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Finance Working Paper N° 1074/2025
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François Derrien
HEC Paris
Alexandre Garel
Audencia Business School
Arthur Romec
Toulouse Business School
Feng Zhou
Toulouse Business School

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Keywords: Shareholder Engagement, Climate Change, Carbon Emissions, ESG, Activism

JEL Classification: D62, G23, G32, G34, M14, Q54

François Derrien

HEC Paris
Professor of Finance
e-mail: derrien@hec.fr

Alexandre Garel

Audencia Business School
Associate Professor
e-mail: agarel@audencia.com

Arthur Romec

Toulouse Business School
Associate Professor
e-mail: arthur.romec@gmail.com

Feng Zhou

Toulouse Business School
Assistant Professor
e-mail: f.zhou@tbs-education.fr

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François Derrien† Alexandre Garel‡ Arthur Romec§ Feng Zhou¶

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Abstract

We study climate risk engagements by one of the world's largest institutional investors. These engagements account for a substantial share of ESG engagements and predominantly target firms with large carbon footprints and high exposure to transition risk. The recent ESG backlash has led to a reduction in climate risk engagements, particularly in industries where climate issues are less financially material. Climate risk engagements are associated with greater voting support for management. Following engagement, targeted firms are more likely to adopt science-based climate targets and to disclose climate-related information. They also experience a modest reduction in emissions intensity. Placebo tests using social engagements suggest that these outcomes are specifically due to climate risk engagements. Finally, when targeted firms fail to subsequently take climate actions, engagement is repeated and complemented by votes against directors.

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†HEC Paris - *derrien@hec.fr*

‡Audencia Business School - *agarel@audencia.com*

§Toulouse Business School - *arthur.romec@gmail.com*

¶Toulouse Business School - *f.zhou@tbs-education.fr*

1 Introduction

Passive investing has expanded dramatically in recent decades and is now concentrated in the hands of a few dominant players. The so-called "Big Three" (BlackRock, Vanguard, and State Street) collectively managed approximately $30 trillion in assets at the end of 2025, representing more than 20% of the global equity market capitalization, with the vast majority of these assets invested through passive funds. Although investors and asset managers may be concerned about climate change, the inherently passive nature of these funds, which essentially replicate indexes, limits their ability to selectively exclude firms most exposed to climate risks.

At the same time, the scale of large passive funds allows them to internalize the costs of exercising voice, notably through engagements, as Admati, Pfleiderer, and Zechner (1994) and Fisch, Hamdani, and Solomon (2019) argue. This logic is particularly relevant for climate-related issues, where voice may be more effective than exit in inducing firms to reduce the externalities they generate, because engagement can directly influence corporate policies whereas divestment operates only indirectly through asset prices (Broccardo, Hart, and Zingales 2022). The relevance of climate risk engagements is further reinforced by the portfolio-wide nature of climate risk: mitigation efforts by any single portfolio firm can generate positive spillovers for a diversified investor's entire portfolio by reducing economy-wide climate risk. As a result, large diversified investors may have stronger incentives to promote climate action than to intervene on other dimensions of corporate behavior, such as firm-specific governance practices, where engagement may yield more limited or even negative portfolio-level spillovers (Azar, Schmalz, and Tecu 2018).

Large passive investors therefore have both the capacity and the incentives to press portfolio firms to address climate-related issues. They can do so through two main channels: voting and engagement, i.e., direct dialogue with executives and directors at portfolio firms. The voting behavior of mutual funds in general, and of passive funds in particular, has been studied extensively, for example by Iliev and Lowry (2015) or Heath et al. (2022).

By contrast, their engagement strategies remain relatively underexplored, largely because of data limitations.[1] Recently, however, passive funds have begun to disclose the identities of firms with which they engage in their stewardship reports. Since 2020, BlackRock has also reported detailed information on the specific topics of its engagements. According to these reports, BlackRock made close to 7,000 climate risk engagements between 2020 and 2024. Using data from these reports, this paper addresses the following questions: What drives BlackRock's climate risk engagements? How do these engagements interact with BlackRock's voting behavior? And do they have measurable effects on targeted firms' climate policies?

We begin by studying BlackRock's climate engagement decisions, which reflect both its willingness and its incentives to act on climate-related issues, as well as the costs associated with doing so. BlackRock has repeatedly emphasized the importance of addressing and managing climate risks. For instance, in his widely cited 2021 letter to CEOs,[2] Larry Fink, BlackRock's CEO, declared that "no issue ranks higher than climate change on our clients' list of priorities." Similarly, in his 2020 letter, he claimed that climate change has become a defining factor in companies' long-term prospects, noting that "climate risk is investment risk".[3]

If BlackRock's clients place a high value on climate action, engagement may help attract fund inflows, generating benefits that go beyond the managers' direct utility from climate action. At the same time, to be effective, climate engagements entail information acquisition and monitoring costs. While these costs and benefits are difficult to quantify, we hypothesize that BlackRock is more likely to engage firms where the potential benefits are greatest, that is, those most exposed to climate risk. We further predict that the ESG backlash of the early 2020s, which reflects declining demand for climate action among at least a subset of investors, alters this cost-benefit tradeoff and leads to fewer climate risk engagements overall. Post-backlash, however, we expect BlackRock to continue engaging selectively with firms for

1. Two notable exceptions are Azar et al. (2021) and Aggarwal, Litov, and Rajgopal (2023). We discuss below how our paper complements their evidence.

2. Source: https://www.BlackRock.com/us/individual/2021-larry-fink-ceo-letter

3. Source: https://www.BlackRock.com/us/individual/2020-larry-fink-ceo-letter

which climate risk is financially material.

We find that BlackRock's climate engagements target primarily industries characterized by high carbon emissions (e.g., Petroleum and Natural Gas, Utilities, or Transportation) or significant climate-related exposures in their equity and loan portfolios (e.g., Banking). Turning to the firm-level determinants of climate risk engagement, we find that, within industries and countries, firms with higher carbon emissions are significantly more likely to be targeted by BlackRock's climate risk engagements. Engagement is also more likely for firms with greater regulatory exposure to climate change, as measured by Sautner et al. (2023), and for firms with a larger number of climate-related incidents. In auxiliary analyses, we find no evidence that these variables predict the likelihood of BlackRock's engagements on social issues, confirming that climate risk measures are specific drivers of climate engagements and not of ES engagements in general. These findings suggest that, through its engagements, BlackRock aims to influence the climate policies of its portfolio firms with the largest climate footprint, potentially in response to client demand. In line with this interpretation, engagement activity peaked in 2022 and subsequently declined, reflecting the broader ESG and climate backlash. Consistent with its fiduciary duty to prioritize financial returns, BlackRock appears to have concentrated its post-backlash engagements on industries where climate risks are perceived as financially material.

We next examine the interplay between climate risk engagements and other channels through which BlackRock may voice its concerns, namely voting and exit decisions. Fisch et al. (2019) argue that engagement and voting are complementary tools for large passive investors that are locked into their portfolio firms: private engagement allows investors to communicate their expectations and seek negotiated changes, while voting power makes this dialogue credible by providing an escalation threat. Because climate policies require firm-specific information and managerial implementation, direct dialogue may be more effective than immediately opposing directors or supporting shareholder proposals that constrain management. This reasoning suggests that BlackRock may initially favor cooperation over

confrontation, supporting management at firms it engages on climate risk, including by supporting directors in board elections and opposing shareholder proposals that management recommends voting against.

Consistent with these predictions, we find that BlackRock provides greater support to management at firms it engages on climate issues. In particular, BlackRock is significantly more likely to support management proposals related to director elections at firms targeted by climate engagements. By contrast, BlackRock is significantly less likely to support climate-related shareholder proposals at engaged firms. With respect to exit, we find no evidence that climate risk engagements are associated with divestment from firms with greater climate risk. This finding is consistent with the view that passive investors, whose portfolios largely replicate market indexes, have limited scope to exit portfolio firms.

We next analyze the outcomes of BlackRock's climate risk engagements. We focus on three types of climate-related firm policies: (1) commitments to adopt science-based climate targets, (2) disclosure of climate risks, and (3) reductions in carbon emissions. The effectiveness of such engagements is a priori ambiguous. On the one hand, BlackRock's large ownership stakes and privileged access to management could enable it to exert sufficient pressure to produce tangible policy changes (Fisch et al. 2019). On the other hand, the high number of engagements undertaken may limit its ability to monitor responses effectively, and it is possible that climate-related engagement is motivated more by a desire to attract climate-conscious investors than by an intention to alter corporate behavior. One empirical challenge for this analysis is that data on climate risk engagements are recent and the post-engagement period is relatively short (three years at most). We therefore focus on climate risk engagements made in 2020 and 2021 and use a stacked difference-in-differences setting comparing the outcome variable (i.e., commitment to adopt a climate target, disclosure, and carbon emissions) pre- and post-engagement for the companies that receive a climate risk engagement in one of the two years relative to those that do not.

Our first outcome of interest is the adoption of science-based climate targets, one of the

stated objectives of BlackRock, as discussed in its "2030 net-zero statement".[4] We consider commitments to the Science Based Targets initiative (SBTi), a global partnership that assists companies in setting greenhouse gas reduction goals aligned with the Paris Agreement's 1.5°C objective.[5] We find that firms targeted by BlackRock's climate risk engagements are significantly more likely to commit to adopting such targets. The likelihood of sending a commitment letter to SBTi increases by 4.4 percentage points post-engagement, which is sizable given the relative rarity of SBTi commitments.

The second outcome we examine is climate risk disclosure. BlackRock has been a long-standing advocate of improved disclosure, notably as a founding member of the Task Force on Climate-Related Financial Disclosures (TCFD). We measure disclosure using data from the Carbon Disclosure Project (CDP), the world's largest platform for voluntary climate-related reporting. CDP annually surveys firms on climate risks, opportunities, and strategies. We find that firms targeted by BlackRock's climate risk engagements are significantly more likely to begin responding to the CDP questionnaire in subsequent years. Economically, the likelihood of responding to the CDP questionnaire increases by 20 percentage points post-engagement. This pattern is consistent with BlackRock using engagement to promote greater climate-related transparency among its portfolio firms.

Although BlackRock's climate risk engagements lead to the adoption of climate targets, it does not imply that targeted firms deliver on their commitment by actually reducing their carbon emissions. For example, Bolton and Kacperczyk (2025) show that the effect of firm commitments on overall carbon emissions is small and that the firms that make the most ambitious commitments have low carbon emissions to start with. Following climate risk engagements, targeted firms experience a reduction of 6.5 percentage points in their scope 1-2 emission intensity (emissions per dollar of sales), which represents about 10% of the standard deviation of this variable. However, we find no evidence that the absolute level of emissions

4. Source: https://www.blackrock.com/corporate/sustainability/2030-net-zero-statement.

5. Commitments from SBTi represent the most ambitious climate commitments (see Bolton and Kacperczyk (2025)).

decreases after climate risk engagement. This suggests that post-engagement, firms mainly improve their carbon efficiency (i.e., they emit less by units of sales) but that these efficiency gains are not primarily driven by reductions in the absolute level of emissions. Taken together, these findings suggest that BlackRock's climate engagements are associated with meaningful changes in corporate behavior: they increase the likelihood of adopting science-based targets, enhance disclosure practices, and contribute to a measurable improvement in carbon efficiency. In placebo tests, we find that firms targeted by social engagements do not subsequently modify their climate-related policies, suggesting that the findings of our outcome analysis are specifically due to climate risk engagements.

Overall, our findings indicate that BlackRock's climate engagements have measurable effects. We acknowledge, however, that attributing these effects solely to BlackRock's engagements is challenging. Pressure on firms to adopt climate policies, enhance disclosure, and ultimately reduce their climate footprint is inherently collective, involving multiple investors and stakeholders. To address this concern, we show that the timing of the documented effects closely coincides with BlackRock's engagement activities. Moreover, the findings of our outcome analysis are robust to excluding firms engaged by the other "Big Three" institutional investors (i.e., Vanguard or State Street), firms targeted by NGO campaigns, and firms included in Climate Action 100+ initiatives.

Finally, we examine whether and how BlackRock responds when firms targeted by climate risk engagements fail to subsequently take climate actions. We find that BlackRock reduces its voting support for directors and intensifies its engagement efforts when previously targeted firms remain inactive. These findings are consistent with an escalation strategy in which engagement is repeated and complemented by voting pressure when firms do not respond to prior engagements.

2 Related literature and contributions

This paper contributes first to the literature on shareholder ESG engagements and their outcomes (e.g., Dimson, Karakaş, and Li 2015; Barko, Cremers, and Renneboog 2022; Becht et al. 2023; Hoepner et al. 2024) and to recent studies focusing on "Big Three" investors' engagements and campaigns (Gormley et al. 2023). In particular, two recent papers analyze the role of "Big Three" investors' ESG engagements. Azar et al. (2021) show that "Big Three" ownership is negatively associated with subsequent carbon emissions. Using data on 2018 engagements, they also document that "Big Three" investors are more likely to target firms with greater carbon emissions. However, using a longer time period, Aggarwal et al. (2023) find no statistically significant correlation between "Big Three" engagements and portfolio firms' carbon emissions. Our paper, which differs from these studies along several dimensions, reconciles their findings. First, unlike Azar et al. (2021) and Aggarwal et al. (2023), we specifically focus on climate risk engagements. We find that firms with high carbon emissions are more likely to be the target of climate risk engagements but not of engagements related to other ES issues. Second, Azar et al. (2021) analyze the effect of "Big Three" ownership on carbon emissions but do not study the effectiveness and outcomes of engagements. In contrast, we provide evidence that climate risk engagements have measurable effects on firms' climate policies. Additionally, we also examine the interplay between BlackRock's engagements and its voting behavior as well as how BlackRock responds when targeted firms fail to subsequently take climate actions.

