

to satisfy market demand would maintain their commitment if it helps with attracting fund flows. In contrast, neither return nor flow would serve as a significant decision factor for the commitment if companies are motivated by ethical considerations, because they are more willing to sacrifice financial performance for an environmental or social impact (Riedl and Smeets 2017; Barber, Morse, and Yasuda 2021; Bauer, Ruof, and Smeets 2021). Further, companies that use the commitment to explain poor investment performance are likely to commit for longer when risk-adjusted returns deteriorate. All companies expect to enhance their portfolio ESG performance as this commitment puts their sustainable investment performance under heightened public scrutiny.

Costs and Benefits of Mandatory Sustainability Reporting Standards

To date, there is little empirical evidence on the real effect of mandatory sustainability reporting *standards* due to data limitation. However, insights can be gleaned from studies that examine mandatory sustainability disclosure *regulation* or mandatory *financial* reporting standards.

Overall, mandating standardized sustainability disclosures may impose significant costs on reporting companies, particularly those that are forced to initiate sustainability disclosures following the regulation (Christensen et al. 2021). These companies may need to establish information infrastructure, which can be a costly and time-consuming process. Companies with insufficient progress in implementing sustainable investment may face even higher costs as standardized disclosures can reveal their inferior performance. In extreme cases, signatories that anticipate significant reporting costs are expected to delist from PRI before the mandate's implementation to avoid the requirement, parallel to companies' deregistration decisions in response to costly financial regulations such as the 2002 Sarbanes–Oxley Act (Engel et al. 2007; Leuz, Triantis, and Wang 2008; DeFond and Lennox 2011). However, voluntary disclosers may face lower costs since they already possess existing information infrastructure and have

shown a preference for standardized disclosures (Bushee and Leuz 2005; Daske et al. 2013; Grewal, Riedl, and Serafeim 2019). Therefore, I expect companies' sustainability commitment duration to become more sensitive to their realized benefits after the 2013 disclosure mandate, but to a less extent for companies that have voluntarily disclosed sustainable investment practices based on PRI's surveys between 2007 and 2011.

Despite being costly to reporting companies, mandatory disclosure standards can benefit stakeholders by improving transparency and enabling differentiation between companies with superior practices and others (e.g., Hartzmark and Sussman 2019; Darendeli et al. 2022). These benefits may exist even if the standards do not increase the quantity or quality of information (Brochet, Jagolinzer, and Riedl 2013; De George, Li, and Shivakumar 2016). Furthermore, the disclosure mandate for PRI signatories focuses on internal management control systems, which play a crucial role in achieving sustainability and financial outcomes (e.g., Henri and Journeault 2010; Eccles, Ioannou, and Serafeim 2014; Flammer, Hong, and Minor 2019; Amiraslani et al. 2020; Chu, Li, and Zou 2022; Ormazabal et al. 2022).[4] Nevertheless, sustainability disclosures are often unreliable, especially without external assurance requirements, as in PRI's case (Pinnuck et al. 2021). PRI's grading scheme for signatories' disclosures may also incentivize misreporting, making it unclear whether standardized sustainable investment disclosures contain valuable information to predict future delisting decisions (Cho et al. 2015).

III. DATA

The full list of organizations signed up to PRI from PRI's establishment in April 2006 to December 2021 was provided by PRI. This list is proprietary and contains information regarding each organization's name, location, website, signatory category, signatory service

[4] A detailed description of the information required by PRI's mandatory sustainability disclosure standards is provided in Section 3.3 and Figure 3.

tier, annual fee band, signature date, delisting date, and reported reason for delisting. Based on the reported delisting reasons, I categorize delisted organizations into two types: those related to corporate restructuring reasons, such as mergers, acquisitions, and liquidations, and others. Among the three signatory categories, I focus on the investment manager signatories because they are the targets of regulatory and public scrutiny on greenwashing (European Commission 2019; Fletcher and Oliver 2022; U.S. SEC 2022), and refer to them as investment companies for brevity.

Population Delisting Statistics

In Table 1 Panel A, I present the delisting frequency of signatories across three categories and two delisting types. About 20% of signatories have left PRI, with 70% of departures not related to corporate restructuring. The majority of signatories (73%) are investment companies, with 723 (17%) investment companies delisting by 2021, among which 470 (11%) departed for non-restructuring reasons. In Table 1 Panel B, I summarize reported delisting reasons for non-restructuring delisting. The most frequently cited reasons are the annual fee, lack of resources, irrelevance of PRI, and mandatory reporting. [5] Because companies delisted for restructuring reasons terminated their signatory status due to business discontinuation rather than concerns over sustainability commitment, I exclude them in the following analyses.[6] Hence, in the following analyses, this study will focus on companies delisted for non-restructuring reasons.

Figure 1 displays the yearly signing and delisting trend of all investment companies from 2006 to 2021. The number of investment companies signed up to PRI increased steadily

[5] Although it is possible to further classify non-restructuring departures as either voluntary when companies actively asked to leave or involuntary when they "voted with their feet" by refusing to pay or report, I do not distinguish between them as both have chosen not to fulfil their responsible investment commitment, regardless of methods used.

[6] Most companies delisted due to restructuring reasons were merged with another signatory, hence *de facto* stayed in PRI.

during the first decade and grew exponentially from 2016. However, the number of delisted companies has accumulated linearly since 2009. Delisted signatories are relatively small, with about one in eight investment companies leaving by the end of 2021 and taking away US$526 billion, which accounts for 0.4% of remaining PRI signatories' assets under management.

Figure 2 illustrates the occurrence of delisting across different economies. Panel A shows that the United States has the highest number of delisted investment companies (104), followed by the United Kingdom (48) and Australia (40). However, in terms of the likelihood of delisting, Panel B reveals that companies headquartered in Turkey (60%), the Republic of Korea (42%), Vietnam (40%), Brazil (29%), and New Zealand (28%) are the most likely to leave among countries with at least five signed investment companies. This disparity in delisting prevalence across various economies highlights the significance of studying this delisting phenomenon on a global scale.

Sample

To create the study sample, I manually match the 4,242 investment manager signatories to open-end mutual funds in Refinitiv and Morningstar survivorship-bias-free databases. Open-end mutual funds are preferred for this study because their market preferences can be observed via fund flows I include active and passive funds because both play an important role in sustainable investment, with the latter gaining market share over the years (Morningstar 2021; 2022).[7] However, including passive funds may introduce bias against finding results on risk-adjusted returns since they do not seek to outperform. 76 duplicated signatories are identified during the mapping process as they re-joined PRI using alternative names. I match signatory to individual funds but not fund families because it is common that subsidiaries within the same

[7] According to Morningstar, index funds account for 22.5 percent by assets under management of the sustainable fund market in the EU as of 2020, and 40 percent in the US as of 2021.

fund family signed to PRI separately and some delisted. The mapping is primarily executed using the FuzzyWuzzy Library in Python and further manually inspected for accuracy.

As shown in Table 2, 1,669 unique signatories are identified as mutual fund companies, including 209 delisted companies as the treatment group and 1,460 companies that stayed in PRI as the control group. Eighty-four delisted signatories are dropped as they left for restructuring reasons. Because all delisted signatories joined PRI before 2021, I follow Bharath and Dittmar (2010) to limit the control group to companies signed up before 2021. The final sample consists of 1,280 investment companies, including 125 delisted and 1,155 "stayed" signatories.

Table 3 Panel A shows that the delisting rate fluctuated over the years, peaking in 2011 when PRI released the first draft of the mandatory sustainability disclosure standards for public consultation. In addition, companies that signed up earlier are more likely to have delisted by 2021. Table 3 Panel B shows the distribution of signatories across countries with at least five signatories covered in the sample. The United States has the largest number of signatories and the highest delisting frequency. Brazil, Mexico, and South Africa have the highest delisting rates.

Empirical Measures

Financial Characteristics

All data on financial characteristics are collected from Morningstar at the mutual fund share class level. To measure financial performance, I obtain monthly fund flows, and two proxies for risk-adjusted returns, Capital Asset Pricing Model (CAPM) alpha and Sharpe ratio. To aggregate fund flows to the signatory level, I follow the methodology by Nanda, Wang and Zheng (2004) as follows:

$$Flow_{s,t} = \frac{\sum_{i=1}^{n}[TNA_{i,t} - TNA_{i,t-1}(1 + R_{i,t})]_{i,t}}{\sum_{i=1}^{n} TNA_{i,t-1}}, \quad (1)$$

where $TNA_{i,t}$ and $R_{i,t}$ are the total net assets and total return net of expenses of fund share class i in month t, and n is the total number of mutual fund share classes managed by signatory s in month t.

Signatory-level risk-adjusted returns are calculated as the monthly value-weighted average alpha or Sharpe ratio in all share classes of funds managed by each signatory:

$$Risk-adjusted\ Return_{s,t} = \frac{\sum_{i=1}^{n} Risk-adjusted\ Return_{i,t} TNA_{i,t}}{\sum_{i=1}^{n} TNA_{i,t}} \quad (2)$$

where $Risk-adjusted\ Return_{i,t}$ is the rolling-average CAPM alpha or Sharpe ratio over the prior three years computed as follows:

$$Alpha_{i,t} = \frac{1}{36}\sum_{t=1}^{36}\left(R_{i,t} - Rf_t\right) - \frac{Cov(R_{i,t}, Rm_t)}{Var(Rm_t - Rf_t)}\frac{1}{36}\sum_{t=1}^{36}(Rm_t - Rf_t) \quad (3)$$

$$Sharpe_{i,t} = \frac{\frac{1}{36}\sum_{t=1}^{36}(R_{i,t} - Rf_t)}{\sqrt{\frac{1}{35}\sum_{t=1}^{36}(R_{i,t} - \bar{R}_i)^2}}, \quad (4)$$

where Rf is the three-month US treasury-bill rate, and Rm is proxied by the monthly return of the S&P 500 index.

$Return(Expense)$ is aggregated to the signatory level similarly as the risk-adjusted returns. $Size$ is the natural logarithm of one plus the sum of total net assets across all share classes of funds managed by each signatory every month.

Portfolio ESG Performance

To measure signatories' portfolio ESG performance, signatories' fund-level holdings from FactSet are merged with firm-level ESG scores from two leading rating agencies—Refinitiv and MSCI—to compute each signatory's monthly value-weighted average portfolio ESG scores.[8] All ESG data from Refinitiv was downloaded in a single batch via EIKON API

[8] I do not examine proxy voting records or direct shareholder engagements because only a handful of institutional investors, mainly the leaders in sustainable investing, take active ownership strategies (Dimson, Karakaş, and Li 2021; He, Kahraman, and Lowry 2020; Dikolli, Frank, Guo, and Lynch 2022).

to avoid score modification due to updates in methodology (Berg, Fabisik, and Sautner 2020). Refinitiv is the preferred ESG data source as it offers ESG ratings that cover the entire study period from 2006.[9] In comparison, all other prominent ESG rating agencies, including MSCI, did not start their service until 2007. However, MSCI has the advantage of more frequent monthly updates, whereas Refinitiv rates companies yearly. Considering the common concern that ESG data providers may adjust their rating methods over time, I follow Raghunandan and Rajgopal (2022) to demean the ESG scores yearly for Refinitiv and every month for MSCI. Signatory-level portfolio ESG scores are computed as the value-weighted average ESG scores of individual firms in their portfolio:

$$ESG\ Score_{s,t} = \sum_{j=1}^{m} W_{s,j,t} ESG\ Score_{j,t}, \tag{5}$$

where $W_{s,j,t}$ denotes the value weight of firm j of signatory s in month t, and m is the number of firms held by signatory s in month t. $ESG\ Score_{j,t}$ refers to the demeaned sustainability ratings of company j in month t from Refinitiv or MSCI in one of the following categories: $ESG\ Score$, $E(nvironmental)\ Score$, $S(ocial)\ Score$, or $G(overnance)\ Score$.

Country Characteristics

To measure general market preferences for sustainable investment, I follow Dyck et al. (2019) to use the country-level environmental and social norms from the Yale Environmental Performance Index (EPI) and the World Values Surveys (WVS) respectively. EPI gathers data on national policies in tackling environmental issues (Wolf et al. 2002). EPI does not rate countries continuously yearly but provides time-series raw indicators between 1995–2020. Hence, I manually construct countries' yearly EPI following its 2020 methodology. WVS conducts surveys every five years to study changing social values worldwide between 1981 and 2022 (Inglehart et al. 2022). I measure social norms as the emancipative index developed

[9] Refinitiv offers times series ESG metrics dated back to 2002.

by WVS, which is based on four social norms indicators:(1) lifestyle liberty, (2) gender equality, (3) personal autonomy, and (4) voice of the people. Because EPI is highly correlated with social norms (coef. = 0.75, $p < 0.01$), EPI and social norms load on a single principal component, which I use as a proxy for environmental and social norms. [10]

To measure the prosperity of signatories' local economy and capital market, I follow Doidge, Karolyi and Stulz (2009) to use the gross domestic product (GDP) and the market capitalization divided by GDP from the World Bank World Development Indicators database.