In another related paper, Heeb and Kölbel (2024) conduct a field experiment showing that firms respond to engagement requests to adopt science-based climate targets. Our results on the effect of BlackRock's climate risk engagements on the adoption of a science-based climate target complement their findings. Our work also differs from theirs in the type and reach of the climate engagements considered (BlackRock's climate risk engagements targeting firms worldwide versus explicit requests to adopt a climate target sent to a random sample of 300 firms). Moreover, we consider a larger set of outcomes than the adoption of a climate target

and we provide evidence that BlackRock's decision to engage firms on climate issues depends to a large extent on their exposure to climate transition risk and their carbon footprints.[6]

This paper also contributes to the literature on the effectiveness of shareholder voice and exit to deal with climate risks. Theory (e.g., Broccardo et al. 2022; Edmans, Levit, and Schneemeier 2022) and empirical evidence (e.g., Berk and Van Binsbergen 2021; Berg, Heeb, and Kölbel 2022; Heath et al. 2023; Gantchev, Giannetti, and Li 2022) on the effectiveness of the exit channel are mixed. Regarding the voice channel, Akey and Appel (2019) and Naaraayanan, Sachdeva, and Sharma (2021) show that hedge fund activism and environmental activist investing lead to a reduction in firms' pollution but these studies do not focus on climate-risk-related engagements and outcomes.[7] Our results indicate that shareholder engagement on climate risk issues can affect firms' climate policies. They also inform us on the interplay between engagement and other forms of investors' actions, namely, voting and exit. When it engages portfolio companies, BlackRock tends to vote in favor of management. But when these firms fail to act following an initial engagement, BlackRock tends to re-engage them and to provide less voting support to directors.

3 Data sources and sample construction

3.1 Data sources

We obtain engagement data from BlackRock's stewardship reports.[8] BlackRock provides the list of firms it engages on ESG issues during the year. BlackRock defines an engagement as "a direct interaction with the firm during which meaningful dialogue occurred". Since 2020, BlackRock provides granular information regarding the topics of its ESG engagements, which

6. Heeb and Kölbel (2024) randomly selected the firms to which the institutional investor they partnered with should send the letter requesting the adoption of a climate target, which alleviates selection concerns but prevents them from examining the determinants of climate engagements.

7. Moreover, activist campaigns are rare. The maximum number of hedge fund campaigns per year is 25 in Akey and Appel (2019). Likewise, Naaraayanan et al. (2021) study only 62 activism events.

8. At the time of data collection, stewardship reports were publicly available from BlackRock's website.

allows us to precisely identify climate risk engagements.[9] We collect the list of all the firms BlackRock engaged on ESG issues over the period 2020-2024 from its stewardship reports.

To study the determinants and outcomes of BlackRock's climate risk engagements, we collect data from a variety of sources. We obtain accounting data from Compustat and stock price data from LSEG (formerly known as Refinitiv). Data on BlackRock's ownership are from LSEG. For each firm-year belonging to the Compustat Global or North America universe, we retrieve its institutional ownership, and then aggregate the ownership of BlackRock's various entities. Data on BlackRock voting are from proxy voting information shared by BlackRock.[10] Data on carbon emissions and on physical risk scores are from Trucost and data on firm-level regulatory and physical risk exposures are from Sautner et al. (2023). Data on ESG incidents are from RepRisk, data on NGO campaigns are from Sigwatch, and data on Vanguard and State Street's engagements are from their websites. Finally, we obtain data on climate disclosure from the Carbon Disclosure Project (CDP) and climate commitments from SBTi.

3.2 Sample construction

We start with BlackRock's ESG engagement records for the period 2020-2024. Our sample period starts in 2020 because it is the first year BlackRock provides granular information on the topics of its ESG engagements, allowing us to identify climate risk engagements. We then match stewardship reports with Compustat using firm names.[11] This allows us to match 98.7% of firm-year observations in BlackRock's stewardship reports (11,843 out of

9. In addition to climate risk, BlackRock also engages its portfolio firms on the following ESG issues: board composition (G), business oversight and risk management (G), executive management (G), corporate strategy (G), governance structure (G), remuneration (G), environmental impact management (E), operational sustainability (E), human capital (S), social risks and opportunities (S). The topics of BlackRock's engagements change occasionally. Climate risk is consistently part of BlackRock's engagement topics in our sample period.

10. At the time of data collection, BlackRock's voting records were publicly available on its website.

11. For name matching, we remove: (i) connectors such as "the" or "a"; (ii) suffixes such as "Ltd", "PLC", "Inc", "Incorporated", "Limited", "Public Limited Company", "SA", "AG", and "(Japan)"; and (iii) punctuation and brackets (e.g., parentheses, slashes, hyphens, underscores, periods, commas, and apostrophes). We manually verify firms that do not match exactly.

11,993). After merging with LSEG ownership data, we obtain a sample of 11,693 firm-year observations with at least one BlackRock engagement.

Our final sample also includes firm-year observations without BlackRock engagement. Specifically, we assume that firm-year observations in which BlackRock has an ownership stake and for which we cannot find a match in stewardship reports have not been targeted by any engagement. We further drop observations with missing data on control variables. This results in a sample of 47,392 firm-year observations over the period 2020-2024, 9,966 of which have been the target of BlackRock's ESG engagements and 4,788 the target of at least one climate risk engagement. Appendix A provides definitions of the variables used in subsequent tests.

3.3 Summary statistics

Figure 1 and Table 1, Panel A display the number of unique portfolio firms targeted by BlackRock on different ESG issues over the period 2020–2024, along with the percentage of these firms that also receive engagements on other ESG topics. BlackRock engages between about 2,000 and 2,500 of its portfolio firms on ESG issues every year. The number of firms targeted by climate risk engagements increases from 930 in 2020 to 1,435 in 2022, before declining to 1,024 in 2023 and 871 in 2024. We observe a similar but less pronounced pattern for other E and S engagements. This evolution suggests that BlackRock significantly scaled back its E&S engagements (in particular those related to climate risk) in response to the "ESG backlash" that started in the U.S. around 2022.

Figure 1, Panel B (and Table 1, Panel A) shows that climate risk engagements are accompanied by governance engagements in the vast majority of cases. Specifically, in each year of our sample, more than 90% of firms targeted by a climate risk engagement also receive a governance engagement. Given BlackRock's definition of engagement (i.e., a direct interaction with the firm during which meaningful dialogue occurred), this overlap is unsurprising and suggests that climate and governance issues are often discussed jointly during engagements

with portfolio firms. Similarly, other environmental and social engagements are frequently bundled with governance engagements. By contrast, the overlap between climate risk and social engagements is substantially lower, at approximately 60%.

Panel B of Table 1 reports the fraction of unique portfolio firms that BlackRock engages on each ESG issue, delivering a similar message. BlackRock engages between 16% and 18% of its portfolio firms on ESG issues every year. The fraction of portfolio firms targeted by climate risk engagements increases from 7% in 2020 to 11% in 2022, before declining back to 7% in 2024.

Panel C of Table 1 displays the breakdown of climate risk engagements by industry. The ten industries with the greatest number of firms targeted by climate risk engagements are Banking (459), Utilities (423), Petroleum and Natural Gas (331), Trading (317), Transportation (271), Retail (239), Insurance (230), Chemicals (205), Steel Works (172), and Computer Software (171). Most of these industries are high-carbon-emissions industries according to classifications used in prior studies (e.g., Ilhan, Sautner, and Vilkov 2021; Seltzer, Starks, and Zhu 2022). Banking, Insurance, and Trading are not high-carbon-emissions industries based on their direct emissions but are exposed to substantial climate risks through their equity and loan portfolios (Martini et al. 2023). The fraction of unique firms targeted by BlackRock's climate risk engagements tends to be high in these industries. For example, BlackRock engages about 24% of firms in the Utilities sector and about 23% of firms in the Petroleum and Natural Gas sector on climate risk, compared to about 10% of firms in the entire universe of BlackRock's investments.

Panel D of Table 1 reports the breakdown of climate risk engagements by country. The U.S. (1,920), Japan (626), Australia (272), UK (242), Brazil (199), Canada (158), China (146), France (121), Mexico (118), and Germany (115) are the countries with the highest number of firms targeted by climate risk engagements. Overall, the descriptive statistics indicate that BlackRock engages firms on climate risk issues worldwide with about 65% of its climate risk engagements targeting firms outside the U.S.

Other summary statistics at the firm-year level appear in Table 2. About 10% of the firm-year observations in our sample are the target of BlackRock's climate risk engagements. The fractions of firms targeted by social and governance engagements are, respectively, 10% and 20%. On average, BlackRock's ownership amounts to 3.3% of firms' shares, consistent with BlackRock having substantial ownership stakes in its portfolio companies.

4 Empirical analysis

4.1 Firm-level determinants of climate risk engagements

4.1.1 Baseline results

Because engagement is costly, BlackRock's cost-benefit trade-off should lead it to target the largest emitters, for which the potential climate-related benefits of engagement are greatest. The summary statistics discussed above show that BlackRock predominantly engages firms in high-emission industries. In this section, we explore whether a firm's climate risk and carbon footprint (relative to its industry and country peers) predict the likelihood of being targeted by a climate risk engagement.

We consider four main variables. The first is the level of carbon emissions (i.e., the natural logarithm of scope 1 and 2 emissions),[12] which measures a firm's carbon footprint and its contribution to climate change and proxies for a firm's exposure to climate transition risk. The second is emission intensity computed as the ratio of emissions to sales. It measures carbon efficiency of the production process rather than total emissions. The third measure is regulatory climate change exposure based on earnings conference calls from Sautner et al. (2023). It measures the relative frequency with which bigrams that capture regulatory shocks related to climate change appear in the transcripts of earnings conference calls between firms and security analysts. We average it over the four quarters of any given year to obtain

12. We focus on scope 1 and 2 emissions because BlackRock tends to disregard scope 3 emissions because of methodological complexity and lack of direct control by companies (see for example https://www.BlackRock.com/corporate/literature/publication/blk-commentary-climate-risk-and-energy-transition.pdf).

an annual variable at the firm level. Our fourth measure is the number of climate-change-related incidents from RepRisk, a data science company specializing in ESG risk research. Data on ESG incidents from RepRisk are used in several recent studies including Hoepner et al. (2024), who show that engagement on environmental issues by a large institutional investor reduces environmental incidents at targeted firms, leading in turn to a reduction in downside risk.

We examine firm-level determinants of climate risk engagements by estimating the following regression for firm i in year t:

$$\text{Climate Risk Engagement}_{i,t} = \beta_0 + \beta_1 \text{Climate Risk Measure}_{i,t-1} + \beta_2 \mathbf{X}_{i,t-1} + \gamma_{j,t} + \delta_{c,t} + \epsilon_{i,t}, \tag{1}$$

where $\textit{Climate Risk Engagement}_{i,t}$ is a dummy variable equal to one if firm i is the target of at least one climate risk engagement from BlackRock in year t. $\textit{Climate Risk Measure}_{i,t-1}$ is one of the proxies for climate risk discussed in the previous paragraph: i) the natural logarithm of scope 1 and 2 carbon emissions from Trucost, ii) emissions intensity, iii) regulatory climate change exposure, and iv) the number of climate-related incidents from RepRisk. $\mathbf{X}_{i,t-1}$ is a vector of firm characteristics, namely, ln(total assets), cash ratio, debt ratio, market-to-book ratio, asset tangibility, ROA, yearly stock return, BlackRock's ownership stake, and the fraction of BlackRock's total portfolio the firm represents. All independent variables are lagged by one year. We include different sets of fixed effects at the industry-by-year ($\gamma_{j,t}$) and country-by-year ($\delta_{c,t}$) levels. These fixed effects absorb the heterogeneity in climate risk engagements across industries and countries documented in Section 3.3, allowing us to explore whether, within a given industry and country, firms more exposed to climate risks are more likely to be engaged. Standard errors are clustered at the firm level.

Table 3, Panel A reports the results from estimating Equation (1). The coefficient on $Ln(CO2emissions)$ is positive and statistically significant at the 1% level, indicating that firms with high levels of carbon emissions are significantly more likely to be targeted by

BlackRock's climate risk engagements. Economically, a one-standard deviation increase in $Ln(CO2\ emissions)$ is associated with an increase of 4.1 percentage points (1.495×2.73) in the likelihood of being targeted by climate risk engagements, a 41% increase compared to an unconditional probability of 10%.[13] In Column 2, we find that firms with greater carbon emission intensity are also significantly more likely to be targeted by climate risk engagements.

In Column 3, we consider the measure of regulatory climate change exposure from Sautner et al. (2023), which is available for about 50% of our sample firms. We find that firms with greater regulatory climate change exposure are more likely to be targeted by BlackRock's climate risk engagements. This result further indicates that BlackRock cares about climate transition risk and directs its climate risk engagements towards firms with greater exposure to transition risk.

Last, in Column 4, we consider the number of climate incidents from RepRisk. We find that firms with more climate incidents are significantly more likely to be targeted by BlackRock's climate risk engagements. A greater number of climate incidents potentially increases the likelihood of facing legal and reputation costs. Taken together, the results indicate that BlackRock's decision to engage firms on climate risk issues depends on their exposure to climate transition risk and their carbon footprint.

While BlackRock's climate risk engagements are primarily driven by its portfolio firms' exposure to climate risk, climate risk engagements may also reflect responses to engagements by other investors or activism by other stakeholders such as NGOs (Sautner 2025). We collect the engagement reports of the two other "Big Three" investors, Vanguard and State Street (SSGA), from their respective websites, using the Wayback Machine (https://web.archive.org/) to retrieve reports that are no longer available online. This allows us to obtain Vanguard's stewardship reports for the period 2020-2023 and SSGA's stewardship reports for the period 2020-2022. We then construct a dummy variable equal to one if a firm is targeted by

13. In unreported tests, we find similar results if we restrict the sample to firms that report their carbon emissions (i.e., if we drop firms for which carbon emissions are estimated by Trucost).

a Vanguard or SSGA engagement in a given year, and zero otherwise. Because Vanguard and State Street do not disclose detailed information on the topics of their engagements, we consider any engagement by these two investors. We also collect data on NGO campaigns following Brendel et al. (2024). Specifically, we download the raw NGO campaign data from *sigwatch.com* for the period 2020-2023 and code a firm as targeted by an NGO campaign if it is identified as a target in any environmental campaign in year t.[14]

In Table IA.1, we start from the baseline specification of Table 3 and further include two indicator variables capturing whether a firm has received engagements from Vanguard or State Street and whether a firm has been targeted by an NGO campaign related to environmental issues. The coefficient on the first indicator variable is positive and statistically significant at the 1% level, indicating that firms targeted by BlackRock's climate risk engagements are also more likely to be engaged by the other two members of the "Big three". The coefficient on the NGO campaign indicator is weakly significant in column 2 but becomes insignificant in columns 3 and 4. This evidence suggests that BlackRock's climate risk engagements are unlikely to reflect second-round responses to NGO campaigns. When we control either for engagement by one of the two other "Big Three" investors or for NGO campaigns, the coefficients on the climate risk measures remain statistically significant and their magnitudes are similar to those in the baseline specification.