Signatory Characteristics

To measure the level of support provided by PRI, I use $Service\ Tier$, which is divided into three tiers.[11] Tier 1 signatories have frequent discussions with PRI at least every quarter, direct involvement from the top management team, and receive tailored plans and progress tracking for implementing sustainable investment. In contrast, PRI only engages Tier 3 signatories on an ad hoc basis, typically once a year. $Service\ Tier$ generally remains constant over the years.

In addition to signatory size, I identify signatories with voluntary sustainability disclosures between 2007-2011 as those with richer internal resources for sustainable investment, and manually collect their names via Wayback Machine. There are 175 voluntary disclosers in the investment company population, with 87 being covered in the study sample.

Reported Sustainable Investment Practices

Reported sustainable investment practices are collected from PRI signatories' mandatory standardized sustainability disclosures. Figure 3 Panel A illustrates PRI's 2020 disclosure standards as an example. Modules presented in darker shading are compulsory for

[10] Both social norms and EPI are almost collinear with wealth measured by GDP per capita and legal environments such as the rule of law.

[11] An alternative proxy for PRI support used by prior literature is location of PRI office (Humphrey and Li 2021). However, according to PRI employees, proximity between a signatory and a PRI office does not relate to support level because not all offices have signatory relationship managers, with some offices being only responsible for policy analysis, and signatories are often supported remotely.

all, whereas modules in lighter shading are only for companies that hold assets in specific classes above a certain threshold. Reports in the previous six years follow a similar framework, except that the Climate Change module was introduced in 2018 and was optional until 2020.[12] This study uses reported information up to 2020, because new standards were introduced in 2021, for which reports are not released publicly until after the sample period. Among the modules, this study focuses on the Strategy and Governance module as it is the only module that is mandatory for all signatories in all years.

Figure 3 Panel B lists the indicators required in the Strategy and Governance module, among which the ones in darker shading are mandatory and the rest voluntary. These indicators cover specific practices in signatories' management control systems for sustainable investment, including target setting, individual accountability, performance management, incentive contracts, and information assurance. Figure 3 Panel C provides an example indicator in the Strategy and Governance module, which is about the frequency of setting and reviewing sustainable investment targets. As can be seen from the comparison between the 2020 and 2014 standards, the specific questions and available choices can change over the years. Therefore, I first manually map all the frameworks to identify equivalent questions in all years, then collect signatories' answers and code them into binary variables based on the broadest categories available.[13] Responses are gathered from all reports, including voluntary reports from the grace years and private reports. More than 100 binary variables are extracted from which 18 principal components are summarized, representing the following information: (1) policies to implement sustainable investment; (2) policy coverage; (3) target review frequency; (4) individual accountability; (5) performance management and incentive contracts; (6) promoting

[12] All reporting frameworks from 2014 to 2020 are publicly available on PRI's online Reporting & Assessment Archive: https://www.unpri.org/reporting-and-assessment/reporting-and-assessment-archive/6567.article

[13] Using the example provided in Figure 3 Panel C, I collect signatories' responses to question SG 05.1 in 2020, OA 05.2 in 2014 and equivalent questions in other years, then code the response as one if the company sets or review their sustainable investment objectives at least once per year, and zero otherwise.

sustainable investment and policy engagement; and (7) information assurance. Detailed definitions for all variables are in the Appendix.

Descriptive Statistics

Table 4 presents the descriptive statistics for investment companies during their time in PRI. Panel A compares the means of all variables between 125 delisted and 1,155 "stayed" signatories. Compared to delisted companies, "stayed" companies on average enjoy a higher Sharpe ratio, charge lower fees, manage more assets, and hold portfolios with higher ESG scores. Market condition matters, as delisted companies generally are based in economies with less progressive social norms and environmental policies. The delisted companies sit on a lower service tier, pay fewer annual fees, and stay in PRI for six years compared to ten years by companies that never leave PRI. Strikingly, almost all reported sustainable investment practices are significantly better for the "stayed" companies. In addition, companies that have voluntarily reported during their grace period are more likely to stay.

Panel B compares delisted and "stayed" signatories before and after the disclosure mandate in October 2013. There is a remarkable difference among financial variables. Before the mandate, there is no significant difference between "stayed" and delisted signatories in terms of flows, and delisted companies earn a much higher alpha than "stayed" companies. However, after the mandate, "stayed" companies experience better financial performance in every aspect, including flows, alpha, Sharpe ratio, and returns. Further, voluntary disclosers between 2007 and 2011 are much less likely to delist after but not before the mandate.

IV. METHODS AND RESULTS

Accelerated Failure Time Model

Survival analysis is the most suitable method to approach the research question for three reasons. First, as shown in Figure 4 Panel A, the tenure of delisted companies in PRI does not

follow a normal distribution, which violates the assumptions of linear models. Second, the length of time a company joins PRI is crucial in evaluating delisting risk, which is not considered by generalized linear models such as logistic regressions. Third, we can only observe whether companies delist by the end of 2021, and companies may not be observed exactly during the months when they delist. These two concerns of right and interval censoring can be well handled by parametric survival analysis (Cleves, Gould, Gould, Gutierrez, and Marchenko 2010). In comparison, the semi-parametric Cox hazard model, which is more common in the accounting and finance literature (e.g., Bharath and Dittmar, 2010), cannot efficiently deal with interval truncation because it relies on information at times when failures occur.

Figure 4 Panel B portrays the hazard function of delisting over time in the nonparametric analysis. The hazard rate increases steeply upon signing and reaches a peak in the third year, then gradually decreases to a plateau from the tenth year. A hazard model that approximates this shape is the log-logistic accelerated failure time (AFT) model, which offers additional benefits of robustness towards omitted variables compared to proportional hazard (PH) models (Hougaard 1999; Greene 2019). This AFT model takes the form: [14]

$$\ln(T_i) = \alpha + \beta \boldsymbol{X_i} + \varepsilon_i \,, \tag{6}$$

where T_i is the number of months until a signatory delists, or equivalently the commitment duration. $\boldsymbol{X_i}$ is a vector of time-varying covariates that measure companies' realization of expected benefits, internal resources and external environment for sustainable investment, β is the coefficient vector to be estimated. Consequently, this model tracks each signatory to estimate its expected duration of commitment, given its initial characteristics upon joining PRI

[14] Although recognizing the shortcomings of the semi-parametric model, the Cox model is still used for robustness checks as it does not impose any structure on the hazard function. Results are highly similar to those estimated by parametric models; however, the AIC and BIC are significantly larger. This suggests that imposing a log-logistical structure improves estimation efficiency without distorting the estimates.

and their evolution over time relative to other signatories. The β coefficients represent the percentage change in the time until delisting for a one-unit change in the covariates.

Signatories may rejoin after delisting or delist more than once. In the sample, 31 delisted signatories rejoined, of which 27 stayed since the second listing, and one stayed after the third listing.[15] To focus on why signatories delist, I exclude observations where delisted signatories ultimately rejoined and stayed. The AFT model is set to allow multiple delisting per company.

Determinants of Delisting

Table 5 presents the baseline results on the determinants of delisting. The results support the conjecture that companies pursue public sustainability commitments to "do well by doing good". Panel A shows that higher risk-adjusted returns, measured by alpha and Sharpe ratio, delay delisting. A one-unit increase in alpha is associated with a 16 percent increase in time until delisting, or about one year. However, fund flows do not explain the delisting timing. Columns (1)–(8) provide robust evidence that companies delist later if they have voluntarily published standardized sustainability disclosures, manage more assets, and receive more support from PRI. Moreover, longer commitment durations are associated with companies based in countries with better environmental policies and progressive social norms. Market prosperity, however, does not appear to play a role in determining the delisting timing.

Panel B focuses on the effects of portfolio ESG performance. Despite the divergence between different ESG rating agencies, I observe robust evidence that companies with increasing portfolio ESG scores, either measured separately for environmental, social and governance performance or combined, are likely to stay in PRI for longer. One-level increase in portfolio ESG scores lengthens the commitment duration by around two months to two years. Given the high correlation between the $Social\ Norm$ and EPI, only results for the combined

[15] At the population level, 54 investment companies re-joined after delisting for the first time, among which 43 stayed after the second listing, and one stayed after the third listing.

measure are tabulated.[16] The coefficients on the country-level environmental and social norms are not significant, indicating that exhibiting better portfolio ESG performance matters more than market-level environmental or social status in deciding whether to drop a public sustainability commitment.

In summary, the baseline results suggest that companies are more likely to abandon a public sustainability commitment when they fail to realize expected benefits, have fewer internal resources and receive less external support. Improvement of risk-adjusted returns and portfolio ESG scores significantly delays delisting, indicating that companies, on average, join PRI with the hope of "doing well by doing good". Consistent with Gantchev, Giannetti and Li (2022), these results suggest that investment companies pursue sustainability efforts only if they benefit financial performance.

Effects of Mandatory Standardized Sustainability Disclosures on Delisting

Investment companies that publicly commit to sustainability may choose to delist from PRI to avoid the significant costs associated with standardized sustainability disclosures. In this study, I use a similar model to Leuz et al. (2008) to test the effect of mandatory sustainability disclosure standards on delisting frequency:

$$Delisting\ Frequency_t = \alpha + \beta Event_t + \gamma Controls_t + \varepsilon_{i,t} \quad (7)$$

where the dependent variable is the monthly delisting frequency, while $Event_t$ indicates months when the disclosure standards were released, finalized, and launched. As Table 1 Panel B shows that the mandatory fee is the most cited reason for delisting, I also examine the months when the mandatory fee was first announced and invoiced for reference.[17] To control for the market sentiment in joining PRI, I include either the number of new companies joined in the

[16] Results on Social Norm or EPI are highly similar to their combined measure.
[17] Additionally, as recorded in PRI's internal confidential meeting memo, during the preparation stage before introducing mandatory fees and reporting framework, PRI was aware and concerned that a substantial proportion of signatories might leave upon announcing the rules.

past year or the total signatories at the end of the prior month. In addition, I control for the general market evolvement over time using a monthly time trend variable. For robustness, I perform a placebo test by replacing the dependent variable with the number of delisted companies every month due to restructuring reasons.

Results in Table 6 document spikes of delisting around months when PRI introduced mandatory disclosure and fees. The release of the first mandatory disclosure standards for public consultation between September and October 2011 is associated with the highest delisting frequency, when approximately ten additional investment companies delisted per month. This effect is even higher than when PRI announced the first mandatory fee (F=6.68, p=0.02, untabulated). Approximately three additional investment companies left every month between September 2012 and September 2013 when PRI extensively consulted signatories to finalize the disclosure standards. Since launching the standards in October 2013, more than two additional investment companies left every month. I do not observe this pattern for the placebo group where signatories delisted for restructuring reasons. This result suggests that companies anticipating significant costs of providing standardized sustainability disclosures may delist before the mandate takes effect to avoid this requirement.

Change in Delisting Determinants After Standardized Sustainability Disclosure Mandate

Given the significant costs of the disclosure standards, I then test whether companies' delisting determinants change after PRI launched the disclosure standards in October 2013. As shown in Table 7 Panel A, neither financial performance nor portfolio sustainability scores explain the timing of delisting before October 2013. In contrast, after October 2013, signatories' commitment duration is positively associated with increases in alpha, Sharpe ratio, fund flows and portfolio ESG scores. Combined with the descriptive statistics in Table 4 Panel B, the results are consistent with the contemporaneous evidence that standardized disclosures widen the gap in fund flows among signatories (Ceccarelli et al. 2022), hence fund flows only play a

significant role in deciding the delisting timing after the disclosure mandate. Across all models, voluntary disclosers stay longer after the mandate but not before.

To understand how mandatory disclosures affect voluntary disclosers differently, I further interact the indicator variable for voluntary disclosers with financial performance and portfolio ESG scores. Results are shown in Table 7 Panel B. Voluntary disclosers are less likely to leave due to deterioration in alpha, fund flows, or portfolio ESG scores after the mandate. In untabulated analyses, I find that none of the pairs of each performance variable and its interaction term is jointly significant, suggesting that voluntary disclosers' delisting decisions are not based on their realization of expected benefits. This result is consistent with the conjecture that these companies commit to sustainability as insider-initiated philanthropy, for which profit maximization is not the objective (Bénabou and Tirole 2010).

Collectively, these results suggest that mandating standardized sustainability disclosures entails significant costs for companies to the extent that companies may take avoidance actions. The mandate adds to the cost of PRI membership, hence increases the sensitivity of delisting decisions to the realized benefits, but not for companies that have voluntarily provided standardized sustainability disclosures before. Nevertheless, I do not attribute the documented effect entirely to the mandate because it is difficult to disentangle the impact of any regulation from other confounding events (Leuz and Wysocki 2016).

Informativeness of Reported Sustainable Investment Practices

Earlier descriptive statistics in Table 4 highlight the significant differences in the reported sustainable investment practices from delisted and "stayed" signatories. Given the stickiness of reported information over time, I use a logit model to test how the reported differences are associated with the probability of staying in PRI:

$$\Pr(Maintain\ Commitment)_i = \alpha + \beta \mathbf{X}_{i,t} + \gamma \mathbf{Z}_i + \eta_t + \varepsilon_{i,t} \quad (8)$$

where the dependent variable equals one if the company never delists from PRI or zero otherwise. $\mathbf{X}_{i,t}$ is a vector of time-varying covariates that represent each signatory's reported sustainable investment practices and size in year t. $\boldsymbol{Z}_i$ is a vector of time-invariant controls including each signatory's service tier, headquarter region, and an indicator variable $Voluntary\ Reporter$, which equals one if the company voluntarily reports during its grace period. η_t refers to the year fixed effect. For reference, I also employ an AFT model to analyze the relevance of changes over time.

Results reported in Table 8 suggest that companies are more likely to maintain their commitment if they implement more comprehensive management control systems for sustainable investment. When all the sustainable investment practices are tested in the same model, the three practices that have the highest predictive power for future delisting are: (1) provision of sustainable investment training; (2) usage of internal assurance; and (3) individual accountability of a specialized department head. Robust evidence across columns (1) to (8) shows that companies that manage more assets, sit on a superior service tier, and have reported voluntarily during the grace year are more likely to stay. The same pattern is observed when I examine the subsample of public reports, hence results are untabulated. Estimates based AFT model are largely similar except for two noticeable differences. First, the expected commitment duration significantly increases with improvement in policy coverage and individual employee accountability, likely because these two indicators have been classified as the minimum requirements for PRI signatories from 2018. Second, internal assurance and voluntary reporting become insignificant in relation to the committed duration, potentially because these two indicators rarely change over time.

Overall, these results indicate that mandatory standardized sustainability disclosures have informational value in predicting future delisting decisions. This inference applies even when companies are not required to assure their reports and incentivized to misreport.

Importantly, companies with weaker management control systems for sustainable investment are more likely to abandon their sustainability commitment.

Consequences of Delisting

Lastly, I investigate the market reaction and performance changes following delisting. To alleviate the concerns for omitted variable bias, I conduct the consequence analyses for both the delisted sample and also a matched sample consisting of 59 delisted and 250 "stayed" signatories with the same signature year, headquarter region, service tier and fee band which approximates the amount of assets under management.

To examine the market reaction, I follow Bris, Gulen, Kadiyala and Rau (2007) to conduct an event study of monthly fund flows between one year before and after the delisting month. In addition to raw flows, I also compute excess flows in respect of the average flows of the matched control group.[18] The results are reported in Table 9 Panel A. On average, investors do not withdraw capital from delisted signatories. Instead, the gap in fund flows narrows down compared to the control group, from a significant negative six percent in the six months before delisting to an insignificant two percent in the six months afterward.[19] This result goes against prior studies, which generally find that companies attract significant capital upon joining PRI (Brandon et al. 2022; Kim and Yoon 2022; Liang, Sun, and Teo 2022), and may be due to lack of delisting information in the market or changes in client base.

To analyze performance changes after delisting, I analyze the evolvement in financial and portfolio ESG performance in three years before and after the delisting for the delisted sample and the matched sample, respectively based on models (9) and (10) below. I adopt a

[18] For robustness, I also calculate the excess flows benchmarked to the median flows of the matched control group. The results are highly similar.

[19] Considering that signatories may not publicize their delisting decisions, in untabulated analyses I also examine the raw and excess fund flows around the months when PRI publishes its annual reports where signatories delisted during each reporting year have been disclosed since 2013. Results are qualitatively the same.

relatively longer horizon to analyze performance changes because it takes time for companies to adjust portfolio holdings and ESG scores are sticky over time.

$$Performance_{i,t} = \alpha + \beta_1 Post_{i,t} + \gamma \mathbf{X_{i,t-1}} + \delta_i + \eta_t + \varepsilon_{i,t}\ , \quad (9)$$

$$Performance_{i,t} = \alpha + \beta_1 Post_{i,t} \times Delisted\ Firms_i + \gamma \mathbf{X_{i,t-1}} + \delta_i + \eta_t + \varepsilon_{i,t}\ , \quad (10)$$

where $Performance_{i,t}$ refers to monthly performance of signatory i in month t. $Post_{i,t}$ is an indicator variable for the three years post delisting. For stayed signatories, $Post_{i,t}$ takes the same value of their matched delisted signatories. To capture the dynamics of evolvement, I further replace $Post_{i,t}$ with three indicators for the first, second and third year following delisting. $Delisted\ Firms_i$is an indicator variable for delisted signatories. $\mathbf{X_{i,t-1}}$ is a vector of time-varying monthly lagged control variables. δ_i and η_t indexes region and year fixed effects.

Table 9 Panel B and C respectively report the results for the delisted sample and the matched sample. [20] To better illustrate these results, I also plot the key performance changes in Figure 5. I find that fund flows increase significantly by 1% in the second and third year of delisting, accompanied by a significant increase in net returns. However, no significant improvement in risk-adjusted returns is observed, possibly because delisted signatories allocate more assets towards stocks which bring higher returns but also higher risk. This conjecture is supported by the evidence that signatories are more likely to invest in firms that face more ESG controversies and operate in the sin industries post delisting. [21] Interestingly, while columns (11)-(12) in Table 9 Panel B and C show that portfolio holdings of sin stocks increase by about 3-4% in the first year of delisting, Figure 5 Panel E reveals that the percentage of sin stocks held by delisted signatories surges from about ten months prior to delisting and is twice as

[20] Results on portfolio ESG performance, measured using either MSCI or Refinitiv scores, are highly similar.
[21] Following Hong and Kacperczyk (2009) and Eccles, Rajgopal and Xie (2022), I define sin stocks as firms operating in the following industries: fossil fuels, alcohol, tobacco, military weapons, gambling, adult entertainment, and nuclear energy.

much as that held by the matched stayed signatories during the delisting month. Holdings of clean stocks in technology and renewable energy decline, although not statistically significant.

In summary, the market does not withdraw fund flows from delisted signatories. Instead, more capital flows into delisted signatories as their returns improve. The abandonment of a public sustainability commitment is associated with changes in investment portfolio composition. Delisted companies allocate more assets towards stocks that yield higher returns yet also entail higher risk, such as sin stocks and stocks with more ESG controversies. These findings suggest that a public sustainability commitment is not merely a label but imposes a binding constraint on companies' investment decisions.

V. CONCLUSION

This study investigates the phenomenon of investment companies abandoning their public commitment to sustainable investment by delisting from the Principles for Responsible Investment (PRI) while continuing to operate.

The key findings are threefold. First, a long-term public sustainability commitment can signal a company's ability to "do well by doing good," given its internal resources and external environment. Companies tend to abandon this commitment when it constrains their investment activities to the extent that they experience deterioration in financial and sustainability performance. Second, the level of internal management controls for sustainable investment, especially the provision of internal training, can effectively indicate a company’s long-term sustainability commitment. Lastly, though mandatory standardized sustainability disclosures impose significant costs on reporting companies, they benefit the market by filtering out companies that can "walk the talk" and provide valuable information to stakeholders.

These findings suggest that public sustainability commitments carry considerable costs, and companies that cannot afford them are likely to abandon their commitments. In addition to contributing to the literature on sustainable investment and sustainability disclosures, the

findings can help PRI offer better support and training to signatories, thereby promoting long-term commitment to sustainable investment and supporting PRI's mission to build a sustainable global financial system. Furthermore, this study can inform policymakers considering the implementation of mandatory standardized disclosures on sustainable finance products to enhance transparency around sustainability claims made by investment companies.

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Appendix
Variable Definition

Variable	Source	Definition
Financial Characteristics		
Alpha	Morningstar Direct	Monthly value weighted average alpha of all open-end mutual fund share classes managed by each signatory. Alpha at the fund share class level is calculated as the average monthly excess return benchmarked against the monthly excess return of market portfolio over the prior 36 months.
Sharpe	Morningstar Direct	Monthly value weighted average Sharpe ratio of all open-end mutual fund share classes managed by each signatory. Sharpe ratio at the fund share class level is calculated as the average monthly excess return divided by the standard deviation of monthly excess return over the prior 36 months.
Flow	Morningstar Direct	Monthly sum of all net flows scaled by the sum of total net assets from the prior month across all open-end mutual fund share classes managed by each signatory. Net flow at the fund share class level is calculated as the change in total net assets adjusted for the prior month net return.
Return	Morningstar Direct	Month value weighted average total return net of expenses across all open-end mutual fund share classes managed by each signatory.
Expense	Morningstar Direct	Monthly value weighted average of expense ratio across all open-end mutual fund share classes managed by each signatory.
Size	Morningstar Direct	Natural logarithm of one plus the monthly sum of total net assets across all open-end mutual fund share classes managed by each signatory.
Portfolio ESG Performance		
Refinitiv ESG (or E,S,G) Score	Refinitiv Eikon, FactSet	Monthly value weighted average Refinitiv ESG (or environmental, social, governance) scores of all companies invested in by each signatory. ESG (or environmental, social, governance) scores at the company level are demeaned every year to account for methodology changes over time.
Controversy Score	Refinitiv Eikon, FactSet	Monthly value weighted average Refinitiv ESG Controversy scores of all companies invested in by each signatory. Controversy scores at the company level are demeaned every year to account for methodology changes over time.
MSCI ESG (or E,S, G) Score	MSCI IVA, FactSet	Monthly value weighted average MSCI ESG (or environmental, social, governance) scores of all companies invested in by each signatory. ESG (or environmental, social, governance) scores at the company level are demeaned every month to account for methodology changes over time.
Sin Stocks	FactSet	Monthly value weighted average percentage of portfolio invested in sin industries (fossil fuels, alcohol, tobacco, military weapons, gambling, adult entertainment, and nuclear energy) by each signatory.
Clean Stocks	FactSet	Monthly value weighted average percentage of portfolio invested in clean industries (technology and renewable energy) by each signatory.
Country Characteristics		