We conduct additional robustness tests of our determinants analysis. First, in Table IA.2, results are unchanged if we implement alternative clusterings of standard errors. In Panel A, we cluster standard errors at the firm and industry-year levels and in Panel B at the firm and country-year levels. Second, in Table IA.3, we check that our results hold when accounting for potentially non-linear size effects. In Panel A, we add the square of the natural logarithm of total assets as an additional control. The coefficient on $Ln(TotalAssets)^2$ is positive and statistically significant at the 1% level while the coefficient on size becomes negative, suggesting that the relation between firm size and BlackRock's climate engagement is convex.

14. An NGO environmental campaign is defined as one with issues including at least one of the keywords: "climate", "carbon", "emission", "environment", "pollution", "greenhouse", or "GHG".

In Panel B, we consider the potential non-linear impact of firm size on BlackRock's climate engagement in a non-parametric way, using size decile × year fixed effects. In both panels, we continue to find that firms with greater carbon emissions, greater climate risk, and a larger number of climate incidents are more likely to be targeted by BlackRock's climate risk engagements.

Finally, while the measures used in Table 3 primarily capture climate *transition* risk, we also examine whether firms with greater climate *physical* risk are more likely to be targeted by BlackRock's climate risk engagements. We consider two measures of physical climate risk. The first is the physical climate change exposure measure developed by Sautner et al. (2023). The second is Trucost's sensitivity-adjusted composite physical climate risk score, which encompasses seven dimensions of physical risk (water stress, heatwaves, cold waves, hurricanes, river flooding, coastal flooding, and wildfires) and is computed for different forecasting horizons. We focus on scores with horizons of 2030 and 2050. The results reported in Table IA.4 show that the coefficients on these physical risk measures are positive, although not statistically significant for the Trucost score with a 2030 horizon. This suggests that physical risk considerations motivate BlackRock's climate risk engagements primarily at long horizons (2050 rather than 2030), when firms' actions are likely to be most consequential.

4.1.2 The effect of the ESG backlash

The term "ESG backlash", which has gained prominence in recent years, refers to a shift in the demand for ESG policies by a subset of U.S. investors. This shift has been particularly pronounced in relation to climate policies. Although the precise timing is difficult to establish, early precursors include a 2021 Texas law banning public investment in funds that boycott energy companies. The backlash intensified in 2022, when Texas published an explicit list of targeted funds, including BlackRock (Rajgopal, Srivastava, and Zhao (2024)), and gained further momentum through 2023 as additional states adopted similar measures and political opposition to ESG investing became more widespread.

In this paper, we interpret the ESG backlash as a reduction in investor demand for climate-related policies. If BlackRock's efforts to influence portfolio firms' climate policies through engagements are indeed driven by client demand, then we should observe a decline in climate risk engagements following the onset of the backlash. A central theme in the backlash debate concerns the fiduciary duty of investment funds toward their clients. We predict that, following this debate, BlackRock concentrates its climate engagements on firms for which climate risk is more financially material.

The descriptive statistics presented in Table 1 show that the number of BlackRock's climate risk engagements declines markedly in 2023 and 2024, consistent with BlackRock responding to the ESG backlash by scaling back its climate risk engagements. Anecdotal evidence further suggests that, following the ESG backlash, BlackRock has toned down its climate agenda. For example, it withdrew from Climate Action 100+[15] and left the Net Zero Asset Manager (NZAM) initiative.[16]

To explore BlackRock's reaction to the backlash and its determinants in greater detail, we estimate the following regression at the firm-year level:

$$\begin{aligned}\text{Climate Risk Engagement}_{i,t} = \beta_0 + \beta_1 \text{Post-Backlash}_t + \beta_2\ \text{Materiality}_i \\ + \beta_3 \text{Materiality}_i \times \text{Post-Backlash}_t + \beta_4 \mathbf{X}_{i,t-1} + \epsilon_{i,t},\end{aligned} \tag{2}$$

where *Climate Risk Engagement*$_{i,t}$ is defined as above. *Post-Backlash*$_t$ is a dummy variable that takes the value of one in the post-backlash period (2023 and 2024) and zero otherwise.[17] *Materiality* is a dummy variable that takes the value of one when climate risk is classified as financially material for the firm's industry, according to the SASB framework. Unlike in the baseline specification, we do not include industry, country or year fixed effects as

15. Source: https://www.reuters.com/sustainability/sustainable-finance-reporting/investor-climate-group-suspends-activities-after-blackrock-exit-2025-01-13/

16. Source: https://www.netzeroassetmanagers.org/statement-on-blackrocks-departure-from-the-initiative/

17. As explained above, there is no obvious way to define pre- and post-backlash periods, so the cutoff is necessarily arbitrary. Our choice reflects the expectation that the effects of the backlash intensify toward the end of the sample period.

our primary focus is the effect of materiality, defined at the industry level, on engagement decisions before vs. after the backlash.

Table 4, Panel A reports the estimation of Equation (2). The coefficient on *Post-Backlash* is negative and statistically significant at the 1% level, indicating an overall decline in the likelihood of being targeted by climate risk engagements in the post-backlash period. By contrast, the coefficient on the interaction between *Post-Backlash* and *Materiality* is positive and statistically significant at the 1% level, with a magnitude similar to that of the standalone *Post-Backlash* effect. This indicates that the decrease in engagements after the backlash affects mostly firms that operate in industries in which climate risk is considered less financially material.

In Panel B, we examine whether the decline in climate risk engagements is more pronounced in specific geographic regions. We find no evidence that the decline is larger for either U.S. or European firms (relative to firms outside these two regions) following the ESG backlash. Thus, although the ESG backlash is primarily a U.S. phenomenon, it affects climate risk engagements across all geographical areas, perhaps because U.S. investors, who represent a large share of BlackRock's client base, invest in its global portfolios.

In Panels C and D, we examine whether, beyond the observed shift in industry focus, the determinants of climate risk engagements differ after versus before the ESG backlash within industries and countries. We find that, in the post-backlash period, firms with higher climate risk remain more likely to be targeted by BlackRock's climate risk engagements, although the coefficients decrease in magnitude and are no longer statistically significant for emission intensity and the regulatory climate risk measure from Sautner et al. (2023), perhaps because the post-backlash period spans only two years.

4.1.3 Other ESG engagements

Beyond climate risk, BlackRock also engages its portfolio firms on a range of other ES issues. While we expect carbon emissions and regulatory exposure to climate change to

primarily drive climate risk engagements, these variables may capture broader firm-level characteristics, such as size or visibility, so their association with climate engagements could partly reflect the fact that these characteristics are correlated with engagement activity more generally, not only with climate-related engagements.

Table 5 reports estimations of Equation (1) using as dependent variables different dummy variables equal to one when BlackRock engages the firm on environmental (other than climate risk) or social issues. We drop firm-year observations with climate risk engagements when considering other environmental engagements and firm-year observations with environmental engagements when considering social engagement.

In both panels, the results from columns 1 to 3 indicate that our first three proxies for climate risk (emissions, emission intensity and exposure to climate regulation) are unrelated to the likelihood of being engaged by BlackRock on any issue other than climate risk. In Column 4 of Panel A, the number of climate-related incidents from RepRisk is related to environment-related engagements but with a much smaller coefficient than in Table 3 (2.1 vs. 16.2), possibly because some incidents in the climate category have broader environmental dimensions. In panel B, on the contrary, the number of climate incidents reported by RepRisk is not correlated with engagements on social issues. Aggarwal et al. (2023) and Azar et al. (2021) provide mixed evidence regarding the association between carbon emissions and "Big Three" engagements. However, both studies consider ESG engagements in general. Our results show that breaking down ESG engagements by topic is important as carbon emissions predict climate risk engagements but not other ES engagements.

4.2 Engagement versus Voting or Divesting

In addition to engaging their portfolio firms on climate risk issues, large passive investors like BlackRock can seek to influence their climate policies through voting and divesting. In this section, we examine the interplay between BlackRock's climate engagements and its voting and divesting behavior. As a passive investor, BlackRock has little flexibility in

choosing its portfolio firms. It is therefore unlikely to exit or threaten to exit from firms with greater climate risk. As for voting and its interplay with engagement, the literature offers little guidance as voting and engagement are often viewed as two channels through which investors voice their climate-related concerns. One possibility is that BlackRock combines engagement with votes against management to clearly signal its dissatisfaction with a firm's climate policies and increase pressure on the firm to take climate actions. Alternatively, engagement may be associated with greater support for management. This could be the case if BlackRock seeks to foster cooperation and dialogue with engaged firms in order to facilitate the desired changes.

4.2.1 Engagement and Voting Behavior

We start by examining BlackRock's votes at portfolio firms it engages with. Specifically, we examine whether BlackRock is more likely to support directors in board elections and to vote in favor of climate proposals in firms that it engages on climate risk. Our focus on board elections is motivated by a growing literature showing that investors vote against directors to express their discontent about firms' ESG policies. Prior studies document that poor ES performance and disclosure are associated with lower support for directors in board elections (e.g., Aggarwal, Dahiya, and Yilmaz 2024; Ding et al. 2023; Garel, Michaely, and Romec 2025). We also study BlackRock's voting behavior on climate proposals. Climate proposals are submitted either by the management or by shareholders. Management typically opposes shareholder proposals. Therefore, supporting a shareholder-sponsored climate proposal implies voting against management.

We collect BlackRock's votes on management and shareholder proposals over the period 2020-2023. Over this period, BlackRock voted on 586,647 management and shareholder proposals, of which 220,350 are related to director elections and 378 are climate-related proposals.[18] For each proposal, we observe the management's recommendation and BlackRock's

18. We search for keywords in proposal descriptions to identify relevant items. Specifically, we use the keywords "emission", "climate", "GHG", "greenhouse", "CO_2", "carbon", "net zero", "net-zero", "Paris

vote. Table 6, Panels A and B report summary statistics of management recommendations and BlackRock's votes for the different subsets of proposals we consider. Management systematically recommends voting in favor of director elections and against most climate proposals, most of which are sponsored by shareholders. We also observe that BlackRock only supports a minority of climate proposals (171 out of 378).

We examine the voting behavior of BlackRock in firms it engages on climate risk issues by estimating the following regression at the proposal level:

$$\begin{aligned}\text{Vote For}_{p,i,t} = \beta_0 + \beta_1 \text{Director Election}_p + \beta_2 \text{Director Election}_p \times \text{Climate Risk Engagement}_{i,t} \\ + \beta_3 \text{Positive Mgt Reco}_p + \gamma_{i,t} + \epsilon_{p,i,t},\end{aligned} \tag{3}$$

where *Vote For*$_{p,i,t}$ is a dummy variable equal to one if BlackRock votes in favor of proposal p targeting firm i in year t. *Director Election*$_p$ is a dummy variable that identifies the subset of proposals related to director elections. *Climate Risk Engagement*$_{i,t}$ is a dummy variable equal to one if firm i receives at least one climate risk engagement from BlackRock in year t. *Positive Mgt Reco*$_p$ is a dummy variable equal to one if management recommends voting in favor of the proposal. All regressions include firm $\times$ year fixed effects, which control for any time-varying firm characteristics that may influence BlackRock's voting behavior (e.g., performance, governance, carbon emissions). The coefficient of interest β_2 captures the extent to which BlackRock supports directors in board elections in firms that are the targets of its climate risk engagements.

Table 7 reports the estimation of Equation (3). In Column 1, the coefficient on the interaction term *Director Election* $\times$ *Climate Risk Engagement* is positive and significant at the 1% level, indicating that BlackRock is significantly more likely to vote in favor of director election proposals in firms it engages on climate issues.

In Column 2, we re-estimate Equation (3) focusing on climate proposals instead of pro-

Agreement", and "transition plan" to identify climate-related proposals. We then manually review the results to remove false positives, most commonly cases where a director's name contains one of the keywords (e.g., Carbone, Carbonato, Carbonari, Greenhouse).

posals related to director elections. The results indicate that BlackRock is significantly less likely to vote in favor of climate proposals for firms it engages on climate risk issues. Given that many climate proposals are sponsored by shareholders, it further suggests that BlackRock is more likely to vote with management. In columns 3 and 4, we decompose climate proposals depending on whether they have received managerial support. The results confirm that, conditional on the firm being targeted by a climate risk engagement, BlackRock is significantly less likely to support climate proposals only when they have negative management recommendation. This finding complements recent evidence showing that universal investors are generally less supportive of climate-related shareholder proposals (Briere et al. 2024) and less confrontational with management (Heath et al. 2022). It is consistent with the conjecture of Briere et al. (2024) that universal investors see direct engagement as a more effective tool. Overall, this analysis of the interplay between BlackRock's climate-risk engagements and voting behavior suggests that BlackRock adopts a cooperative rather than confrontational approach toward the management of the firms it engages on climate issues to induce changes in climate policies.[19] The results do not preclude the possibility that BlackRock may move to a more confrontational approach (notably though votes against directors) when targeted firms do not cooperate. We study this possibility in Section 5.

4.2.2 Engagement and divestment

To examine the interplay between climate engagements and divestment, we estimate the following regression at the firm-year level for the period 2020-2024:

19. An alternative non-mutually exclusive interpretation is that BlackRock selectively engages firms with which it already maintains a cooperative relationship with management. In either case, the results suggest that BlackRock's climate engagements are generally characterized by cooperation and dialogue with corporate management.

$$\begin{aligned}\Delta\text{Ownership}_{i,t} = \beta_0 &+ \beta_1 \text{Climate Risk Measure}_{i,t} \times \text{Climate Risk Engagement}_{i,t} \\ &+ \beta_2 \text{Climate Risk Measure}_{i,t} + \beta_3 \text{Climate Risk Engagement}_{i,t} \\ &+ \beta_4 \mathbf{X}_{i,t-1} + \gamma_i + \delta_t + \epsilon_{i,t},\end{aligned} \tag{4}$$

where $\Delta Ownership_{i,t}$ is the change in BlackRock's ownership in firm i in year t and *Climate Risk Measure*$_{i,t}$ is one of the four proxies for firm-level climate risk used in Section 4.1. All regressions include firm and year fixed effects. The coefficient of interest β_1 captures whether BlackRock is less likely to divest from firms with greater climate risk when it engages them on climate risk issues.

In Table 8, which reports the estimation of Equation (4), the coefficients on the climate risk engagement dummy are not significant, indicating that BlackRock is not more likely to divest from firms it engages on climate issues. Regardless of the proxies for climate risk we consider, the coefficient on the interaction term is also statistically insignificant, indicating that BlackRock's divestment from firms with greater climate risk is independent from its climate risk engagements. These results are consistent with divestment not being BlackRock's preferred approach to deal with climate risk.