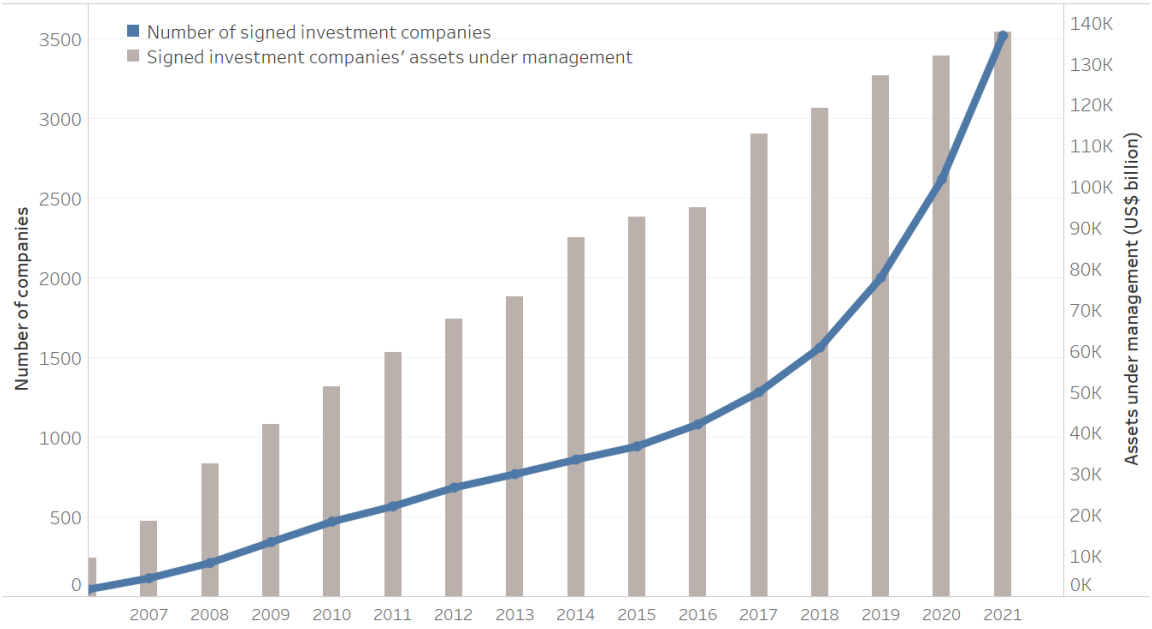
EPI	Yale EPI	Environmental performance index of each signatory's headquarter country per year, computed based on time-series raw data from Yale EPI following Yale EPI 2020 scoring methodology.
Social Norm	World Values Survey	Social norm of each signatory's headquarter country per year, computed as the weighted average of four emancipative values in World Values Survey: (1) personal autonomy, (2) gender equality, (3) lifestyle liberty, and (4) voice of the people.
EPI & Social Norm	Yale EPI, World Values Survey	Principal component analyzed from Social Norm and EPI for each signatory's headquarter country per year.
Log(GDP)	World Bank WDI	Natural logarithm of the gross domestic product of each signatory's headquarter country per year.
Log(Market Cap/GDP)	World Bank WDI	Natural logarithm of the domestic market capitalization scaled by gross domestic product of each signatory's headquarter country per year.
Signatory Characteristics		
Delisted Firms	PRI	Indicator variable that equals one if the company delisted at least once from PRI from 2006 April to 2021 December for reasons other than merger, acquisition or liquidation, otherwise zero for companies staying at PRI since signature.
Service Tier	PRI	Service tier assigned to each signatory upon joining that decides the level of engagement and support provided by PRI. There are three service tiers in total: Tier 1 (high), Tier 2 (medium), Tier 3 (low), reflecting each signatory's size and strategic importance to PRI.
Fee Band	PRI	Fee band assigned to each signatory upon joining that decides the level of annual fee payable to PRI. There are seven fee bands for investment companies depending on their assets under management (AUM in USD): Band 1 (0–0.09 billion), Band 2 (0.1–0.99 billion), Band 3 (1–4.99 billion), Band 4 (5–9.99 billion), Band 5 (10–29.99 billion), Band 6 (30–50 billion), Band 7 (>50 billion).
PRI Tenure	PRI	Number of years as a PRI signatory.
Voluntary Discloser	Wayback Machine	Indicator variable that equals one if the signatory has voluntarily provided standardized disclosure on sustainable investment practices between 2007–2011, before the mandatory sustainability reporting standards were initiated.
Reported Sustainable Investment Practices		
ESG Policy	Signatory Reports	Principal component that summarizes the coverage of environmental, social or governance factors in each signatory's sustainable investment policies during the reporting year.
Active Ownership Policy	Signatory Reports	Principal component that summarizes the coverage of proxy voting or shareholder engagement in each signatory's sustainable investment policies during the reporting year.
Fiduciary Policy	Signatory Reports	Principal component that summarizes the coverage of fiduciary duties in each signatory's sustainable investment policies during the reporting year.

Policy Cover All Assets	Signatory Reports	Indicator variable that equals one if the signatory's sustainable investment policy covers all its assets under management during the reporting year.
Annual Target Review	Signatory Reports	Indicator variable that equals one if the signatory reviews its sustainable investment targets annually or more frequently during the reporting year.
Board Accountability	Signatory Reports	Principal component that summarizes the level of accountability for sustainable investment each signatory assigns to its board members or trustees during the reporting year.
Executive Accountability	Signatory Reports	Principal component that summarizes the level of accountability for sustainable investment each signatory assigns to its CEO, COO, CIO, or investment committee during the reporting year.
Dept Head Accountability	Signatory Reports	Principal component that summarizes the level of accountability for sustainable investment each signatory assigns to its sustainability department head during the reporting year.
Dept Staff Accountability	Signatory Reports	Principal component that summarizes the level of accountability for sustainable investment each signatory assigns to its sustainability department staff during the reporting year.
Manager Accountability	Signatory Reports	Principal component that summarizes the level of accountability for sustainable investment each signatory assigns to its portfolio managers during the reporting year.
Analyst Accountability	Signatory Reports	Principal component that summarizes the level of accountability for sustainable investment each signatory assigns to its investment analysts during the reporting year.
Training	Signatory Reports	Principal component that summarizes the level of training or personal development for sustainable investment each signatory provides to its employees during the reporting year.
KPI	Signatory Reports	Principal component that summarizes the level of incorporation of sustainable investment in KPI or performance targets each signatory sets for its employees during the reporting year.
Variable Pay	Signatory Reports	Principal component that summarizes the level of incorporation of sustainable investment in variable pay or appraisal process each signatory sets for its employees during the reporting year.
External Promotion	Signatory Reports	Principal component that summarizes the active level of each signatory in external promotion of sustainable investment, including policy engagement and memberships in sustainability initiatives, during the reporting year.
Internal Assurance	Signatory Reports	Indicator variable that equals one if the signatory internally assures its reported information by either internal auditors or top management during the reporting year.
External Assurance	Signatory Reports	Indicator variable that equals one if the signatory externally assures its reported information during the reporting year.
Voluntary Reporter	Signatory Reports	Indicator variable that equals one if the signatory has voluntarily reported during its grace period following the mandatory sustainability reporting standards between 2014–2020.
Time and Trend		
Reporting Standards Released	PRI	Indicator variable that equals one for the months of September and October 2011 when the first draft of mandatory sustainability reporting standards was released for public consultation.

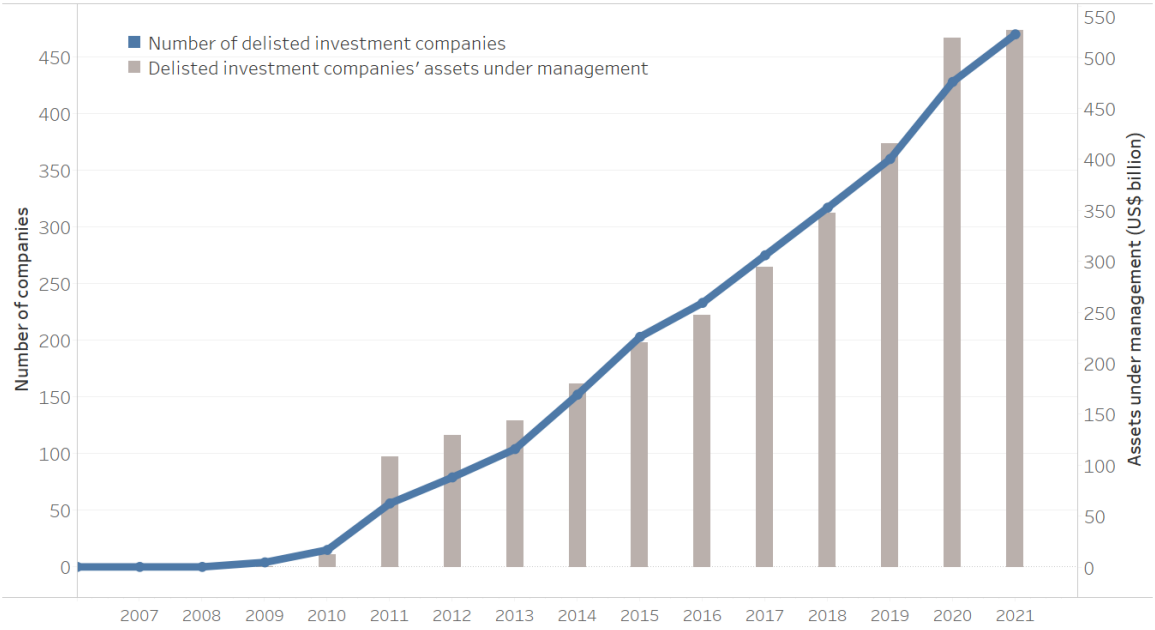
Reporting Standards Agreed	PRI	Indicator variable that equals one for the months between September 2012 and September 2013 when the final draft of mandatory sustainability reporting standards was agreed following extensive consultation with signatories.
Mandatory Report Launched	PRI	Indicator variable that equals one for the months since October 2013 when the mandatory sustainability reporting standards were officially launched.
Mandatory Fee Announced	PRI	Indicator variable that equals one for the month of September 2010 when the first mandatory annual fee was announced.
Mandatory Fee Invoiced	PRI	Indicator variable that equals one for the months between April and August 2021 when the first mandatory fee was invoiced.
New Signatories Prior Year	PRI	Number of investment companies newly signed as signatories in the prior year.
Total Signatories Prior Month	PRI	Number of investment manager signatories in the prior month.
Post	PRI	Indicator variable that equals one for the three years after delisting from PRI, or zero for the last three years signed to PRI.
Post Year 1 (or 2, 3)	PRI	Indicator variable that equals one for the first (or second, third) year after delisting from PRI, or zero otherwise.
Time Trend	PRI	Number of months from January 2006.

Figure 1
Signing and Delisting Trend of Investment Companies Over Time

Panel A: Signing Trend



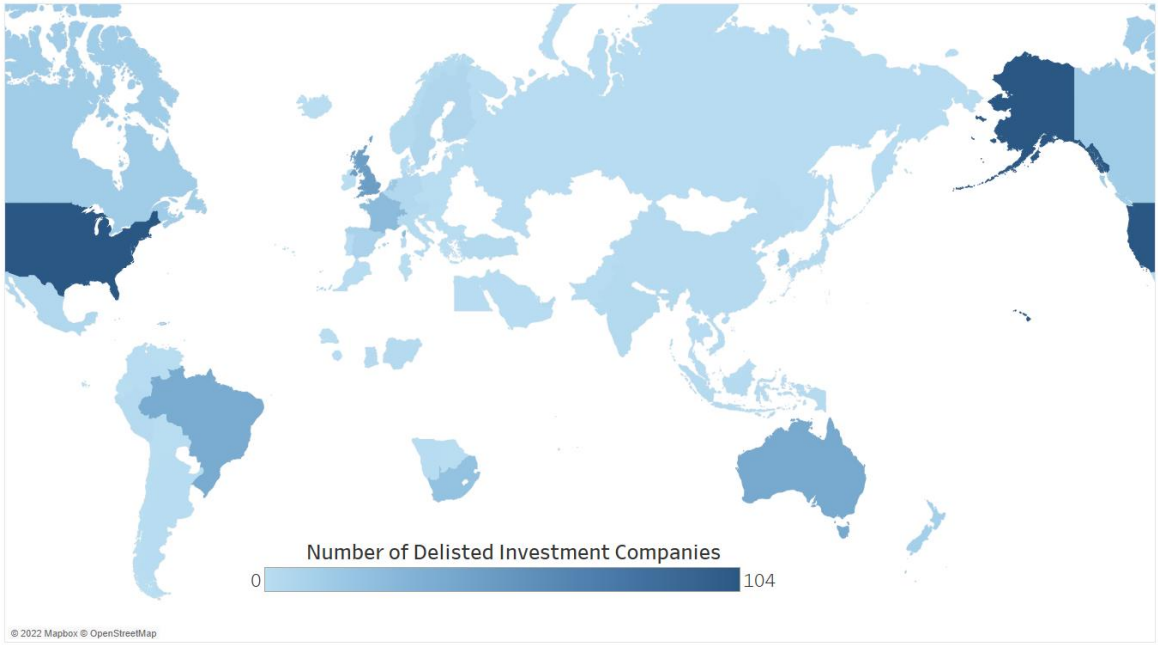
Panel B: Delisting Trend



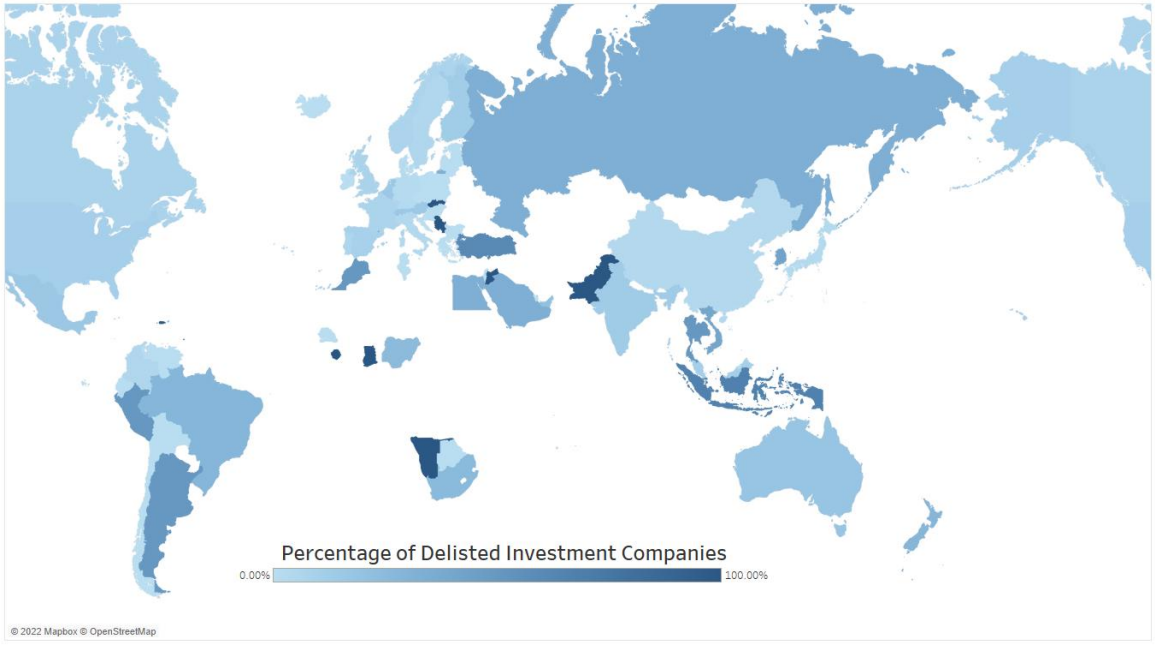
Notes: Figure 1 Panel A presents the accumulative number and assets under management of investment companies signed up to PRI every year from 2006 to 2021. Figure 1 Panel B presents the accumulative number and assets under management of investment companies delisted from PRI every year from 2006 to 2021.