4.3 Outcomes of climate risk engagements

In this section, we examine three possible consequences at the firm level of BlackRock's climate risk engagements: commitment to adopt a climate target, climate-related disclosure, and carbon emissions.

4.3.1 Estimation design

One empirical challenge for this analysis is that data on climate risk engagements are recent and the post-engagement period is therefore relatively short. This may hinder our ability to observe changes in a firm's climate policy (if any) following a climate risk engagement.

We therefore focus on climate risk engagements made in 2020 and 2021 and use a stacked difference-in-difference setting comparing changes in climate-related policies pre- and post-engagement for the firms that receive a climate risk engagement relative to those that do not.[20] We examine changes in climate-related policies over a two-sided two-year window around the climate risk engagement. Specifically, we estimate the following regression at the firm-year level:

$$\text{Outcome}_{i,t,c} = \beta_0 + \beta_1 \text{Climate Risk Engagement}_{i,t,c} \times \text{Post}_{t,c} + \beta_2 \mathbf{X}_{i,t-1,c} + \gamma_{i,c} + \delta_{t,c} + \epsilon_{i,t,c}, \quad (5)$$

where the subscripts i, t, and c refer to firms, years, and cohorts of engagement (2020 or 2021), respectively. $Outcome_{i,t,c}$ is either a commitment to adopt a climate target, the disclosure of climate risks, or carbon emissions. $Climate\ Risk\ Engagement_{i,t,c}$ is a dummy variable that is equal to one for treated firms (i.e., those that receive a climate risk engagement), and $Post_{t,c}$ is a dummy variable that is equal to one after the engagement and zero before the engagement. The vector $\mathbf{X}_{i,t-1,c}$ contains the same firm characteristics as in earlier tests. We control for unobserved heterogeneity by including cohort-firm fixed effects ($\gamma_{i,c}$) and cohort-year fixed effects ($\delta_{t,c}$) in all regressions. These fixed effects absorb the effects of the standalone variables $Climate\ Risk\ Engagement_{i,c}$ and $Post_{t,c}$. Standard errors are clustered at the firm level. The coefficient of interest β_1 captures the differential in the outcome variable (i.e., commitment to adopt a climate target, disclosure of climate risks, or carbon emissions) for firms targeted by climate risk engagements relative to other firms, following the engagement. Table IA.5, Panel A reports the descriptive statistics for the sample used for the outcome analysis.

20. Before 2020, BlackRock does not provide detailed information on engagement topics, so we exclude all firms that appear in BlackRock's engagement report in 2019. We also exclude control firms (i.e., firms not targeted by a climate risk engagement in 2020 or 2021) that receive a climate risk engagement in 2022 or 2023. The results are robust if we relax these restrictions.

4.3.2 Commitment to adopt a climate target

The first outcome we consider is a firm's commitment to adopt a climate target. BlackRock regularly emphasizes the importance to adopt science-based climate targets. For example, in its 2030 net-zero statement, it claims that by 2030, more than 75% of its assets will be invested in issuers with science-based targets. Therefore, although we do not have information on the exact issues raised by BlackRock during its climate risk engagements, it is reasonable to expect that the adoption of climate targets is one of the objectives pursued by BlackRock through its engagements.

Our commitment measure captures whether a firm commits to setting a science-based climate target through the Science Based Targets initiative (SBTi). SBTi is a joint initiative of CDP, the United Nations Global Compact, the World Resources Institute (WRI), and the World Wide Fund for Nature (WWF), aimed at encouraging firms to play their part in addressing the climate crisis. Specifically, SBTi helps firms to set greenhouse gas emissions reductions targets aligned with the Paris Agreement's objective to limit global warming to 1.5°C and reach net-zero by 2050. To participate in SBTi, a firm must first send a commitment letter. It then has 24 months to submit its climate target to SBTi for validation. SBTi publishes on its website the list of firms that have sent commitment letters or have already had their climate targets validated.[21] Importantly, firms that commit but fail to adopt a science-based target appear with a "Commitment Removed" flag on SBTi's website. Therefore, firms can incur reputation costs if they fail to submit their climate-target after sending their commitment letter.[22]

Table 9 reports the estimation of Equation (5). The dependent variable is a dummy variable equal to one if a firm has an active commitment (i.e., the firm has sent the commitment letter to SBTi) at the end of year t. We drop firms that already had a commitment with

21. Source: https://sciencebasedtargets.org/companies-taking-action.
22. See for example: https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/22-us-companies-singled-out-for-not-filing-science-based-climate-targets-76869741.

SBTi before the engagement.[23] The coefficient on *Climate Risk Engagement* × *Post* is positive and statistically significant at the 1% level. Commitment to adopting a science-based target with SBTi increases by 4.4 percentage points for engaged firms, which is sizable given that the unconditional probability of having a SBTi commitment is small (1.5%).

The results from previous sections indicate that firms targeted by climate risk engagements differ from other firms along several dimensions including their carbon emissions, size, industry, and country. In Column 2 of Table 9, we examine whether the results hold if we use a matched sample instead of the full sample of firm-year controls. Specifically, by cohort, we match each targeted firm with its nearest-neighbor control firm based on industry, country, and firm-level covariates used in the determinants analysis, including carbon emissions, all measured in the pre-treatment year.[24] We continue to find that firms that have been targeted by BlackRock's climate risk engagements are significantly more likely to make a commitment to adopt a science-based target with SBTi.

4.3.3 Climate disclosure

Another objective that BlackRock may pursue is greater disclosure of climate risks and policies. Recent empirical evidence indicates that universal investors, and in particular "Big Three" investors, demand greater climate-related disclosure (Cohen, Kadach, and Ormazabal 2023; Ilhan et al. 2023). Moreover, BlackRock is a founding member of the Taskforce on Climate-related Financial Disclosures (TCFD) and publicly advocated high-quality climate-related disclosures.[25]

We measure climate risk disclosure using data from CDP, a popular platform for voluntary climate disclosure. Specifically, CDP sends an annual questionnaire asking companies to disclose information about their climate-related risks and opportunities as well as their strategies to address them. In 2023, CDP sent its climate-related questionnaire to more than

23. In unreported tests, we find that the results are unchanged if we relax this restriction.
24. Panel B of Table IA.5 reports the summary statistics for the matched sample.
25. Source: https://www.BlackRock.com/corporate/literature/whitepaper/spotlight-blk-supports-consistent-climate-related-disclosures-urges-global-coordination-june-2022.pdf.

14,000 firms worldwide. Contacted firms choose to respond on a voluntary basis. We obtain information about the firms to which CDP sends its questionnaire and restrict the analysis to these firms to ensure that a missing response reflects a firm's decision not to respond, rather than the fact that it did not receive the questionnaire. Finally, we exclude firms that were already responding to the CDP questionnaire before the engagement in order to focus on the decision to initiate climate-related disclosure.

Table 10 reports the estimation of Equation (5) where the dependent variable is a dummy variable that is equal to one if the firm responds to the CDP questionnaire. The results show that the coefficient on *Climate Risk Engagement* × *Post* is positive and statistically significant at the 1% level, indicating that among firms that were not disclosing climate-related information, those targeted by BlackRock's climate risk engagements are significantly more likely to answer CDP's questionnaire. The likelihood of answering increases by 20.3 percentage points, which is sizable compared to the unconditional probability of answering the questionnaire (about 50%). In Column 2, we use the matched sample described in the previous section and continue to find that among firms that were not disclosing climate-related information, those targeted by BlackRock's climate risk engagements are significantly more likely to answer CDP's questionnaire.[26]

4.3.4 Carbon emissions

Our evidence from Section 4.3.2 indicates that BlackRock's climate risk engagements lead to the adoption of climate targets. While failing to meet such targets can entail reputation costs, implementing the changes necessary to reach announced targets is also costly. Consistent with this argument, Bolton and Kacperczyk (2025) show that the effect of firm commitments on overall carbon emissions is small. We therefore examine whether BlackRock's climate risk engagements lead to lower carbon emissions.

Figure 2, Panels A and B, display the evolution of emission intensity (scope 1 and scope

26. Panel C of Table IA.5 reports the summary statistics for the matched sample we use in this test.

1&2) for targeted and control firms in the two years before and after BlackRock's climate risk engagements. We observe a decline in emission intensity following the engagement. This decline is primarily driven by a reduction in scope 1 emission intensity of a similar magnitude. In contrast, in Panels C and D, emissions appear largely unaffected by BlackRock's engagements. If anything, emissions decline slightly prior to the engagement and then remain relatively stable thereafter.

In Table 11, we examine the evolution of carbon emissions around engagements in the regression setting of Equation (5). In Panel A, the dependent variable is the level of carbon emissions (the natural logarithm of scope 1 and 2 emissions) or emission intensity (scope 1 and 2 emissions scaled by sales).[27] In Column 1, the coefficient on *Climate Risk Engagement*$\times$ *Post* is statistically insignificant, indicating that BlackRock's climate risk engagements are not associated with a decrease in the level of carbon emissions. By contrast, the results from Column 2 show that BlackRock's climate risk engagements are associated with a significant decrease in scope 1 and 2 emission intensity. The effect is significant at the 1% level. Economically, following climate risk-engagements, targeted firms experience a reduction of 6.5 percentage points in their scope 1 and 2 emission intensity, which represents about 10% of the standard deviation of the variable. In columns 3 and 4, we consider the intensity of scope 1 and scope 2 emissions separately. The results indicate that the observed decline in emission intensity is driven by scope 1 emission intensity, while scope 2 emission intensity is stable.

Overall, the results indicate that following climate risk engagements, targeted firms improve their carbon efficiency (i.e., they emit less per unit of sales), but that these efficiency gains are not primarily driven by a reduction in the absolute level of emissions. In other words, after engagement, emissions may continue to increase, but at a slower rate than sales. One alternative explanation is that our findings simply reflect higher sales growth among

27. Like in earlier tests, we restrict the sample to firms that report carbon emissions and drop firms for which carbon emissions are estimated to make sure that any change in carbon emissions is not due to a change in the estimation model used by Trucost. In unreported tests, we find that the results are unchanged if we also include in the sample firms for which carbon emissions are estimated by Trucost.

engaged firms, thereby mechanically reducing emission intensity. To address this concern, in Table IA.8 we scale emissions by total assets rather than sales and continue to find that emission intensity declines after climate risk engagements. In addition, in unreported tests, we obtain similar results if we include sales growth as an additional control.

Panel B of Table 11 reports the same regressions as Panel A using a matched sample.[28] In Column 1, the coefficient on *Climate Risk Engagement* × *Post* is positive but statistically insignificant. Columns 2–4 confirm our earlier finding that targeted firms experience a decline in emission intensity, primarily driven by a reduction in scope 1 emission intensity. Overall, the results from Panels A and B suggest that, although firms engaged by BlackRock achieve efficiency gains that reduce their emission intensity, they do not reduce their overall emissions, at least within the first few years following the engagement.

Next, we examine whether the reduction in emission intensity is more pronounced for certain firms. In Panel C, we report results separately for firms with high versus low level of emissions (i.e., above versus below the median as of 2019). The results indicate that the decline in scope 1 emission intensity following a climate risk engagement is concentrated among firms that are large emitters, i.e., firms with the largest climate impact.

4.3.5 Placebo tests

The results in the previous sections indicate that climate risk engagements are associated with subsequent changes in portfolio firms' climate policies. However, these changes may not be attributable specifically to BlackRock's climate-risk engagements. Instead, they may reflect underlying firm characteristics, such as size or visibility, that are correlated with engagement decisions more broadly, including engagements on non-climate issues. If so, firms that do not receive climate-risk engagements but receive social engagements may also improve their climate disclosure, make climate commitments, and ultimately reduce emissions. To examine this possibility, we conduct placebo tests by replicating our outcome analysis using

28. Panel D of Table IA.5 reports summary statistics for the matched sample used in this analysis.

social engagements in place of climate-risk engagements.

Table 12 reports the results of these placebo tests. In Column 1, the coefficient on *Social Engagement* × *Post* is statistically insignificant, indicating that firms targeted by social engagements are no more likely to adopt an SBTi commitment in subsequent years. Likewise, the coefficients in Columns 2 and 3 are not statistically significant, suggesting that firms targeted by social engagements are not significantly more likely to start responding to the CDP questionnaire or to decrease emission intensity. Overall, these placebo tests alleviate concerns that our findings are driven by omitted factors associated with the likelihood of being targeted by ES engagements more generally, rather than by climate risk engagements specifically.

4.3.6 Discussion of the results

The findings of the previous sections indicate that climate risk engagements can influence portfolio firms' climate policies. One potential concern in interpreting our outcome results as evidence of a causal effect of BlackRock's climate engagements on firm policies is that BlackRock does not act in isolation. Its push for climate action is part of a broader movement involving multiple stakeholders. Consequently, the policy changes we observe may not be attributable solely to BlackRock but rather to the collective influence of this wider movement. To mitigate this concern, in Table IA.6, we examine whether our results on post-engagement outcomes hold if we exclude i) firms that have been engaged by Vanguard and State Street, ii) firms targeted by Climate Action 100+, or iii) firms that have been the target of NGO campaigns.

First, we observe that the number of observations in Table IA.6 decreases by at most 32% relative to the corresponding baseline tables. This indicates that the overlap between BlackRock's engagements and those of the other institutions we consider is substantial, but far from complete. Second, regression coefficients tend to decrease slightly in magnitude, but remain economically and statistically significant in all the tests. While it is impossible

to observe and, therefore, control for the engagements of all investors and stakeholders, the fact that the results of our outcome analysis remain unchanged when we impose these restrictions mitigates the concern that our results are driven by confounding effects stemming from activism by other investors and stakeholders.

An alternative interpretation of our results is that BlackRock may strategically target its climate risk engagements toward firms already taking steps to address climate concerns or reduce carbon emissions. If this were the case, and if BlackRock's engagement decisions were informed by privately held information or publicly observable variables that are unobservable to the econometrician, it could introduce a selection bias in the analysis of BlackRock's climate risk engagements. The results from the determinant analysis somehow mitigate this concern as the results rather suggest that BlackRock primarily targets firms with greater level or intensity of carbon emissions.

To further address these concerns, we examine the dynamics of the relation between BlackRock's climate engagements and the decrease in emission intensity documented in the previous section. By construction, concerns about pretreatment trends do not arise for the SBTi commitment or CDP disclosure results, since the sample is restricted to firms without any prior commitment or CDP disclosure before treatment. In Table IA.7, we reestimate Equation (5) replacing the *Post* variable with dummies capturing the individual years surrounding the climate risk engagements. In this dynamic specification, we estimate effects relative to the year of the engagement (year T). The results show that, at conventional significance levels, the pretreatment trends of firms targeted by a climate risk engagement and control firms are indistinguishable. Treated firms have slightly higher emission intensity pre-engagement, but the difference with emission intensity of control firms is roughly constant. The relative decrease in scope 1 emissions intensity for engaged firms is only observed after the engagement. The absence of pre-engagement differences is inconsistent with BlackRock strategically engaging firms that are already taking climate actions or are on a path to decarbonization, unless BlackRock has private information about imminent climate actions

at the time of engagement. It also alleviates the concern that BlackRock's engagements are simply echoing broader pushes for climate action.

5 Response to corporate inaction following engagement

In this section, we examine whether, and how, BlackRock responds when targeted firms fail to take climate actions following climate risk engagements. Although we do not observe the requests that BlackRock submits to the firms it engages, our earlier results suggest that they lead firms to commit to act on their emissions and to disclose them more. Moreover, BlackRock tends to be supportive of management once it engages a firm. This, however, could change depending on whether engaged firms respond to BlackRock's request. If BlackRock is determined to influence the climate policies of the firms it engages, it should employ an escalation strategy, whereby it supports management as long as it responds to BlackRock's requests and starts using complementary tools against firms that do not cooperate.

We explore two possible responses against firms that were previously targeted but have not subsequently taken climate-related actions: i) re-engagement and ii) voting behavior towards directors.[29] For this analysis, we focus on climate commitment and climate disclosure (i.e., whether a firm responds to the CDP questionnaire), as both represent binary and clearly identifiable climate actions. By contrast, changes in carbon emissions are continuous and less immediate, making it more difficult to assess whether—and to what extent—firms respond to BlackRock's climate risk engagements.

We first investigate whether BlackRock re-engages firms that do not respond to (previous) climate risk engagements. Table 13, columns 1 and 2 report regression estimates where the dependent variable is a dummy variable equal to one if a firm is engaged by BlackRock on climate risk in year t. The key explanatory variables are the interaction between *Climate Risk Engagement*$_{i,t-1}$ and the two variables capturing climate inaction in year t, i.e., the absence of an SBTi commitment (Column 1) and by the absence of a response to the

29. In unreported tests, we also verify that failure to act post-engagement does not lead BlackRock to exit.

CDP questionnaire (Column 2). The interaction term identifies firms that were targeted by BlackRock on climate risk issues in year *t-1* but failed to take observable climate actions in year *t*. In both columns, the coefficient on the interaction term is positive and statistically significant, indicating that, conditional on having been targeted in the previous year, firms that do not take climate actions, either through SBTi commitments or CDP disclosure, are more likely to be re-engaged by BlackRock the following year.

In columns 3 and 4, we examine whether BlackRock adjusts its voting behavior and reduces support for directors when firms do not respond to climate risk engagements.[30] In both columns, the dependent variable is the average voting support for directors, aggregated at the firm-year level. The results from Column 3 show that the coefficient on the interaction term is negative and statistically significant at the 10% level, indicating that BlackRock reduces its voting support for directors at firms that, conditional on having been targeted, do not make climate commitments. In Column 4, the interaction coefficient is also negative and of similar magnitude, though not statistically significant. This lack of significance may reflect greater estimation noise due to the smaller sample for CDP, as well as the fact that responding to the CDP questionnaire may require more time and organizational effort than making an SBTi commitment.

Taken together, these findings suggest that BlackRock responds to firms' climate inaction following engagement by both intensifying engagement efforts and reducing voting support for directors. These findings are consistent with an escalation strategy in which engagement is repeated and complemented by voting pressure when firms remain unresponsive.

6 Conclusion

Pressure from institutional investors is viewed as one of the most powerful forces in the fight against climate change. Despite the promises of shareholder engagement on climate issues,

30. For this analysis of BlackRock's response to climate inaction, we focus on its voting support for director elections. While BlackRock may also adjust its voting behavior on shareholder climate proposals, the limited number of such proposals prevents us from having a sufficiently large sample to examine this possibility.

there is little empirical evidence on their effectiveness. We advance the literature by studying climate risk engagements by BlackRock, one of the world's largest investors.

We show that climate risk engagements represent a substantial fraction of BlackRock's total engagements and are more frequent in high carbon emissions industries. At the firm-level, firms with greater carbon emissions, emission intensity, and exposure to climate risk are more likely to be targeted.

We further document that BlackRock's climate risk engagements are associated with a greater support for management (i.e., greater voting support for director elections), suggesting that BlackRock seeks to foster communication and cooperation rather than confrontation with management to obtain changes in firms' climate policies. BlackRock is also less likely to support shareholder-sponsored climate proposals in firms it engages on climate risk, consistent with BlackRock viewing these proposals as too prescriptive and constraining and potentially conflicting with the objectives of its engagements.

We also provide evidence suggesting that climate risk engagements have real effects on firms' climate policies. Targeted firms are more likely to commit to adopting a science-based climate target and to disclose information about their climate risks. They also experience a significant reduction in carbon emission intensity but not in their overall emissions. Finally, we find that BlackRock responds to firms' failure to act through an escalation strategy: it re-engages previously targeted firms that do not take climate action. We also find suggestive evidence that BlackRock reduces its voting support for directors at firms that remain inactive following engagement.

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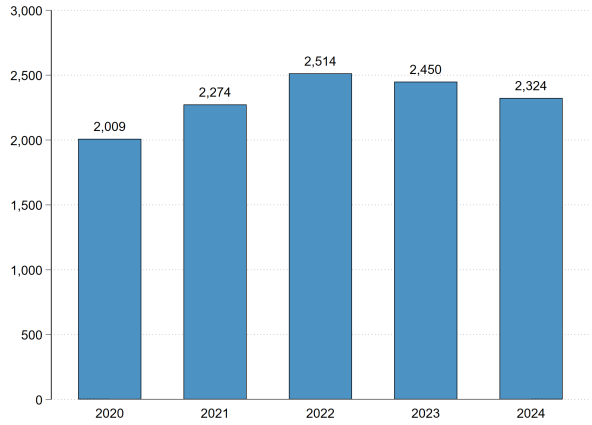
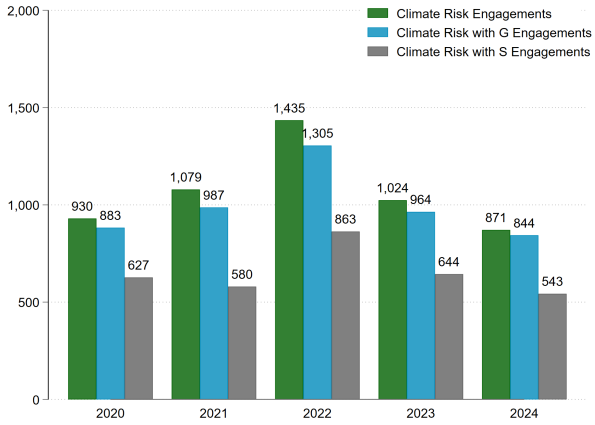
Figure 1: Number of Engagements Over Time

This figure provides descriptive statistics on BlackRock's climate risk engagements as well as on other ESG engagements over the period 2020-2024. Panel A reports the number of firms targeted by BlackRock's ESG engagements between 2020 and 2024. Panel B reports the number of firms with climate risk engagements and, among those, the number of firms that also receive governance or social engagements. Panel C reports the number of firms with environmental (excluding climate risk) engagements and, among those, the number of firms that also receive governance or social engagements. Panel D reports the number of firms with social engagements and, among those, the number of firms that also receive governance or environmental engagements.

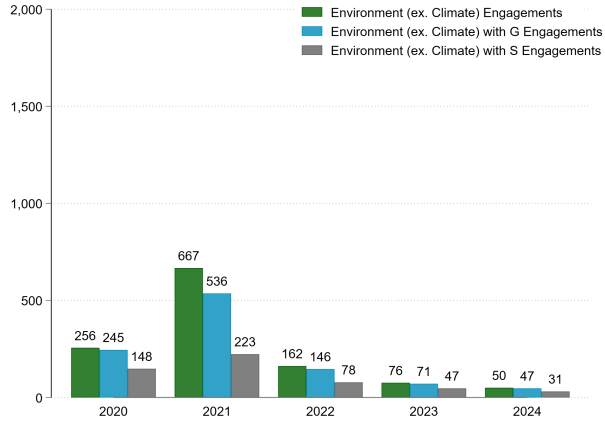
Panel A: All Engagements



Panel B: Climate Risk Engagements



Panel C: Environmental Engagements (Excluding Climate)



Panel D: Social Engagements

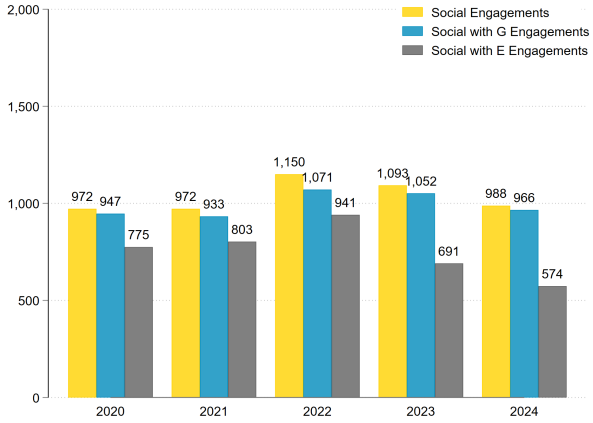
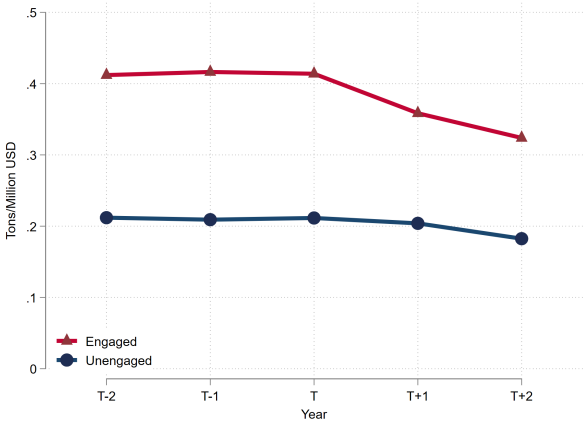


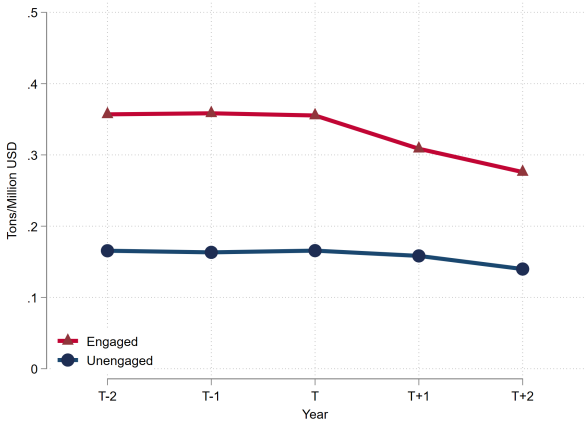
Figure 2: Evolution of Carbon Emissions for Firms Targeted by Climate Risk Engagement and Control Firms

This figure reports the time-series evolution of the average intensity of scope 1 and 2 emissions (Panel A) and scope 1 emissions (Panel B) for the firms targeted by climate risk engagement in 2020 and 2021 and control firms before and after the engagement (at year T). Panels C and D report the time-series evolution of the average level of scope 1 and 2 emissions and scope 1 emissions, respectively. The sample is restricted to firms that report their carbon emissions (i.e., we exclude firms for which carbon emissions are estimated by Trucost).

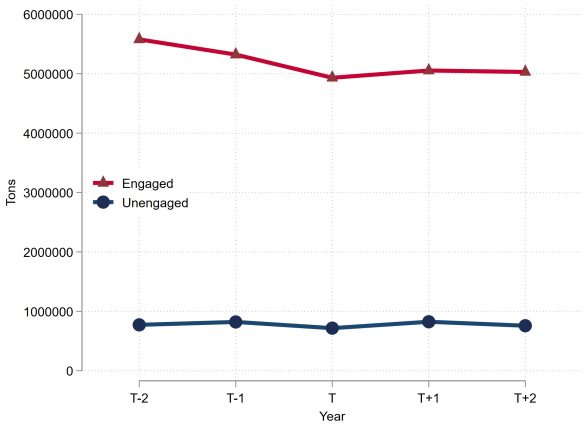
Panel A: CO_2 Emission Intensity – Scope 1 & 2



Panel B: CO_2 Emission Intensity – Scope 1



Panel C: CO_2 Emission Levels – Scope 1 & 2



Panel D: CO_2 Emission Levels – Scope 1

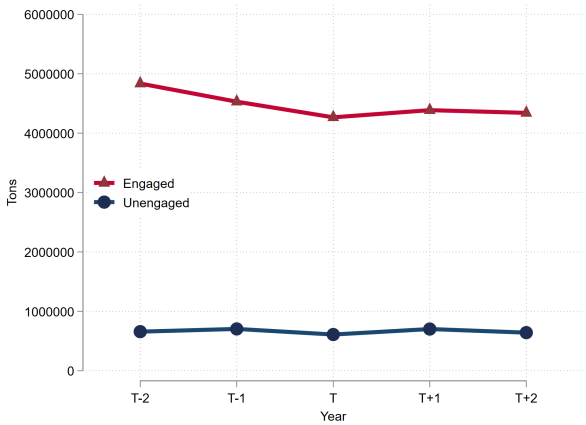


Table 1: Descriptive Statistics of BlackRock's ESG and Climate Risk Engagements

This table provides descriptive statistics on BlackRock's climate risk engagements as well as on other ESG engagements over the period 2020-2024. Panel A reports the total number of firms with ESG engagements made by BlackRock annually between 2020 and 2024. It breaks down these engagements into the following issues: climate risk engagements (and the percentage of these firms with governance or social engagements), environmental excluding climate risk engagements (and the percentage of these firms with governance or social engagements), and social engagements (and the percentage of these firms with governance or environmental engagements). Panel B reports the fraction of unique portfolio firms targeted by BlackRock on the different ESG issues across years. Panels C and D report the breakdown of climate risk engagements by industry (FF49 industries) and by country, and the percentage of unique firms targeted in each industry or country.