Figure 2
Prevalence of Delisting Across Countries

Panel A: Number of Delisted Investment Companies



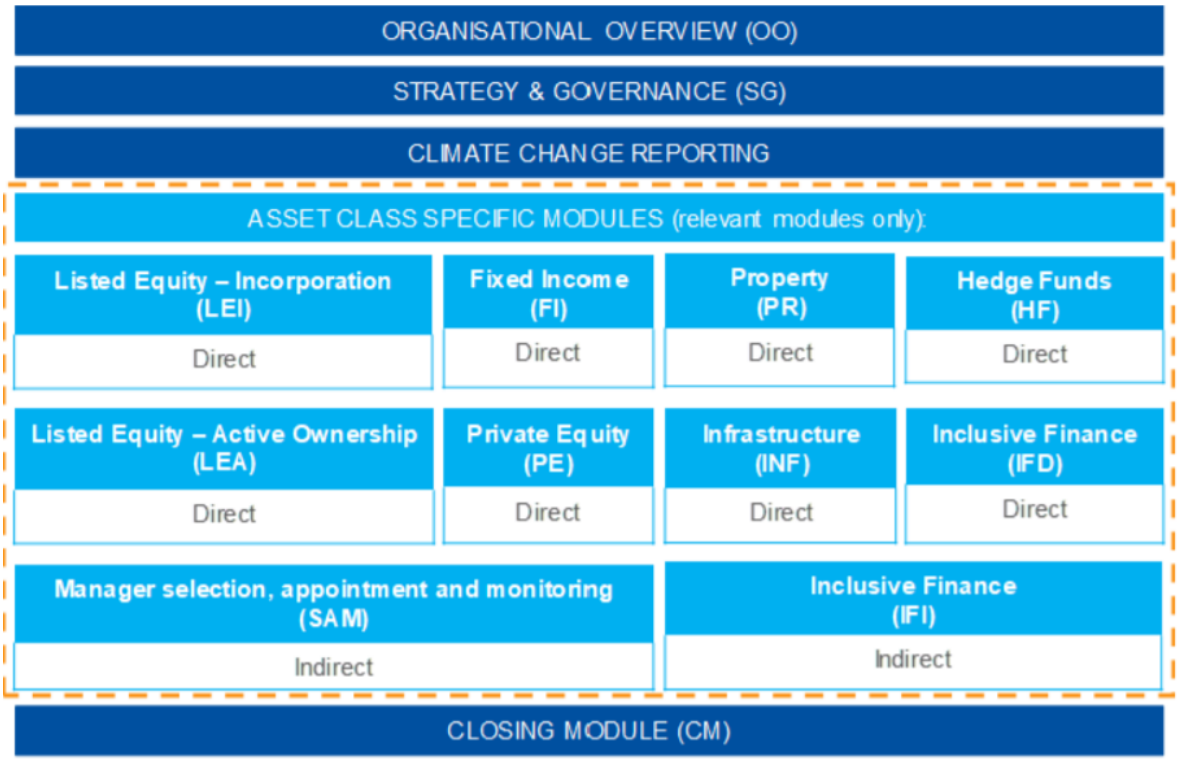
Panel B: Percentage of Delisted Investment Companies



Notes: Figure 2 Panel A presents the number of investment companies delisted from PRI in each country between 2006 and 2021. Figure 2 Panel B presents the percentage of investment companies delisted from PRI between 2006 and 2021.

Figure 3
PRI Mandatory Disclosure Standards on Sustainable Investment

Panel A: 2020 Modules Overview



Panel B: 2020 Strategy & Governance (SG) Module Indicators

SG 01: RI policy and coverage
SG 02: Publicly available RI policy or guidance documents
SG 03: Conflicts of interest
SG 04: Identifying incidents occurring within portfolios
SG 05: RI goals and objectives
SG 06: Main goals/objectives this year
SG 07: RI roles and responsibilities
SG 08: RI in performance management, reward and/or personal development
SG 09: Collaborative organizations and initiatives
SG 10: Promoting RI independently
SG 11: Dialogue with public policy makers or regulators
SG 12: Outsourcing to investment consultants and fiduciary managers
SG 13: ESG issues in strategic risks and opportunity
SG 14: Long-term investment risks and opportunity
SG 15: Allocation of assets to environmental and social themed areas
SG 16: ESG issues for internally managed assets not reported in framework
SG 17: ESG issues for externally managed assets not reported in framework
SG 18: Innovative features of approach to RI
SG 19: Communication
SG end: Module confirmation page

Notes: Figure 3 Panel A presents an overview of the modules in PRI's 2020 mandatory disclosure standards on sustainable investment. Figure 3 Panel B lists the indicators of the Strategy and Governance module in PRI's 2020 mandatory disclosure standards on sustainable investment. Completing modules and indicators in darker shading is mandatory, while modules and indicators in lighter shading are voluntary.

Panel C: Indicator SG 05 Responsible Investment Goals and Objectives: Questions

SECTION

Objectives and strategies

SG 05	Indicator status MANDATORY	Purpose GATEWAY/CORE ASSESSED	Principle GENERAL

2020 Reporting Standards

SG 05	INDICATOR					
SG 05.1	Indicate if and how frequently your organisation sets, and reviews objectives for its responsible investment activities.					
	❍ Quarterly or more frequently	❍ Biannually	❍ Annually	❍ Less frequently than annually	❍ Ad-hoc basis	❍ It is not set/reviewed
SG 05.2	Additional information. [OPTIONAL]					

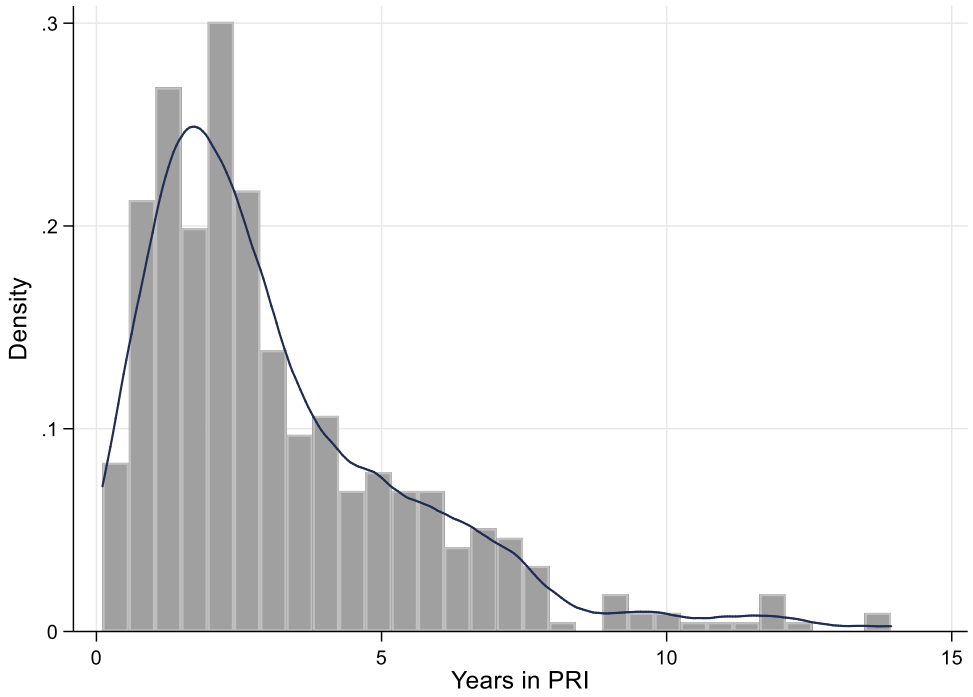
2014 Reporting Standards

OA 05	INDICATOR				
OA 05.1	Indicate if your organisation sets objectives for its responsible investment activities.				
	❍ Yes	❍ No			
OA 05.2	Indicate how frequently your organisation sets or revises objectives for responsible investment.				
	❍ At least once per year	❍ Less than once per year			
OA 05.3	Indicate how frequently your organisation formally reviews performance against its objectives for responsible investment.				
	❍ Quarterly	❍ Biannually	❍ Annually	❍ Every two years or less	❍ It is not reviewed
OA 05.4	Additional information. [OPTIONAL]				

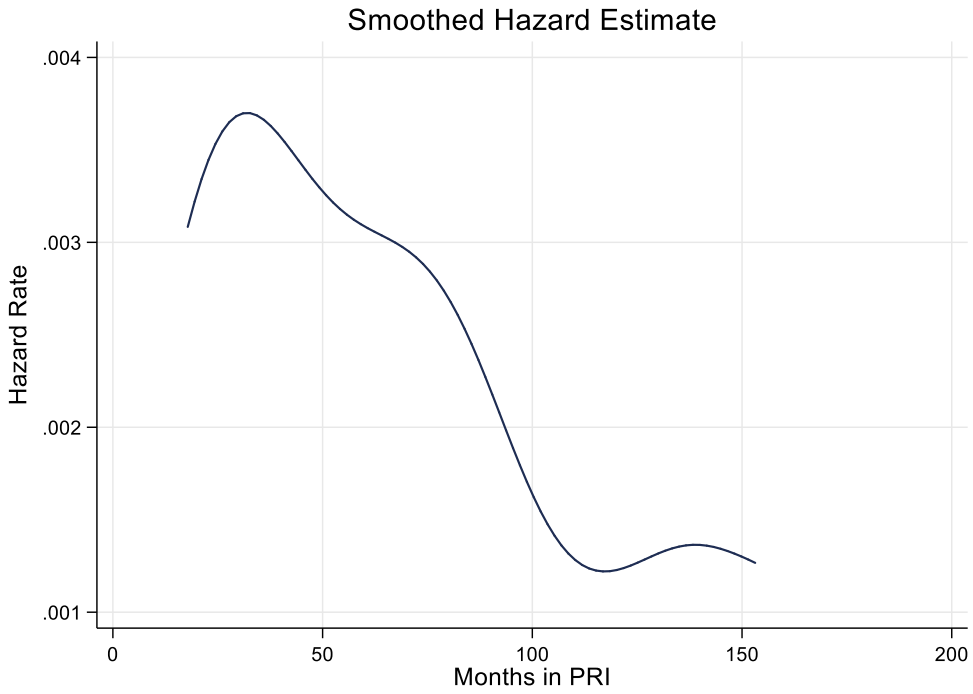
Notes: Figure 3 Panel C presents the information required to report and disclose by the Strategy and Governance indicator five, respectively in PRI's 2020 and 2014 mandatory disclosure standards on sustainable investment.

Figure 4
Delisted Firms' Tenure and Delisting Hazard Estimate

Panel A: Distribution of PRI Tenure for Delisted Firms



Panel B: Smoothed Estimate of Hazard Rate for Delisting

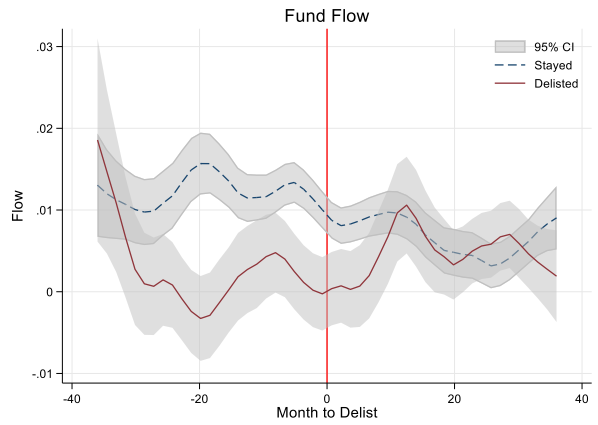


Notes: Figure 4 Panel A presents the density distribution of the number of years investment companies signed up to PRI before delisting. Figure 4 Panel B presents the smoothed hazard estimate for the investment company's risk of delisting over months signed up to PRI.

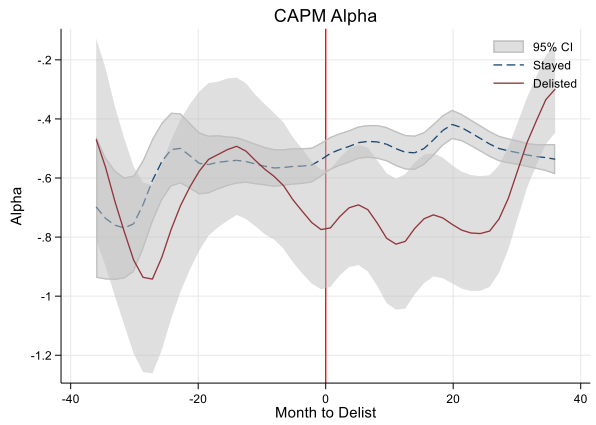
Figure 5

Financial Performance and Portfolio Composition Three Years Around Delisting

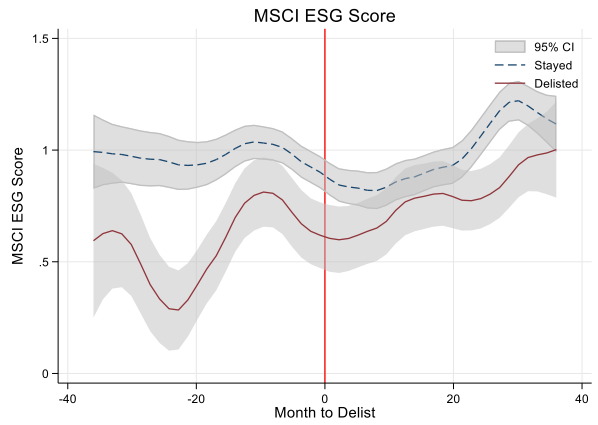
Panel A: Fund Flow



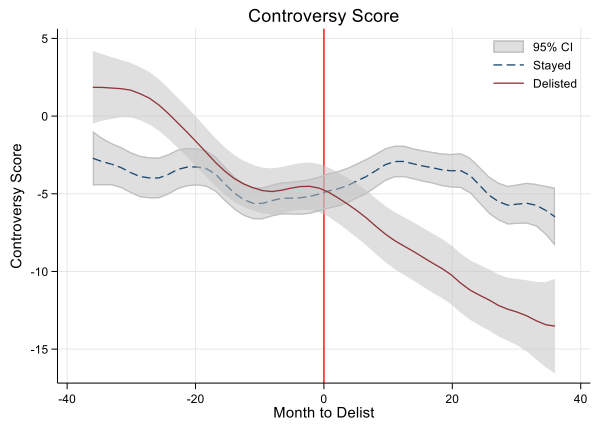
Panel B: CAPM Alpha



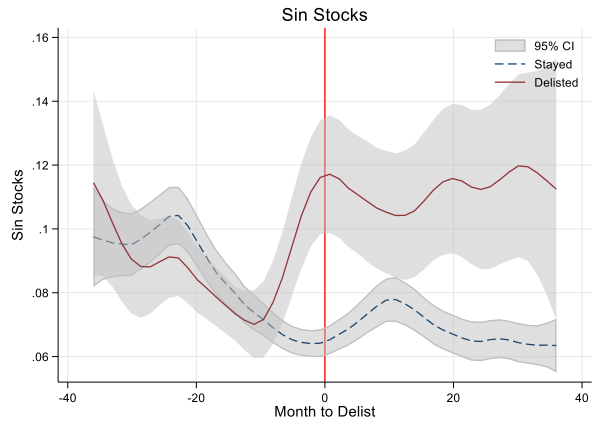
Panel C: ESG Score



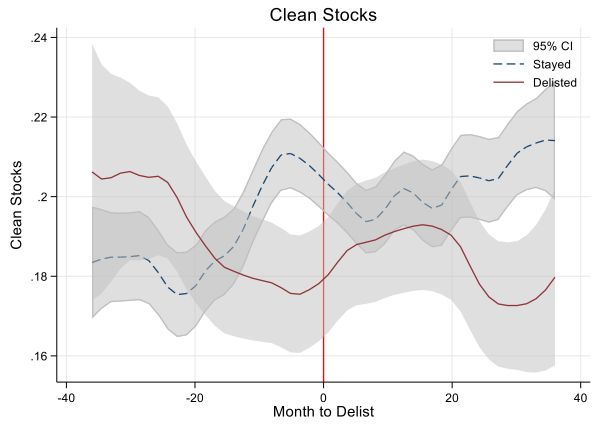
Panel D: Controversy Score



Panel E: Sin Stocks



Panel F: Clean Stocks



Notes: Figure 5 presents the evolution of investment companies' financial performance and portfolio composition over three years before and after the delisting month for the delisted signatories (solid line) and matched staying signatories (dashed line). The delisted and staying signatories are matched on the same (1) signature year, (2) headquarter region, (3) service tier, and (4) fee band. Gray areas represent 95% confidence intervals.

Table 1
Population Delisting Statistics

Panel A: Delisting Among All PRI Signatories 2006-2021

Signatory Category	Delisted for Non-Restructuring Reasons		Delisted for Restructuring Reasons		All Delisted		Stayed		Total
	N	%	N	%	N	%	N	%	N
Investment Manager	470	11.06%	253	5.97%	723	17.02%	3,519	82.98%	4,242
Asset Owner	86	10.71%	40	5.04%	126	15.74%	669	84.26%	795
Service Provider	230	28.66%	74	9.26%	304	37.92%	496	62.08%	800
Total	786	13.42%	367	6.29%	1153	19.71%	4684	80.29%	5837

Panel B: Delisting Reasons Cited by Investment Manager Signatories or Noted by PRI

Non-restructuring Reasons	N	%
Unclear	129	17.84%
Requested to delist due to fees	80	11.07%
Failure to pay	79	10.93%
Lack of resource	78	10.79%
Do not feel PRI is relevant	52	7.19%
Failure to report	40	5.53%
Requested to delist due to reporting	27	3.73%
Disengaged	6	0.83%
Failure to meet minimum requirements	4	0.55%
Not Satisfied	2	0.28%

Restructuring Reasons	N	%
Merged or taken over by another signatory	120	16.60%
Ceased to operate	73	10.10%
Merging or splitting membership	45	6.22%
Merged or taken over by non-signatory	17	2.35%

Notes: Table 1 Panel A presents delisting statistics at the population level for all institutions ever signed to PRI between 2006 and 2021. Firms can relist and delist for more than one time. The population statistics follows PRI's terminology to regard companies that relist after delisting as new signatories. Table 1 Panel B presents the delisting reasons cited by investment manager signatories or noted by their PRI signatory relationship managers. More than one reason can be cited for each delisting. Delisting is classified as for restructuring as long as one of the restructuring reasons is cited.

Table 2
Sample Selection

	Number of Signatories		
	Delisted Sample	Stayed Sample	Total
All PRI investment manager signatories	723	3,519	4,242
(Less: Duplicated signatories due to relisting)	(20)	(56)	(76)
Unique investment manager signatories	703	3,463	4,166
Covered in Refinitiv and Morningstar Global Open-End Mutual Funds Survivorship-bias-free Databases	209	1,460	1,669
(Less: Signatories delisted for restructuring reasons)	(84)		(84)
(Less: Signatories newly listed in 2021)		(305)	(305)
Final Sample	125	1,155	1,280

Notes: Table 2 presents the process of constructing a study sample of delisted signatories and a comparison sample of stayed signatories from the population of investment companies signed to PRI between 2006 and 2021.

Table 3
Sample Distribution

Panel A: Sample Distribution Over Time

Year	All Signatories	Delisted	Delisted%	Initial Signing Year	All Signatories	Delisted	Delisted%
2006	29			2006	29	4	13.79%
2007	62			2007	33	5	15.15%
2008	111			2008	49	15	30.61%
2009	165	1	0.61%	2009	55	13	23.64%
2010	215	4	1.86%	2010	54	11	20.37%
2011	252	15	5.95%	2011	52	15	28.85%
2012	300	6	2.00%	2012	54	7	12.96%
2013	339	7	2.06%	2013	46	6	13.04%
2014	384	14	3.65%	2014	59	6	10.17%
2015	440	8	1.82%	2015	64	9	14.06%
2016	505	7	1.39%	2016	72	5	6.94%
2017	595	15	2.52%	2017	105	12	11.43%
2018	727	12	1.65%	2018	144	9	6.25%
2019	924	11	1.19%	2019	208	4	1.92%
2020	1163	17	1.46%	2020	256	4	1.56%
2021	1154	9	0.78%	2021			
Total Unique Firms	1280	125	9.77%	Total Unique Firms	1280	125	9.77%

Notes: Table 3 Panel A presents the time-series sample distribution by calendar year of all investment manager signatories and delisted signatories on the left half. The right half presents the time-series sample distribution by the initial signing year of signatories delisted and stayed until the end of 2021. All delisted companies signed before 2021. Therefore, 309 companies that newly signed in 2021 and stayed are dropped from the comparison sample. Total unique companies count excludes duplicated companies that relist or delist more than once.

Panel B: Sample Distribution Across Countries				
Country Code	Country	All Signatories	Delisted	Delisted%
US	United States	261	26	9.96%
GB	United Kingdom	186	7	3.76%
FR	France	129	9	6.98%
AU	Australia	83	12	14.46%
CH	Switzerland	78	11	14.10%
BR	Brazil	60	23	38.33%
SE	Sweden	51	3	5.88%
DE	Germany	46	1	2.17%
ZA	South Africa	37	9	24.32%
JP	Japan	32	0	0.00%
CA	Canada	31	3	9.68%
LU	Luxembourg	29	0	0.00%
NL	Netherlands	24	3	12.50%
ES	Spain	19	1	5.26%
CN	China	19	0	0.00%
DK	Denmark	19	0	0.00%
FI	Finland	17	1	5.88%
HK	Hong Kong SAR	15	1	6.67%
NO	Norway	15	0	0.00%
IT	Italy	14	0	0.00%
BE	Belgium	13	1	7.69%
AT	Austria	10	1	10.00%
SG	Singapore	9	1	11.11%
MX	Mexico	8	2	25.00%
IE	Ireland	8	0	0.00%
GR	Greece	7	0	0.00%
NZ	New Zealand	6	1	16.67%
PT	Portugal	5	1	20.00%
CL	Chile	5	0	0.00%

Notes: Table 3 Panel B presents the sample distribution of delisted and stayed companies for countries that have at least five investment companies covered by the sample. Countries are ranked by the total number of unique investment companies signed to PRI covered by the sample between 2014 and 2020.