Panel A: Total Number of Firms Targeted by BlackRock on Different ESG Issues over Time

	2020	2021	2022	2023	2024
All	2,009	2,274	2,514	2,450	2,324
E - Climate Risk	930	1,079	1,435	1,024	871
E - Climate with G (%)	94.95	91.47	90.94	94.14	96.90
E - Climate with S (%)	67.42	53.75	60.14	62.89	62.34
Environment (ex. Climate)	256	667	162	76	50
Environment (ex. Climate) with G (%)	95.70	80.36	90.12	93.42	94.00
Environment (ex. Climate) with S (%)	57.81	33.43	48.15	61.84	62.00
Social	972	972	1,150	1,093	988
Social with G (%)	97.43	95.99	93.13	96.25	97.77
Social with E (%)	79.73	82.61	81.83	63.22	58.10

Panel B: Fraction of Unique Firms Targeted by BlackRock's ESG Engagements over Time

	2020	2021	2022	2023	2024
All	0.16	0.17	0.18	0.18	0.17
Environmental	0.09	0.13	0.12	0.08	0.07
Social	0.08	0.07	0.08	0.08	0.07
Governance	0.15	0.15	0.17	0.18	0.17
E - Climate Risk	0.07	0.08	0.11	0.08	0.07

Panel C: Number and Percentage of Climate Risk Engagements by Industry (FF49)

	Number of Engagements	Percentage of Engagements (%)	Percentage of Unique Firms Engaged (%)
Banking	459	8.90	8.82
Utilities	423	8.20	24.22
Petroleum and Natural Gas	331	6.42	22.68
Trading	317	6.15	5.39
Transportation	271	5.25	12.18
Retail	239	4.63	6.67
Insurance	230	4.46	12.78
Chemicals	205	3.97	9.96
Steel Works Etc	172	3.33	11.89
Computer Software	171	3.32	2.82
Electronic Equipment	155	3.01	6.29
Wholesale	136	2.64	5.16
Automobiles and Trucks	132	2.56	8.51
Construction Materials	131	2.54	10.82
Food Products	130	2.52	9.86
Communication	124	2.40	7.82
Machinery	123	2.38	6.82
Pharmaceutical Products	117	2.27	1.30
Almost Nothing	113	2.19	8.00
Business Services	106	2.06	3.22
Real Estate	96	1.86	3.88
Construction	95	1.80	8.33
Non-Metallic and Industrial Metal Mining	93	1.80	7.98
Consumer Goods	72	1.40	4.86
Restaurants, Hotels, Motels	61	1.18	3.60
Business Supplies	54	1.05	11.67
Precious Metals	47	0.91	9.09
Measuring and Control Equipment	47	0.91	5.77
Electrical Equipment	44	0.85	3.80
Beer and Liquor	42	0.81	12.66
Apparel	42	0.81	5.41
Coal	42	0.81	15.09
Medical Equipment	41	0.79	1.50
Aircraft	41	0.79	14.55
Entertainment	34	0.66	3.80
Personal Services	32	0.62	6.06
Computer Hardware	30	0.58	5.51
Candy and Soda	20	0.39	8.11
Healthcare	20	0.39	1.08
Shipping Containers	20	0.39	10.00
Rubber and Plastic Products	19	0.37	3.30
Printing and Publishing	15	0.29	6.12
Recreation	13	0.25	3.95
Shipbuilding, Railroad Equipment	13	0.25	4.08
Tobacco Products	11	0.21	0.00
Agriculture	10	0.19	4.92
Fabricated Products	7	0.14	7.69
Defense	7	0.14	11.54
Textiles	5	0.10	4.62

Panel D: Number and Percentage of Climate Risk Engagements by Country

	Number of Engagements	Percentage of Engagements (%)	Percentage of Unique Firms Engaged (%)
United States	1,920	35.96	9.96
Japan	626	11.73	6.83
Australia	272	5.09	14.79
United Kingdom	242	4.53	5.86
Brazil	199	3.73	17.82
Canada	158	2.96	5.94
China	146	2.73	2.87
France	121	2.27	15.08
Mexico	118	2.21	30.49
Germany	115	2.15	15.03
Cayman Islands	103	1.93	3.63
Taiwan	94	1.76	3.20
Switzerland	90	1.69	9.36
South Korea	80	1.50	3.21
Hong Kong	77	1.44	15.22
Bermuda	64	1.20	9.04
Netherlands	63	1.18	13.59
Italy	49	0.92	7.62
Ireland	44	0.82	18.64
India	38	0.71	1.88
Sweden	33	0.62	3.30
Other	687	12.87	4.44

Table 2: Summary Statistics

This table reports summary statistics at the firm-year level of variables used in the determinant analysis. Variable definitions are provided in Appendix A. All continuous variables are winsorized at 1% and 99% levels.

Variable	Mean	SD	Median	N
Dummy (Climate Risk Engagement)	0.10	0.30	0.00	47,392
Environmental (excl. climate) Engagement	0.02	0.15	0.00	47,392
Social Engagement	0.10	0.30	0.00	47,392
Governance Engagement	0.20	0.40	0.00	47,392
BlackRock Ownership (%)	3.32	4.20	1.27	47,392
Share in BR Portfolio ($\times$ 10,000)	0.32	0.96	0.02	47,392
Tangibility	0.25	0.22	0.19	47,392
Ln (Total Assets)	7.72	1.82	7.62	47,392
Cash Ratio	0.18	0.19	0.12	47,392
Debt Ratio	0.25	0.21	0.21	47,392
Market-to-Book	1.99	3.59	1.05	47,392
ROA	0.05	0.16	0.06	47,392
Past Year Stock Return	0.17	0.85	0.04	47,392
Climate Action 100+	0.01	0.12	0.00	47,392
Ln (CO_2 Emissions)	10.59	2.73	10.57	47,392
CO_2 Emissions Intensity (Ton/000)	0.23	0.72	0.04	47,392
Regulation Climate Risk	0.02	0.15	0.00	23,795
Ln (1 + #Climate Incidents)	0.06	0.19	0.00	47,392
Ln (1 + #Other Incidents)	0.34	0.65	0.00	47,392
Physical Risk	0.02	0.66	0.00	23,795
Materiality	0.13	0.34	0.00	47,392
Trucost Physical Risk Score – 2030 Horizon	36.01	18.06	36.00	34,010
Trucost Physical Risk Score – 2050 Horizon	37.50	19.01	37.00	34,010

Table 3: Determinants of Climate Risk Engagements

This table reports estimates of regressions at the firm-year level examining the determinants of the likelihood of being targeted by BlackRock's climate risk engagements. In all regressions, the dependent variable is a dummy variable equal to one if the firm receives at least one climate risk engagement during the year. We multiply this variable by 100. The main independent variables of interest are the natural logarithm of scope 1 and 2 emissions (Column 1), the ratio of scope 1 and 2 emissions to sales (Column 2), the measure of regulatory climate risk from Sautner et al. (2023) (Column 3), and the number of Reprisk climate incidents and other incidents (Column 4). Variable definitions are provided in Appendix A. In all specifications, we include country × year and industry × year fixed effects, and all independent variables are lagged by one year. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.495***			
	(0.128)			
CO2 Emissions Intensity		1.115***		
		(0.354)		
Regulation Climate Risk			5.455***	
			(1.884)	
Ln (1 + #Climate Incidents)				16.150***
				(1.382)
Ln (1 + #Other Incidents)				2.459***
				(0.368)
BlackRock Ownership (%)	0.639***	0.647***	0.426***	0.690***
	(0.064)	(0.065)	(0.073)	(0.065)
Share in BR Portfolio (× 10000)	4.618***	4.691***	4.213***	3.782***
	(0.361)	(0.372)	(0.414)	(0.361)
Climate Action 100+	24.847***	25.567***	19.407***	20.699***
	(2.347)	(2.352)	(2.474)	(2.388)
Tangibility	5.132***	7.584***	9.879***	7.123***
	(1.087)	(1.080)	(1.735)	(1.047)
Ln (Total Assets)	2.961***	4.329***	5.256***	3.520***
	(0.192)	(0.160)	(0.244)	(0.160)
Cash Ratio	8.098***	6.873***	8.456***	5.523***
	(0.976)	(0.969)	(1.596)	(0.941)
Debt Ratio	-1.226	-0.821	-0.343	-0.824
	(0.838)	(0.843)	(1.205)	(0.818)
Market-to-Book	-0.148**	-0.176***	-0.020	-0.124**
	(0.064)	(0.065)	(0.093)	(0.062)
ROA	-4.824***	-1.549*	-4.085***	-1.050
	(0.850)	(0.801)	(1.229)	(0.769)
Past Year Stock Return	0.426***	0.457***	0.283	0.431***
	(0.130)	(0.130)	(0.180)	(0.126)
R-squared	0.234	0.230	0.245	0.241
No. obs	47,392	47,392	23,760	47,392
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes

Table 4: Determinants of Climate Risk Engagements – Effect of the ESG Backlash

This table reports estimates of regressions at the firm-year level examining BlackRock's climate risk-engagements after vs. before the ESG backlash. In all regressions, the dependent variable is a dummy variable equal to one if the firm receives at least one climate risk engagement during the year. We multiply this variable by 100. Panel A reports regressions where the main independent variable of interest is the interaction between $Post - Backlash$ (a dummy variable that takes the value of one in the post-backlash period (2023 and 2024) and zero otherwise), and $Materiality$ (a dummy variable that is equal to one for firms belonging to industries for which climate risk is classified as financially material according to the SASB framework). Panel B reports regressions where the main independent variable of interest is the interaction between $Post - Backlash$ and dummy variables equal to one for firms located in the US and in Europe. Panels C and D reproduce the regressions from Table 3 for the pre- and post-ESG backlash period. Variable definitions are provided in Appendix A. All specifications of panels C and D include country × year and industry × year fixed effects, and all independent variables are lagged by one year. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Financially Material Industries

	Climate Risk Engagement (× 100)
	(1)
Post-Backlash	-2.257***
	(0.239)
Materiality=1	3.056***
	(0.735)
Materiality=1 × Post-Backlash	2.341***
	(0.853)
R-squared	0.173
No. obs	47,392
Other Controls	Yes

Panel B: US vs. EU

	Climate Risk Engagement (× 100)		
	(1)	(2)	(3)
USA	-1.887***		-2.280***
	(0.672)		(0.678)
USA × Post-Backlash	-0.161		-0.047
	(0.589)		(0.596)
EU		-1.706***	-2.155***
		(0.653)	(0.655)
EU × Post-Backlash		1.011	0.956
		(0.835)	(0.847)
R-squared	0.190	0.190	0.190
No. obs	47,392	47,392	47,392
Other Controls	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes

Panel C: Determinants − 2020-22

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.601***			
	(0.154)			
CO2 Emissions Intensity		1.430***		
		(0.388)		
Regulation Climate Risk			7.085***	
			(2.485)	
Ln (1 + #Climate Incidents)				17.215***
				(1.674)
Ln (1 + #Other Incidents)				3.243***
				(0.444)
R-squared	0.238	0.235	0.254	0.247
No. obs	29,772	29,772	14,428	29,772
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes

Panel D: Determinants − 2023-24

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.344***			
	(0.158)			
CO2 Emissions Intensity		0.483		
		(0.482)		
Regulation Climate Risk			3.534	
			(2.755)	
Ln (1 + #Climate Incidents)				14.698***
				(2.022)
Ln (1 + #Other Incidents)				1.017*
				(0.540)
R-squared	0.226	0.222	0.230	0.230
No. obs	17,620	17,620	9,332	17,620
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes	Yes

Table 5: Determinants of Other Engagements

This table reports estimates of regressions at the firm-year level examining the determinants of the likelihood of being targeted by BlackRock on environmental, social, or governance issues. The dependent variables are dummy variables equal to one for firms engaged by BlackRock on environmental (Panel A) and social (Panel B) issues. We multiply these variables by 100. For the sake of brevity, we only report the coefficients and standard errors for our main independent variables. We drop firm-year observations with climate risk engagements when considering other environmental engagements and firm-year observations with environmental engagements when considering social engagements. In all specifications, we include country × year and industry × year fixed effects, and all independent variables are lagged by one year. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Determinants of BlackRock's Environmental Engagements

	Environmental (excl. climate) Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	-0.015			
	(0.055)			
CO2 Emissions Intensity		0.114		
		(0.136)		
Regulation Climate Risk			1.097	
			(1.276)	
Ln (1 + #Climate Incidents)				2.075**
				(0.845)
Ln (1 +#Other E Incidents)				0.574
				(0.806)
Ln (1 + #S&G Incidents)				1.674***
				(0.231)
R-squared	0.117	0.117	0.141	0.122
No. obs	42,597	42,597	19,959	42,597
Other Controls and FEs	Yes	Yes	Yes	Yes

Panel B: Determinants of BlackRock's Social Engagements

	Social Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	0.007			
	(0.065)			
CO2 Emissions Intensity		-0.150		
		(0.107)		
Regulation Climate Risk			-1.455	
			(1.291)	
Ln (1 + #Climate Incidents)				0.061
				(0.900)
Ln (1 +#S Incidents)				1.243***
				(0.406)
Ln (1 + #Other E&G Incidents)				1.347***
				(0.334)
R-squared	0.102	0.102	0.130	0.106
No. obs	41,496	41,496	19,038	41,496
Other Controls and FEs	Yes	Yes	Yes	Yes

Table 6: Distribution of BlackRock Votes

This table provides descriptive statistics on management recommendations (Panel A) and BlackRock votes (Panel B) for the following two subsets of management and shareholder proposals that BlackRock voted on during the period 2020-2023: i) climate proposals and ii) director elections.

Panel A: Management Recommendations

	Against	For	None
Climate Proposals	236	134	8
Director Elections	0	220,350	0

Panel B: BlackRock Votes

	Abstain	Against	For	Withhold
Climate Proposals	2	203	171	2
Director Elections	532	15,512	198,134	6,172

Table 7: Climate Risk Engagements and Voting

This table reports estimates of the effect of climate risk engagements on BlackRock voting support for different subsets of management and shareholder proposals. In all regressions, the dependent variable is a dummy variable that is equal to one if BlackRock votes in favor of the proposal (and zero otherwise). The main independent variable of interest is the interaction between *Climate Risk Engagement* and dummy variables identifying proposals related to two subsets of management and shareholder proposals: director elections (Column 1) and climate proposals (Column 2). In columns 3 and 4, we further differentiate between climate proposals with positive and negative management recommendations. All regressions include firm × year fixed effects. Standard errors, reported in parentheses, are clustered by firm-year. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	BlackRock Vote is "For"			
	(1)	(2)	(3)	(4)
Management Recommendation is "For"	0.671***	0.662***	0.663***	0.661***
	(0.006)	(0.006)	(0.006)	(0.006)
Director Election	-0.033***			
	(0.001)			
Director Election × Climate Risk Engagement	0.034***			
	(0.004)			
All Climate Proposals		0.027		
		(0.034)		
All Climate Proposals × Climate Risk Engagement		-0.128***		
		(0.040)		
Climate Proposals with Mgt "For"			0.025	
			(0.022)	
Climate Proposals with Mgt "For" × Climate Risk Engagement			-0.043	
			(0.036)	
Climate Proposals with Mgt "Against"				0.029
				(0.067)
Climate Proposals with Mgt "Against" × Climate Risk Engagement				-0.162**
				(0.072)
Firm × Year FE	Yes	Yes	Yes	Yes
R-squared	0.305	0.304	0.304	0.304
No. obs	586,647	586,647	586,647	586,647

Table 8: Climate Risk Engagements and Divestment

This table reports estimates of regressions at the firm-year level where the dependent variable is the percentage change in BlackRock ownership in a given firm. The main independent variable of interest is the interaction between *Climate Risk Engagement* and the measures of climate risk considered in Table 3: carbon emissions (Column 1), carbon emission intensity (Column 2), the measure of regulatory climate exposure from Sautner et al. (2023) (Column 3), and the number of climate incidents from RepRisk (Column 4). All regressions include firm and year fixed effects as well as the set of control variables from Table 3. Standard errors, reported in parentheses, are clustered by firm-year. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Change in BlackRock Ownership			
	(1)	(2)	(3)	(4)
Climate Risk Engagement	0.217	0.031	0.019	0.036
	(0.157)	(0.032)	(0.037)	(0.034)
Ln (CO_2 Emissions)	-0.020			
	(0.013)			
Climate Risk Engagement × Ln (CO_2 Emissions)	-0.016			
	(0.012)			
CO2 Emissions Intensity		-0.052**		
		(0.026)		
Climate Risk Engagement × CO2 Emissions Intensity		-0.027		
		(0.021)		
Regulation Climate Risk			-0.086	
			(0.072)	
Climate Risk Engagement × Regulation Climate Risk			0.111	
			(0.132)	
Ln (1 + #Climate Incidents)				0.066
				(0.043)
Climate Risk Engagement × Ln (1 + #Climate Incidents)				-0.095
				(0.079)
R-squared	0.475	0.475	0.475	0.475
No. obs	50,206	50,206	24,438	50,206
Other Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 9: Outcomes of Climate Risk Engagements - Climate Targets

This table reports estimates of stacked difference-in-differences regressions at the firm-year level examining the relation between climate risk engagement and the commitment to set a science-based climate target with SBTi. The dependent variable is a dummy variable equal to one if the firm has sent a commitment letter to SBTi to adopt a climate target. We focus on climate risk engagements made in 2020 and 2021, the sample period covers a window of two years before and two years after the climate risk engagement. The main independent variable of interest is the interaction between *Climate Risk Engagement* (a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement) and *Post* (a dummy variable that is equal to one after the engagement and zero before the engagement). In column 2, we reestimate the regression of Column 1 using a matched sample. Control variables are the same as in Table 3 and are lagged by one year. All regressions include firm-cohort and year-cohort fixed effects. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	SBTi Commitment (× 100)	SBTi Commitment (× 100)
	(1)	(2)
Climate Risk Engagement × Post	4.423***	3.919***
	(0.716)	(0.817)
No. obs	49,466	11,110
Other Controls	Yes	Yes
Matched Sample	No	Yes
Firm-cohort FE	Yes	Yes
Year-cohort FE	Yes	Yes

Table 10: Outcomes of Climate Risk Engagements - Disclosure from CDP

This table reports estimates of stacked difference-in-differences regressions at the firm-year level examining the relation between climate risk engagement and climate-related disclosure. The dependent variable is a dummy variable that is equal to one if the firm responds to CDP questionnaire. We focus on climate risk engagements made in 2020 and 2021. The sample period covers a window of two years before and two years after the climate risk engagement. The main independent variable of interest is the interaction between *Climate Risk Engagement* (a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement) and *Post* (a dummy variable that is equal to one after the engagement and zero before the engagement). In Column 2, we reestimate the regression of Column 1 using a matched sample. Control variables are the same as in Table 3 and are lagged by one year. All regressions include firm-cohort and year-cohort fixed effects. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Climate Risk Disclosure (× 100)	
	Without Disclosure before Engagement	
Climate Risk Engagement × Post	20.266***	15.637***
	(3.739)	(3.536)
No. obs	8,025	2,220
Other Controls	Yes	Yes
Matched Sample	No	Yes
Firm-cohort FE	Yes	Yes
Year-cohort FE	Yes	Yes

Table 11: Outcomes of Climate Risk Engagements - CO_2 Emissions

Panel A reports estimates of stacked difference-in-differences regressions at the firm-year level examining the relation between climate risk engagement and future carbon emissions. The dependent variable is the natural logarithm of scope 1 and 2 emissions (Column 1), the intensity of scope 1 and 2 emissions (Column 2), the intensity of scope 1 emissions (Column 3) and the intensity of Scope 2 emissions (Column 4). We focus on climate risk engagements made in 2020 and 2021. The sample period covers a window of two years before and two years after the climate risk engagements. The main independent variable of interest is the interaction between *Climate Risk Engagement*, a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement) and *Post*, a dummy variable that is equal to one after the engagement and zero before the engagement. We restrict the sample to firms that report their carbon emissions (i.e., we exclude firms for which carbon emissions are estimated by Trucost). In Panel B, we estimate the regressions of Panel A using a matched sample. Panel C reports the results of estimating the regression from Panel A, Column 3 separately for firms with high versus low scope 1 emission level (as of 2019). All regressions include firm-cohort and year-cohort fixed effects. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Scope 1-2 Emissions − Levels and Intensity

	Ln (Scope 1-2)	Int (Scope 1-2)	Int (Scope 1)	Int (Scope 2)
	(1)	(2)	(3)	(4)
Climate Risk Engagement × Post	0.010	-0.065***	-0.065***	0.000
	(0.025)	(0.020)	(0.019)	(0.002)
No. obs	14,815	14,815	14,815	14,815
Other Controls	Yes	Yes	Yes	Yes
Firm-cohort FE	Yes	Yes	Yes	Yes
Year-cohort FE	Yes	Yes	Yes	Yes

Panel B: Scope 1-2 Emissions − Levels and Intensity − Matched Sample

	Ln (Scope 1-2)	Int (Scope 1-2)	Int (Scope 1)	Int (Scope 2)
	(1)	(2)	(3)	(4)
Climate Risk Engagement × Post	0.043	-0.049**	-0.049**	0.000
	(0.029)	(0.020)	(0.019)	(0.002)
No. obs	6,142	6,142	6,142	6,142
Other Controls	Yes	Yes	Yes	Yes
Firm-cohort FE	Yes	Yes	Yes	Yes
Year-cohort FE	Yes	Yes	Yes	Yes

Panel C: Scope 1 Emission Intensity by Level of Emissions

	Int (Scope 1)	
	High Scope 1 Emission Level	Low Scope 1 Emission Level
	(1)	(2)
Climate Risk Engagement × Post	-0.092***	0.005
	(0.029)	(0.006)
No. obs	7,110	7,506
Other Controls	Yes	Yes
Firm-cohort FE	Yes	Yes
Year-cohort FE	Yes	Yes

Table 12: Outcomes of Climate Risk Engagements – Placebo Test with S Engagements

This table reports the main regressions from the outcome analysis (Tables 9 to 11) using social engagements as placebo engagements. The dependent variable is a dummy variable equal to one if the firm has sent a commitment letter to SBTi to adopt a climate target (Column 1), and a dummy variable that is equal to one if the firm responds to CDP questionnaire (Column 2), and the intensity of scope 1 emissions (Column 3). We focus on social engagements made in 2020 and 2021. The sample period covers a window of two years before and two years after the social engagements. The main independent variable of interest is the interaction between *Social Engagement*, a dummy variable equal to one if the firm has been targeted by a social engagement) and *Post*, a dummy variable equal to one after the engagement and zero before the engagement. We restrict the sample to firms that never have environmental engagements. All regressions include firm-cohort and year-cohort fixed effects. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	SBTi	CDP Disclosure	Int (Scope 1)
Social Engagement × Post	3.253	0.475	0.023
	(2.118)	(6.732)	(0.015)
No. obs	38,610	6,039	8,395
Other Controls	Yes	Yes	Yes
Firm-cohort FE	Yes	Yes	Yes
Year-cohort FE	Yes	Yes	Yes

Table 13: Voting and Engagement Following Unsuccessful Engagements

This table reports estimates of regressions examining how BlackRock responds when targeted firms fail to take climate actions following climate risk engagements. We explore two possible responses against firms that were previously targeted but have not subsequently taken climate-related actions: i) re-engagement in year t (columns 1 and 2), and ii) voting support for director elections in year t (columns 3 and 4). The sample is restricted to firms without SBTi commitment in $t-1$ in columns 1 and 3, and to firms without CDP disclosure in $t-1$ in columns 2 and 4. The main independent variable of interest is the interaction between *Climate Risk Engagement*$_{t-1}$ (a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement in $t-1$) and *No SBTi Commitment*$_t$, or *No CDP Disclosure*$_t$. Control variables are the same as in Table 3 and are lagged by one year. All regressions include year and firm fixed effects. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Climate Risk Re-engagement		Voting Support Director Elections	
Climate Risk Engagement	-0.554***	-0.532***	0.050**	0.050*
	(0.059)	(0.063)	(0.022)	(0.028)
No SBTi Commitment	-0.051***		-0.004	
	(0.016)		(0.015)	
No SBTi Commitment × Climate Risk Engagement	0.205***		-0.043*	
	(0.060)		(0.023)	
No CDP Disclosure		-0.058***		-0.010
		(0.012)		(0.015)
No CDP Disclosure × Climate Risk Engagement		0.214***		-0.049
		(0.065)		(0.030)
R-squared	0.654	0.691	0.682	0.705
No. obs	26,198	7,242	20,102	2,731
Other Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Appendix A: Variable Definitions

This table provides definitions of the variables used in the empirical analysis.

Variable	Definition	Source
BlackRock Ownership	Fraction of a firm's shares held by BlackRock. For each firm-year observation in the Compustat Global or North America universe, we retrieve its institutional ownership from LSEG, and then aggregate the ownership of BlackRock's various entities.	LSEG, Compustat
BlackRock Vote For	Dummy variable that is equal to one if BlackRock votes in favor of a given proposal and zero otherwise. Data on BlackRock voting are from proxy voting information shared by BlackRock.	BlackRock's website
Company Share in BlackRock Portfolio	Total value of a company's shares held by BlackRock divided by BlackRock portfolio value.	BlackRock, Compustat
Return on Assets	Earnings before interest and taxes/Total assets$_{t-1}$	Compustat
Yearly Stock Return	12-month cumulative stock returns	LSEG, Compustat
Tangibility	Property, plant and equipment (net)/Total assets	Compustat
Cash Ratio	Cash and short-term investments/Total assets	Compustat
Debt Ratio	(Long-term debt + Debt in current liabilities)/Total assets	Compustat
Market-to-Book	(Long-term debt + Debt in current liabilities + Year-end stock price×Common shares outstanding)/Total Assets	Compustat, LSEG
CO_2 Emissions	Scope 1 & 2 emissions in tons of CO_2	Trucost
CO_2 Scope 1 & 2 Emissions Intensity	Scope 1 & 2 emissions in tons of CO_2/Sales in million dollars	Trucost
CO_2 Scope 1 Emissions Intensity	Scope 1 emissions in tons of CO_2/Sales in million dollars	Trucost
CO_2 Scope 2 Emissions Intensity	Scope 2 emissions in tons of CO_2/Sales in million dollars	Trucost
Regulation Climate Risk	Regulatory climate change exposure from Sautner et al. (2023). We use the logarithm of one plus the variable and multiply it by 10,000.	Sautner et al. (2023)
Physical Climate Risk	Physical climate risk exposure from Sautner et al. (2023). We use the logarithm of one plus the variable and multiply it by 10,000.	Sautner et al. (2023)
Climate Incidents	Number of incidents classified as climate change, GHG emissions, and global pollution.	RepRisk
Other Incidents	Number of non-climate ESG incidents	RepRisk
SBTi Commitment	A dummy indicating whether a firm has made a commitment to adopt a science-based climate target with SBTi.	SBTi website
Climate Risk Engagement	A dummy indicating whether a firm has received a climate risk engagement from BlackRock.	BlackRock Stewardship Reports
Climate Risk Disclosure	A dummy variable indicating whether a firm responds to CDP questionnaire.	Carbon Disclosure Project
Management Recommendation	A dummy indicating whether management recommends voting in favor of a proposal.	BlackRock's website
Voting Support of Director Elections	Ratio of BlackRock's votes in favor of director elections for a firm in a given year	BlackRock's website
SSGA or Vanguard Engagement	A dummy variable indicating whether the company is engaged by SSGA or Vanguard on any issue in year t. Based on quarterly stewardship reports covering 2020-2023.	SSGA's website and Vanguard's website
NGO Campaign	A dummy variable indicating whether a firm is targeted by an NGO environmental campaign in year t. An NGO environmental campaign is defined as one with issues including at least one of the following keywords: "climate", "carbon", "emission", "environment", "pollution", "greenhouse", or "GHG".	Sigwatch.com
Trucost Physical Risk Score – 2030/2050 Horizon	An additive combination of the company's physical risk scores on each indicator (waterstress, heatwaves, cold waves, hurricanes, river flooding, coastal flooding, and wildfires), multiplied by the corresponding sensitivity scores representing the relative sensitivity of the company to each physical risk indicator, with a forecasting horizon of 2030 or 2050	Trucost

Table IA.1: Determinants – Controlling for Vanguard and State Street Engagements and NGO Campaigns

This table reports the same regressions as in Table 3 with additional control variables: i) *SSGA or Vanguard Engagement*, a dummy variable that is equal to one if the firm receives engagements from Vanguard or State Street Global Advisors and ii) *NGO Campaign*, a dummy variable that is equal to one if a firm is the target of at least one NGO campaign on environmental issues during the year. Variable definitions are provided in Appendix A.