Table 4
Descriptive Statistics

Panel A: Comparison Between Delisted and Stayed Companies During Time at PRI

	All			Delisted	Stayed	Mean
Variable	Mean	Median	SD	Mean	Mean	Difference
Financial Characteristics						
Flow	0.01	0.00	0.05	0.01	0.01	0.00
Alpha	-0.39	-0.27	1.25	-0.44	-0.38	0.06
Sharpe	0.10	0.10	0.14	0.08	0.10	0.02***
Return	0.61	0.66	4.30	0.41	0.63	0.22**
Expense	0.11	0.10	0.06	0.12	0.10	-0.01***
Size	21.21	21.20	2.81	19.40	21.36	1.96***
Portfolio ESG Performance						
Refinitiv ESG Score	9.70	10.91	10.36	5.45	9.98	4.54***
MSCI ESG Score	0.80	0.83	1.02	0.62	0.81	0.19***
Country Characteristics						
EPI & Social Norm	0.25	0.63	1.55	-0.72	0.33	1.04***
Log(Market Cap/GDP)	4.75	4.79	0.55	4.54	4.77	0.23***
Log(GDP)	28.75	28.58	1.34	28.43	28.78	0.35***
Signatory Characteristics						
Service Tier	2.51	3.00	0.66	2.86	2.48	-0.38***
Fee Band	4.83	5.00	2.03	2.76	5.00	2.25***
PRI Tenure	9.49	10.00	4.25	5.90	9.80	3.90***
Voluntary Discloser	0.20	0.00	0.40	0.21	0.20	-0.01
Reported Sustainable Investment Practices						
ESG Policy	0.00	-0.27	1.90	-0.58	0.04	0.63***
Active Ownership Policy	0.00	-0.33	1.28	-0.29	0.03	0.31***
Fiduciary Policy	0.00	-0.01	1.04	-0.14	0.01	0.16***
Policy Cover All Assets	0.65	1.00	0.48	0.61	0.66	0.04*
Annual Target Review	0.74	1.00	0.44	0.63	0.75	0.12***
Board Accountability	0.00	0.01	1.23	-0.16	0.01	0.17***
Executive Accountability	0.00	0.09	1.19	-0.12	0.01	0.13**
Dept Head Accountability	0.00	-1.12	1.75	-0.76	0.06	0.82***
Dept Staff Accountability	0.00	-1.41	2.05	-0.68	0.06	0.74***
Manager Accountability	0.00	-0.38	1.23	0.02	0.00	-0.02
Analyst Accountability	0.00	0.46	1.30	-0.49	0.04	0.53***
Training	0.00	-1.00	1.71	-0.53	0.05	0.58***
KPI	0.00	-1.15	2.03	-0.12	0.01	0.13
Variable Pay	0.01	-0.73	1.84	-0.37	0.04	0.40***
External Promotion	0.00	-0.80	1.34	-0.40	0.03	0.44***
Internal Assurance	0.00	0.99	1.33	-0.68	0.06	0.74***
External Assurance	0.00	-0.34	1.00	-0.04	0.01	0.05
Voluntary Reporter	0.35	0.00	0.48	0.20	0.36	0.16***

Notes: Table 4 Panel A presents descriptive statistics of investment companies over time signed to PRI and compares descriptive statistics between 125 delisted and 1155 stayed signatories. All variables are measured at monthly frequency, except for *Reported Sustainable Investment Practices* which are at yearly frequency. Financial variables are winsorized at the 1% and 99% percentiles. Mean differences between two samples are tested using two-sided t-tests with unequal variances and Welch's approximation. All variables are defined in the Appendix. *,**, and*** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel B: Comparison Between Delisted and Stayed Companies Before and After Standardized Disclosure Mandate

	Before Standardized Disclosure Mandate			After Standardized Disclosure Mandate		
Variable	Delisted Mean	Stayed Mean	Mean Difference	Delisted Mean	Stayed Mean	Mean Difference
Financial Characteristics						
Flow	0.01	0.01	0.00	0.00	0.01	0.00***
Alpha	0.83	0.00	-0.83***	-0.92	-0.50	0.42***
Sharpe	0.13	0.11	-0.02*	0.04	0.10	0.06***
Return	0.81	0.64	-0.17	0.17	0.62	0.46***
Expense	0.11	0.11	0.00	0.12	0.10	-0.02***
Size	19.55	21.64	2.10***	19.07	21.22	2.15***
Portfolio ESG Performance						
Refinitiv ESG Score	3.46	7.47	4.01***	5.62	10.80	5.19***
MSCI ESG Score	0.58	0.86	0.28***	0.53	0.80	0.26***
Country Characteristics						
EPI & Social Norm	-1.51	-0.35	1.16***	-0.06	0.51	0.57***
Log(Market Cap/GDP)	4.29	4.60	0.31***	4.60	4.82	0.22***
Log(GDP)	28.74	28.51	-0.23***	28.47	28.85	0.38***
Signatory Characteristics						
Service Tier	2.89	2.32	-0.57***	2.90	2.54	-0.36***
Fee Band	2.36	5.33	2.97***	2.62	4.84	2.22***
PRI Tenure	3.78	12.84	9.05***	5.63	8.70	3.07***
Voluntary Discloser	0.44	0.41	-0.03*	0.10	0.14	0.04***

Notes: Table 4 Panel B compares descriptive statistics between 125 delisted and 1155 stayed companies before or after the mandatory sustainability reporting standards were launched in October 2013. Firms that stayed before the mandate include companies delisted after the mandate. All variables are measured at monthly frequency. Financial variables are winsorized at the 1% and 99% percentiles. Mean differences between two samples are tested using two-sided t-tests with unequal variances and Welch's approximation. All variables are defined in the Appendix. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5
Determinants of Delisting

Panel A: Financial Performance

	Duration of Commitment								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Alpha	0.14**	0.14**	0.15**						
	(0.06)	(0.06)	(0.06)						
Sharpe				1.64**	1.71**	1.85**			
				(0.76)	(0.76)	(0.74)			
Flow							2.69	2.69	2.70
							(1.82)	(1.80)	(1.76)
Voluntary Discloser	0.57*	0.56*	0.62**	0.49**	0.50**	0.55**	0.60***	0.62***	0.64***
	(0.31)	(0.31)	(0.30)	(0.25)	(0.25)	(0.24)	(0.21)	(0.22)	(0.21)
Size	0.14***	0.14***	0.14***	0.12***	0.12***	0.13***	0.11***	0.11***	0.12***
	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Service Tier 2	1.25**	1.24**	1.22**	1.10***	1.11***	1.10***	1.09***	1.09***	1.09***
	(0.50)	(0.50)	(0.50)	(0.42)	(0.42)	(0.41)	(0.40)	(0.40)	(0.39)
Service Tier 1	0.89	0.88	0.85	1.03	1.04	1.03	0.95	0.97	0.95
	(0.74)	(0.72)	(0.70)	(0.76)	(0.75)	(0.73)	(0.69)	(0.69)	(0.68)
EPI	0.02***			0.02***			0.02**		
	(0.01)			(0.01)			(0.01)		
Social Norm		4.49***			4.49***			3.21**	
		(1.49)			(1.49)			(1.26)	
EPI & Social Norm			0.17***			0.16***			0.10**
			(0.06)			(0.06)			(0.05)
Log(Market Cap/GDP)	0.15	0.04	0.12	0.17	0.07	0.15	0.17	0.09	0.15
	(0.19)	(0.20)	(0.19)	(0.19)	(0.19)	(0.19)	(0.16)	(0.16)	(0.17)
Log(GDP)	-0.13	-0.10	-0.10	-0.16*	-0.13	-0.13	-0.04	-0.02	-0.01
	(0.10)	(0.10)	(0.10)	(0.09)	(0.09)	(0.09)	(0.08)	(0.08)	(0.08)
N	32283	32283	32283	36462	36462	36462	42784	42784	42784
AIC	301.84	300.46	301.81	358.01	356.29	358.29	433.70	432.41	434.97

Panel B: Portfolio ESG Performance

	Duration of Commitment								
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
Refinitiv ESG Score	0.02**				MSCI ESG Score	0.33**			
	(0.01)					(0.13)			
Refinitiv E Score		0.02**			MSCI E Score		0.36**		
		(0.01)					(0.16)		
Refinitiv S Score			0.02**		MSCI S Score			0.40**	
			(0.01)					(0.16)	
Refinitiv G Score				0.02**	MSCI G Score				0.38***
				(0.01)					(0.14)
Voluntary Discloser	0.52*	0.53*	0.51*	0.45	Voluntary Discloser	0.41	0.44	0.44	0.37
	(0.29)	(0.30)	(0.29)	(0.28)		(0.29)	(0.29)	(0.28)	(0.27)
Size	0.13**	0.13**	0.13**	0.13**	Size	0.13**	0.13**	0.14***	0.13**
	(0.05)	(0.06)	(0.05)	(0.05)		(0.05)	(0.05)	(0.05)	(0.05)
Service Tier 2	0.89**	0.90**	0.91**	0.90**	Service Tier 2	0.94**	0.92**	0.91**	0.97**
	(0.42)	(0.43)	(0.43)	(0.43)		(0.42)	(0.43)	(0.43)	(0.44)
Service Tier 1	0.61	0.59	0.64	0.60	Service Tier 1	0.72	0.69	0.64	0.72
	(0.76)	(0.77)	(0.76)	(0.76)		(0.74)	(0.75)	(0.76)	(0.78)
EPI & Social Norm	0.07	0.07	0.07	0.07	EPI & Social Norm	0.06	0.07	0.07	0.06
	(0.07)	(0.07)	(0.07)	(0.08)		(0.07)	(0.07)	(0.07)	(0.09)
Log(Market Cap/GDP)	0.11	0.13	0.11	0.08	Log(Market Cap/GDP)	0.19	0.23	0.17	0.09
	(0.24)	(0.25)	(0.25)	(0.26)		(0.27)	(0.27)	(0.27)	(0.27)
Log(GDP)	0.01	0.01	0.01	-0.01	Log(GDP)	0.05	-0.01	0.01	0.01
	(0.10)	(0.10)	(0.10)	(0.10)		(0.10)	(0.10)	(0.10)	(0.10)
N	27263	27263	27263	27263	N	26895	26895	26895	26895
AIC	227.16	228.16	227.26	228.72	AIC	223.12	224.94	227.05	225.05

Notes: Table 5 reports results of the loglogistic accelerated failure time (AFT) model. Panel A reports results on the determinant effect of financial performance, and Panel B reports results on determinant effect of the portfolio ESG performance. The dependent variable is the duration of commitment, measured by the log number of months until a company delists from PRI. All variables are measured for each company per month. Robust standard errors clustered by company are reported in the parentheses. Intercepts are not reported. All variables are defined in the Appendix. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6
Effects of Mandatory Regulation on Delisting

	Monthly Delisting Frequency			
	Study Group: Non-Restructuring Delisting		Placebo Group: Restructuring Delisting	
	(1)	(2)	(3)	(4)
Reporting Standards Released	10.03***	10.00***	-0.45*	-0.42*
	(0.31)	(0.30)	(0.23)	(0.20)
Reporting Standards Agreed	2.71**	2.65***	0.27	0.30
	(0.93)	(0.88)	(0.40)	(0.34)
Mandatory Report Launched	2.60**	2.49**	-0.43	-0.40
	(1.09)	(1.01)	(0.56)	(0.45)
Mandatory Fee Announced	9.62***	9.61***	2.26***	2.30***
	(0.18)	(0.19)	(0.14)	(0.14)
Mandatory Fee Invoiced	2.56***	2.53***	0.31	0.34*
	(0.27)	(0.27)	(0.20)	(0.18)
New Signatories Prior Year	0.00		0.00	
	(0.00)		(0.00)	
Total Signatories Prior Month		0.00		0.00
		(0.00)		(0.00)
Time Trend	0.01	0.01	0.02**	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
N	191	191	191	191
Adj. R-Squared	0.20	0.20	0.17	0.17

Notes: Table 6 compares the effect of mandatory regulation on delisting for non-restructuring and restructuring reasons. The dependent variable is the monthly frequency of delisting for non-restructuring reasons in columns (1)–(2), or for restructuring reasons in columns (3)–(4). Robust standard errors clustered by year are reported in the parentheses. Intercepts are not reported. All variables are defined in the Appendix. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7
Determinants of Delisting Before and After Mandatory Disclosure

Panel A: Delisted Pre vs. Post Official Launch of Mandatory Disclosure

	Duration of Commitment									
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Alpha	0.09	0.15**								
	(0.06)	(0.07)								
Sharpe			1.07	2.31***						
			(1.07)	(0.88)						
Flow					-0.25	6.25**				
					(1.40)	(2.55)				
Refinitiv ESG Score							0.02	0.02*		
							(0.02)	(0.01)		
MSCI ESG Score									0.15	0.36**
									(0.17)	(0.17)
Voluntary Discloser	0.37	1.02**	0.40	0.91***	0.55*	0.98***	0.73	0.69**	0.69	0.63*
	(0.33)	(0.46)	(0.31)	(0.31)	(0.31)	(0.30)	(0.91)	(0.34)	(0.84)	(0.35)
Size	0.17	0.14***	0.12*	0.13***	0.08	0.12**	0.13	0.14**	0.12	0.13**
	(0.11)	(0.05)	(0.06)	(0.05)	(0.06)	(0.05)	(0.22)	(0.06)	(0.16)	(0.06)
Service Tier 2	0.26	1.74**	0.34	1.83***	0.52	1.75**	0.42	1.50**	0.43	1.55**
	(0.36)	(0.71)	(0.32)	(0.70)	(0.35)	(0.70)	(0.42)	(0.73)	(0.42)	(0.71)
Service Tier 1	4.56***	0.82	5.45***	0.96	6.97***	0.79	8.47***	0.42	8.28***	0.55
	(1.04)	(0.76)	(0.77)	(0.82)	(1.09)	(0.74)	(2.38)	(0.79)	(2.66)	(0.76)
EPI & Social Norm	-0.12	0.17**	-0.09	0.14**	-0.07	0.09	-0.18	0.06	-0.19	0.05
	(0.11)	(0.06)	(0.11)	(0.07)	(0.08)	(0.06)	(0.19)	(0.09)	(0.15)	(0.10)
Log(Market Cap/GDP)	1.26***	-0.04	1.03**	-0.02	0.69*	0.03	0.88	-0.03	0.90	0.03
	(0.49)	(0.20)	(0.44)	(0.21)	(0.38)	(0.19)	(0.61)	(0.28)	(0.57)	(0.34)
Log(GDP)	-0.32*	-0.06	-0.46***	-0.07	-0.26	0.07	-0.33	0.10	-0.32	0.15
	(0.19)	(0.11)	(0.18)	(0.10)	(0.19)	(0.10)	(0.87)	(0.12)	(0.74)	(0.12)
N	7584	31930	9035	36010	10891	42125	7267	26899	7108	26531
Chi2 (P-value)	29.52***	(0.00)	46.49***	(0.00)	55.44***	(0.00)	39.00***	(0.00)	37.06***	(0.00)
AIC	50.45	268.92	72.67	307.13	113.82	353.55	71.66	181.24	71.24	176.03