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.473***			
	(0.125)			
CO2 Emissions Intensity		1.147***		
		(0.346)		
Regulation Climate Risk			5.116***	
			(1.858)	
Ln (1 + #Climate Incidents)				15.373***
				(1.347)
Ln (1 + #Other Incidents)				2.150***
				(0.362)
SSGA or Vanguard Engagement	0.146***	0.146***	0.138***	0.139***
	(0.008)	(0.008)	(0.009)	(0.008)
NGO Campaign	0.047	0.055*	0.041	0.014
	(0.030)	(0.031)	(0.034)	(0.030)
R-squared	0.247	0.244	0.259	0.253
No. obs	47,392	47,392	23,760	47,392
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes

Table IA.2: Determinants - Alternative Standard Error Clusters

This table repeats Table 3 with standard errors clustered at firm and industry-year level (Panel A), and at firm and country-year level (Panel B).

Panel A: Firm and Industry-Year Clusters

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.495***			
	(0.247)			
CO2 Emissions Intensity		1.115***		
		(0.393)		
Regulation Climate Risk			5.455***	
			(1.849)	
Ln (1 + #Climate Incidents)				16.150***
				(1.687)
Ln (1 + #Other Incidents)				2.459***
				(0.386)
R-squared	0.234	0.230	0.245	0.241
No. obs	47,392	47,392	23,760	47,392
Controls	Yes	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes

Panel B: Firm and Country-Year Clusters

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.495***			
	(0.152)			
CO2 Emissions Intensity		1.115***		
		(0.394)		
Regulation Climate Risk			5.455***	
			(1.696)	
Ln (1 + #Climate Incidents)				16.150***
				(2.004)
Ln (1 + #Other Incidents)				2.459***
				(0.576)
R-squared	0.234	0.230	0.245	0.241
No. obs	47,392	47,392	23,760	47,392
Controls	Yes	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes

Table IA.3: Determinants - Non-linear Size Effects

This table repeats Table 3 adding as control variable the square of size (Panel A), and including size decile-year fixed effects (Panel B).

Panel A: Controlling for Size^2

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.353***			
	(0.126)			
CO2 Emissions Intensity		1.112***		
		(0.347)		
Regulation Climate Risk			5.171***	
			(1.896)	
Ln (1 + #Climate Incidents)				13.506***
				(1.376)
Ln (1 + #Other Incidents)				1.471***
				(0.369)
Ln (Total Assets)	-12.157***	-11.311***	-13.095***	-9.492***
	(0.672)	(0.661)	(1.086)	(0.654)
(Ln (Total Assets))^2	0.997***	1.022***	1.177***	0.866***
	(0.047)	(0.047)	(0.074)	(0.047)
R-squared	0.247	0.244	0.256	0.250
No. obs	47,392	47,392	23,760	47,392
Controls	Yes	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes

Panel B: Size Decile-Year FEs

	Climate Risk Engagement (×100)			
	(1)	(2)	(3)	(4)
Ln (CO_2 Emissions)	1.570***			
	(0.124)			
CO2 Emissions Intensity		1.106***		
		(0.354)		
Regulation Climate Risk			5.026***	
			(1.890)	
Ln (1 + #Climate Incidents)				15.342***
				(1.383)
Ln (1 + #Other Incidents)				2.108***
				(0.370)
R-squared	0.242	0.238	0.253	0.247
No. obs	47,392	47,392	23,760	47,392
Controls	Yes	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Size Decile × Year FE	Yes	Yes	Yes	Yes

Table IA4: Determinants – Physical Risk

This table reports estimates of regressions at the firm-year level where the dependent variable is a dummy variable that is equal to one if a firm receives at least one climate risk engagement during the year and the main dependent variables are measures of physical risk. In Column 1, we consider the measure of physical climate change exposure developed by Sautner et al. (2023). In Columns 2 and 3, we consider the Trucost's sensitivity-adjusted composite physical climate risk score with horizons of 2030 and 2050, respectively. Control variables are the same as in Table 3 and are lagged by one year. All regressions include country × year and industry × year fixed effects, and all independent variables are lagged by one year. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Climate Risk Engagement (×100)		
	(1)	(2)	(3)
Physical Risk	0.417***		
	(0.086)		
Trucost Physical Risk Score – 2030 Horizon		0.020	
		(0.014)	
Trucost Physical Risk Score – 2050 Horizon			0.029**
			(0.014)
R-squared	0.245	0.221	0.221
No. obs	23,760	34,004	34,004
Country × Year FE	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Other Controls	Yes	Yes	Yes

Table IA5: Summary Statistics – Outcome Analysis

This table reports summary statistics at the firm-year level of variables used in the outcome analysis for the full sample (Panel A), the matched sample used in Table 9 in which the outcome variable is SBTi commitment (Panel B), the matched sample used in Table 10 in which the outcome variable is CDP disclosure (Panel C) and the matched sample used in Table 11 in which the outcome variables are carbon emissions (Panel D). Variable definitions are provided in Appendix A. All continuous variables are winsorized at 1% and 99% levels.

Panel A: Full Sample

Variable	Mean	SD	Median	N
BlackRock Ownership (%)	3.09	4.09	1.13	49,466
Share in BR Portfolio (× 10000)	0.27	0.88	0.02	49,466
Climate Action 100+	0.01	0.10	0.00	49,466
Tangibility	0.24	0.23	0.17	49,466
Ln (Total Assets)	7.43	1.90	7.37	49,466
Cash Ratio	0.18	0.20	0.12	49,466
Debt Ratio	0.23	0.21	0.19	49,466
Market-to-Book	1.85	3.39	1.00	49,466
ROA	0.04	0.20	0.06	49,466
Past Year Stock Return	0.22	1.23	0.03	49,466
Ln (CO_2 Emissions)	10.58	2.64	10.57	45,608
CO2 Emissions Intensity	0.22	0.70	0.04	45,610
Int (Scope 1)	0.18	0.67	0.01	45,610
Int (Scope 2)	0.04	0.07	0.02	45,610
SBTi Commitment (× 100)	1.52	12.24	0.00	49,466
Climate Risk Disclosure	49.01	49.99	0.00	24,477
CO_2 Emissions Intensity – Scaled by Total Assets (Ton/000)	0.045	0.134	0.003	45,510
Int (Scope 1) – Scaled by Total Assets (Ton/000)	0.033	0.121	0.001	45,510
Int (Scope 1) – Scaled by Total Assets (Ton/000)	0.010	0.023	0.001	45,510

Panel B: Matched Sample – SBTi

	Treated Group				Control Group			
Variable	Mean	SD	Median	N	Mean	SD	Median	N
BlackRock Ownership (%)	5.93	4.38	6.04	2,398	4.86	4.70	2.94	8,712
Share in BR Portfolio (× 10000)	0.91	1.35	0.41	2,398	0.76	1.53	0.15	8,712
Climate Action 100+	0.01	0.11	0.00	2,398	0.04	0.21	0.00	8,712
Tangibility	0.27	0.26	0.19	2,398	0.26	0.24	0.19	8,712
Ln (Total Assets)	9.29	1.50	9.33	2,398	8.90	1.61	8.92	8,712
Cash Ratio	0.11	0.12	0.08	2,398	0.14	0.15	0.09	8,712
Debt Ratio	0.28	0.21	0.26	2,398	0.26	0.20	0.24	8,712
Market-to-Book	1.51	2.34	0.93	2,398	1.73	4.03	0.89	8,712
ROA	0.07	0.09	0.06	2,398	0.06	0.12	0.06	8,712
Past Year Stock Return	0.25	1.24	0.06	2,398	0.18	1.06	0.04	8,712
SBTi Commitment (× 100)	3.79	19.11	0.00	2,398	2.39	15.27	0.00	8,712

Panel C: Matched Sample − CDP Disclosure

	Treated Group				Control Group			
Variable	Mean	SD	Median	N	Mean	SD	Median	N
BlackRock Ownership (%)	5.43	4.19	5.56	484	3.37	3.46	1.76	1,736
Share in BR Portfolio (× 10000)	0.69	0.99	0.37	484	0.63	1.41	0.10	1,736
Climate Action 100+	0.02	0.13	0.00	484	0.04	0.19	0.00	1,736
Tangibility	0.36	0.30	0.31	484	0.29	0.26	0.22	1,736
Ln (Total Assets)	9.28	1.24	9.15	484	9.23	1.41	9.17	1,736
Cash Ratio	0.11	0.12	0.07	484	0.15	0.16	0.09	1,736
Debt Ratio	0.27	0.19	0.26	484	0.26	0.20	0.24	1,736
Market-to-Book	1.30	1.49	0.92	484	2.16	5.60	0.87	1,736
ROA	0.07	0.09	0.05	484	0.07	0.10	0.06	1,736
Past Year Stock Return	0.22	1.18	0.03	484	0.16	1.05	0.02	1,736
Climate Risk Disclosure	16.12	36.81	0.00	484	9.97	29.96	0.00	1,736

Panel D: Matched Sample − Carbon Emissions

	Treated Group				Control Group			
Variable	Mean	SD	Median	N	Mean	SD	Median	N
BlackRock Ownership (%)	4.99	3.72	5.02	1,549	4.19	3.53	2.96	4,593
Share in BR Portfolio (× 10000)	1.13	1.54	0.53	1,549	1.17	1.89	0.27	4,593
Climate Action 100+	0.02	0.13	0.00	1,549	0.09	0.29	0.00	4,593
Tangibility	0.29	0.25	0.24	1,549	0.30	0.24	0.25	4,593
Ln (Total Assets)	9.74	1.21	9.73	1,549	9.54	1.34	9.56	4,593
Cash Ratio	0.10	0.10	0.08	1,549	0.11	0.11	0.09	4,593
Debt Ratio	0.29	0.20	0.26	1,549	0.28	0.18	0.26	4,593
Market-to-Book	1.34	1.65	0.87	1,549	1.81	4.52	0.90	4,593
ROA	0.07	0.08	0.06	1,549	0.07	0.08	0.06	4,593
Past Year Stock Return	0.27	1.37	0.05	1,549	0.16	0.91	0.05	4,593
Ln (CO_2 Emissions)	13.18	2.16	13.12	1,549	13.12	2.24	13.23	4,593
CO2 Emissions Intensity	0.44	0.99	0.05	1,549	0.47	1.07	0.06	4,593
Int (Scope 1)	0.38	0.96	0.02	1,549	0.41	1.03	0.02	4,593
Int (Scope 2)	0.05	0.09	0.02	1,549	0.05	0.09	0.02	4,593

Table IA6: Outcomes of Climate Risk Engagements – Excluding Vanguard and State Street Engagements, or NGO Campaigns

This table reports the main regressions from the outcome analysis (Tables 9 to 11) excluding from the sample firms engaged by Vanguard or SSGA, firms targeted by NGO Campaigns on environmental issues, or firms targeted by the Climate Action 100+.

	SBTi Commitment (× 100)	Climate Risk Disclosure (× 100)	Int (Scope 1)
		Without Disclosure before Engagement	
Without Vanguard Engagements			
Climate Risk Engagement × Post	4.722***	15.399***	-0.082***
	(0.968)	(3.567)	(0.028)
No. obs	41,061	6,844	10,643
Other Controls and FEs	Yes	Yes	Yes
Without SSGA Engagements			
Climate Risk Engagement × Post	3.930***	17.124***	-0.082***
	(0.827)	(4.369)	(0.024)
No. obs	46,242	7,592	12,639
Other Controls and FEs	Yes	Yes	Yes
Without Vanguard or SSGA Engagements			
Climate Risk Engagement × Post	4.602***	15.161***	-0.081***
	(0.981)	(3.603)	(0.029)
No. obs	40,502	6,769	10,318
Other Controls and FEs	Yes	Yes	Yes
Without NGO Campaigns			
Climate Risk Engagement × Post	4.095***	17.559***	-0.063***
	(0.723)	(3.324)	(0.019)
No. obs	48,862	7,906	14,304
Other Controls and FEs	Yes	Yes	Yes
Without SSGA or Vanguard Engagements, or NGO Campaigns			
Climate Risk Engagement × Post	4.263***	14.746***	-0.078***
	(0.986)	(3.623)	(0.030)
No. obs	40,238	6,710	10,145
Other Controls and FEs	Yes	Yes	Yes
Without CA100+ Firms			
Climate Risk Engagement × Post	4.011***	19.351***	-0.054***
	(0.738)	(3.777)	(0.019)
No. obs	49,038	7,961	14,375
Other Controls and FEs	Yes	Yes	Yes
Without SSGA or Vanguard Engagements, NGO Campaigns, or CA100+ Firms			
Climate Risk Engagement × Post	4.215***	14.482***	-0.063**
	(1.000)	(3.644)	(0.030)
No. obs	40,170	6,706	10,085
Other Controls and FEs	Yes	Yes	Yes

Table IA7: Outcomes of Climate Risk Engagements – Dynamic Treatment Effects

This table reports estimates of stacked difference-in-differences regressions examining the relation between climate risk engagement and different emission measures as in Table 11, Panel A. The main independent variables are the interactions between *Climate Risk Engagement* and dummy variables coding for the different years around the engagement. Control variables are the same as in Table 3 and are lagged by one year. All regressions include firm-cohort and year-cohort fixed effects. Standard errors, reported in parentheses, are clustered by firm. *,**, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Ln (Scope 1-2)	Int (Scope 1-2)	Int (Scope 1)	Ln (Scope 1)
	(1)	(2)	(3)	(4)
Climate Risk Engagement × T-2	0.001	0.021	0.023	-0.001
	(0.022)	(0.017)	(0.015)	(0.002)
Climate Risk Engagement × T-1	-0.021	0.022*	0.021*	-0.000
	(0.018)	(0.013)	(0.012)	(0.002)
Climate Risk Engagement × T+1	0.004	-0.036***	-0.038***	-0.002
	(0.018)	(0.013)	(0.012)	(0.002)
Climate Risk Engagement × T+2	0.049**	-0.042**	-0.047***	-0.001
	(0.022)	(0.017)	(0.016)	(0.002)
R-squared	0.979	0.944	0.949	0.904
No. obs	14,538	14,538	14,538	14,538
Other Controls	Yes	Yes	Yes	Yes
Firm-cohort FE	Yes	Yes	Yes	Yes
Year-cohort FE	Yes	Yes	Yes	Yes

Table IA8: Outcomes of Climate Risk Engagements – Intensity Scaled by Total Assets

This table reports the main regressions from the outcome analysis of emission intensities (Tables 11) scaled by total assets.

	Int (Scope 1-2)	Int (Scope 1)	Int (Scope 2)
	(1)	(2)	(3)
Climate Risk Engagement × Post	-0.008**	-0.011***	-0.001
	(0.003)	(0.003)	(0.001)
No. obs	14,824	13,449	14,824
Other Controls	Yes	Yes	Yes
Firm-cohort FE	Yes	Yes	Yes
Year-cohort FE	Yes	Yes	Yes

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