Panel B: Effect on Voluntary Disclosers vs. Non-Voluntary Disclosers

	Duration of Commitment									
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Alpha	0.09	0.16**								
	(0.06)	(0.07)								
Alpha*Voluntary Discloser	-0.03	-0.48*								
	(0.27)	(0.25)								
Sharpe			0.54	2.43***						
			(1.06)	(0.94)						
Sharpe*Voluntary Discloser			1.87	-1.75						
			(2.49)	(2.07)						
Flow					-0.16	6.85**				
					(1.57)	(2.75)				
Flow*Voluntary Discloser					-0.69	-7.47**				
					(2.34)	(3.75)				
Refinitiv ESG Score							-0.01	0.02*		
							(0.02)	(0.01)		
Refinitiv ESG Score*Voluntary Discloser							0.05	-0.02		
							(0.03)	(0.02)		
MSCI ESG Score									0.05	0.42**
									(0.13)	(0.16)
MSCI ESG Score*Voluntary Discloser									0.26	-0.42*
									(0.49)	(0.23)
Voluntary Discloser	0.36	0.84*	0.24	1.02***	0.56*	0.99***	0.70	0.80**	0.56	0.95**
	(0.37)	(0.47)	(0.32)	(0.37)	(0.32)	(0.29)	(0.70)	(0.35)	(0.77)	(0.41)
Control Variables	X	X	X	X	X	X	X	X	X	X
N	7584	31930	9035	36010	10891	42125	7267	26899	7108	26531
Chi2 (P-value)	37.81***	(0.00)	49.77***	(0.00)	56.19***	(0.00)	37.40***	(0.00)	38.59***	(0.00)
AIC	52.43	270.02	73.93	308.84	115.81	354.90	72.09	182.83	72.64	176.48

Notes: Table 7 Panel A reports results of loglogistic accelerated failure time (AFT) models for companies delisted before and after the mandatory standardized sustainability disclosures were launched in October 2013. Panel B adds an indicator variable for companies that voluntarily provided standardized sustainability disclosures before the mandate, and its interactions with financial or portfolio ESG performance variables. The pre-mandate models compare companies delisted before the mandate to the stayed companies including companies delisted after the mandate. The post-mandate models compare companies delisted after the mandate to the stayed companies over their entire time signed to PRI. The dependent variable is the duration of commitment, measured by the log number of months until a company delists from PRI. All variables are measured for each signatory per month. Robust standard errors clustered by signatory are reported in the parentheses. Intercepts are not reported. All variables are defined in the Appendix. *,**, and*** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 8
Informativeness of Reported Sustainable Investment Practices

	Probability of Maintaining the Commitment	Duration of Commitment
	(1)	(2)
ESG Policy	-0.00	-0.00
	(0.06)	(0.02)
Active Ownership Policy	-0.02	-0.02
	(0.08)	(0.04)
Fiduciary Policy	-0.09	-0.08
	(0.09)	(0.06)
Policy Cover All Assets	0.35*	0.25**
	(0.20)	(0.10)
Annual Target Review	-0.07	0.01
	(0.20)	(0.09)
Board Accountability	-0.04	-0.01
	(0.09)	(0.04)
Executive Accountability	-0.06	-0.02
	(0.07)	(0.04)
Dept Head Accountability	0.18**	0.09**
	(0.09)	(0.04)
Dept Staff Accountability	0.02	0.07*
	(0.08)	(0.04)
Manager Accountability	-0.07	0.02
	(0.10)	(0.04)
Analyst Accountability	0.13*	0.08**
	(0.08)	(0.04)
Training	0.28***	0.17***
	(0.09)	(0.05)
KPI	-0.11	-0.03
	(0.07)	(0.04)
Variable Pay	0.14*	0.04
	(0.08)	(0.05)
External Promotion	-0.08	-0.06
	(0.11)	(0.06)
Internal Assurance	0.19***	0.01
	(0.07)	(0.03)
External Assurance	-0.12	-0.08
	(0.11)	(0.05)
Voluntary Reporter	0.66**	-0.10
	(0.26)	(0.10)
Size	0.35***	0.20***
	(0.08)	(0.03)
Service Tier FE	X	X
Region FE	X	X
Year FE	X	
N	6568	6568
Pseudo R2/AIC	0.35	707.27

Notes: Table 8 columns (1) reports results of logit models, where the dependent variable is an indicator that equals one if the company has never delisted from PRI since joining by the end of the sample period in December 2021. Column (2) report2 results of the loglogistic accelerated failure time (AFT) model, where the dependent variable is the log expected duration of commitment. All variables are measured for each signatory per year. Robust standard errors clustered by signatory are reported in the parentheses. Intercepts are not reported. All variables are defined in the Appendix. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 9
Consequences of Delisting

Panel A: Market Reaction One Year Around Delisting Time

	N	-12 to -1	-6 to -1	-3 to -1	0	1 to 3	1 to 6	1 to 12
Raw Flow	93	0.10**	0.03	0.00	0.00	0.02	0.04	0.16
		(0.05)	(0.02)	(0.01)	(0.01)	(0.02)	(0.04)	(0.12)
Excess Flow Over Average Flows of Matched Control Group	40	-0.13	-0.06*	-0.04**	0.00	-0.00	0.02	0.16
		(0.08)	(0.04)	(0.02)	(0.01)	(0.03)	(0.06)	(0.23)

Panel B: Financial and Portfolio ESG Performance Three Years Around Delisting - Delisted Signatories

	Flow		Return		Alpha		MSCI ESG Score		Controversy Score		Sin Stocks		Clean Stocks	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Post	0.01*		0.28**		0.09		0.20		-4.21*		0.03*		0.01	
	(0.00)		(0.14)		(0.23)		(0.17)		(2.22)		(0.02)		(0.02)	
Post Year 1		0.00		0.42**		-0.04		0.15		-2.60		0.03**		0.01
		(0.00)		(0.19)		(0.28)		(0.14)		(1.95)		(0.02)		(0.01)
Post Year 2		0.01*		0.10		0.04		0.31		-6.16**		0.02		0.02
		(0.00)		(0.19)		(0.23)		(0.20)		(2.70)		(0.02)		(0.02)
Post Year 3		0.01**		0.28		0.39		0.15		-4.76		0.03		0.01
		(0.00)		(0.19)		(0.26)		(0.26)		(2.96)		(0.02)		(0.02)
Lag Size	-0.00	-0.00	0.01	0.02	0.11***	0.11***	-0.14**	-0.14**	1.51*	1.53*	-0.00	-0.00	0.01	0.01
	(0.00)	(0.00)	(0.02)	(0.02)	(0.04)	(0.04)	(0.06)	(0.06)	(0.87)	(0.86)	(0.00)	(0.00)	(0.01)	(0.01)
Lag Expense	-0.00	-0.00	-0.04	0.08	2.39*	2.30*	-2.44	-2.50	12.30	13.98	0.19	0.19	0.05	0.04
	(0.02)	(0.02)	(0.85)	(0.85)	(1.31)	(1.32)	(2.80)	(2.83)	(24.99)	(24.67)	(0.18)	(0.18)	(0.33)	(0.33)
Lag Return	0.00	0.00	-0.01	-0.01	0.02***	0.02***	0.01	0.01*	0.01	0.00	-0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.07)	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)
Region FE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Observations	3726	3726	3730	3730	2585	2585	1831	1831	1844	1844	2010	2010	2010	2010
Adj. R-Squared	0.02	0.02	0.03	0.03	0.18	0.19	0.18	0.18	0.19	0.19	0.15	0.15	0.22	0.22

Notes: Table 9 Panel A reports average raw and cumulative excess fund flows of the delisted companies between one year before and after the delisting month. Raw flows are the change in total net assets over each period adjusted for the prior month net returns, then scaled by the prior month total net assets. Excess flows are calculated with respect to the average returns and flows of stayed companies matched on the same (1) signature year, (2) headquarter region, (3) service tier, and (4) fee band. Table 9 Panel B reports regression results of financial performance and portfolio composition between three years before and after the delisting month for the delisted companies. All variables are measured for each signatory per month. Robust standard errors clustered by signatory are reported in the parentheses. Intercepts are not reported. All variables are defined in the Appendix. *,**,*** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel C: Financial and Portfolio ESG Performance Three Years Around Delisting - Delisted Signatories and Matched Staying Signatories

	Flow		Return		Alpha		MSCI ESG Score		Controversy Score		Sin Stocks		Clean Stocks	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Delisted Firms	-0.01***	-0.01***	-0.24**	-0.26**	0.02	0.02	-0.16	-0.17	0.26	0.35	0.01	0.01	-0.02	-0.02
	(0.00)	(0.00)	(0.11)	(0.11)	(0.27)	(0.27)	(0.25)	(0.25)	(2.59)	(2.60)	(0.02)	(0.02)	(0.02)	(0.02)
Delist Firms x Post	0.01*		0.26*		-0.27		0.23		-6.02**		0.04		-0.01	
	(0.00)		(0.15)		(0.25)		(0.20)		(2.85)		(0.03)		(0.02)	
Delisted Firms x Post Year 1		0.00		0.29		-0.31		0.20		-3.47		0.04*		0.00
		(0.00)		(0.21)		(0.35)		(0.18)		(2.49)		(0.02)		(0.02)
Delisted Firms x Post Year 2		0.01*		0.64***		-0.42*		0.33		-7.95**		0.03		-0.00
		(0.01)		(0.22)		(0.22)		(0.23)		(3.74)		(0.03)		(0.02)
Delisted Firms x Post Year 3		0.01**		-0.20		-0.07		0.19		-8.14**		0.04		-0.03
		(0.01)		(0.25)		(0.23)		(0.25)		(3.64)		(0.03)		(0.03)
Post	-0.01***		-0.08		0.11		0.08		-1.00		-0.00		0.01	
	(0.00)		(0.07)		(0.08)		(0.09)		(1.30)		(0.01)		(0.01)	
Post Year 1		-0.00**		0.05		0.14		-0.00		-0.35		-0.00		-0.00
		(0.00)		(0.11)		(0.09)		(0.08)		(1.18)		(0.01)		(0.01)
Post Year 2		-0.01**		-0.65***		0.11		0.07		-1.02		-0.01		0.01
		(0.00)		(0.12)		(0.10)		(0.10)		(1.49)		(0.01)		(0.01)
Post Year 3		-0.01***		0.33***		0.09		0.19		-1.80		-0.01		0.02
		(0.00)		(0.11)		(0.08)		(0.12)		(1.72)		(0.01)		(0.01)
Control Variables	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Region FE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Observations	11606	11606	11645	11645	8879	8879	5447	5447	5492	5492	6279	6279	6279	6279
Adj. R-Squared	0.03	0.03	0.05	0.05	0.10	0.10	0.14	0.14	0.09	0.09	0.15	0.14	0.16	0.16

Notes: Table 9 Panel C reports regression results of financial performance and portfolio composition between three years before and after the delisting month for the delisted companies compared with stayed companies matched on the same (1) signature year, (2) headquarter region, (3) service tier, and (4) fee band. All variables are measured for each signatory per month. Robust standard errors clustered by signatory are reported in the parentheses. Intercepts are not reported. All variables are defined in the Appendix. *,**,*** denote statistical significance at the 10%, 5%, and 1% levels, respectively.