

Climate Risk Engagements

Finance Working Paper N° 1074/2025

July 2025

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ECGI Working Paper Series in Finance

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Abstract

We study climate-risk related engagements by one of the world's largest investors. Climate risk engagements represent a growing fraction of ESG engagements and are more frequent in high carbon emissions industries. We find that firms with greater carbon footprint and greater exposure to climate transition risk are more likely to be targeted. Following a climate risk engagement, targeted firms are more likely to commit to adopt a science-based climate target and to disclose climate-related information. Targeted firms also experience a reduction in their carbon emissions. However this reduction is limited to scope 1 and 2 emissions and its magnitude is inconsistent with net-zero targets. We also find that climate risk engagements are associated with greater voting support for management. Overall, our results suggest that shareholder engagement on climate issues can be an important tool in the fight against climate change.

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

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

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Climate Risk Engagements*

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December 2024

Abstract

We study climate-risk related engagements by one of the world's largest investors. Climate risk engagements represent a growing fraction of ESG engagements and are more frequent in high carbon emissions industries. We find that firms with greater carbon footprint and greater exposure to climate transition risk are more likely to be targeted. Following a climate risk engagement, targeted firms are more likely to commit to adopt a science-based climate target and to disclose climate-related information. Targeted firms also experience a reduction in their carbon emissions. However this reduction is limited to scope 1 and 2 emissions and its magnitude is inconsistent with net-zero targets. We also find that climate risk engagements are associated with greater voting support for management. Overall, our results suggest that shareholder engagement on climate issues can be an important tool in the fight against climate change.

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1 Introduction

Survey evidence indicates that institutional investors are increasingly concerned about climate risks and believe that these risks have already started to materialize (Krueger, Sautner, and Starks 2020). At the same time, they can play a crucial role in the fight against climate change (Kolasa and Sautner 2024). According to a recent survey of finance academics, professionals, and regulators, the pressure from institutional investors is viewed as one of the most powerful forces to induce firms to reduce their climate risks and carbon footprints (Stroebel and Wurgler 2021). One key mechanism through which institutional investors can exert pressure on companies is shareholder engagement (i.e., direct discussions with the firm’s executives or directors to influence corporate policies).¹ Theory also suggests that shareholder engagement is an effective mechanism to deal with firms’ environmental externalities (Broccardo, Hart, and Zingales 2022).

Despite the promises of shareholder engagement on climate issues, empirical evidence on their effectiveness is still relatively scarce. In particular, we do not know whether climate engagements have a meaningful effect on actual emission reductions or other climate-related policies (e.g., disclosure or risk management). Moreover, little is known about the firm characteristics that influence the probability of being the target of a climate engagement. In this paper, we seek to contribute to a better understanding of the motivations and effectiveness of climate engagements by examining BlackRock’s climate risk engagements.

Several distinguishing features of BlackRock and its engagements motivate our analysis. First, BlackRock is a passive investor with the vast majority of its equity investments in index funds, which implies that it does not choose the companies in which it invests. Because BlackRock usually cannot exit a company, it has to voice its concerns and views its stewardship and engagements as a core component of its fiduciary duty to its clients. Second, given the size of its equity investments, BlackRock has both the incentives and the possibil-

1. Survey evidence shows that investors see engagement as an effective intervention mechanism to raise their concerns related to governance and climate issues (McCahery, Sautner, and Starks 2016; Krueger et al. 2020)

ity to influence management (Fisch, Hamdani, and Solomon 2019). Third, BlackRock has regularly emphasized the need to address and manage climate risks. For example, in his famous 2021 letter to CEOs², Larry Fink, the CEO of BlackRock, stresses that *“no issue ranks higher than climate change on our clients’ list of priorities”*. Likewise, in his 2020 letter, he stresses that climate change has become a defining factor in companies’ long-term prospects and that climate risk is an investment risk.³ Moreover, climate change is consistently part of BlackRock’s priorities for engagement.⁴ Importantly, not only does BlackRock explicitly engage its portfolio firms on climate risk issues but it also publicly discloses its engagement records.⁵ BlackRock’s climate risk engagements are widespread. For example, in 2022, BlackRock made 1,829 engagements related to climate risk and more than 11% of its portfolio firms were targeted.⁶

We obtain data on BlackRock’s climate risk engagements from its stewardship reports.⁷ BlackRock started providing granular information about the topics of its engagements in 2020. The climate risk engagements we study therefore cover the period 2020-2023. Over this period, BlackRock made 5,964 climate risk engagements, which accounts for about 30% of its ES engagements (12% of all engagements). These climate risk engagements target firms worldwide, with the US (36%), Japan (11.5%), Australia (5.4%), UK (4.9%), and Brazil (4.1%) receiving the highest fractions of engagements.

We first examine whether BlackRock’s climate risk engagements are more frequent in industries with high carbon emissions. BlackRock could engage firms in high-emission in-

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>

4. BlackRock publishes every year its priorities for engagement. These priorities reflect the five themes on which BlackRock will most frequently engage with companies, where they are relevant and a source of material business risk or opportunity. For BlackRock’s engagements priorities for 2024, see: <https://www.blackrock.com/corporate/literature/publication/blk-stewardship-priorities-final.pdf>

5. BlackRock defines an engagement as a direct interaction with a company where meaningful dialogue occurred.

6. The scope of BlackRock’s climate risk engagements is much larger than previously studied climate or ES engagements. For example, the institutional investor from which Hoepner et al. (2024) obtain proprietary engagement data makes on average 100 ES engagements per year (i.e., 1,443 engagements over the period 2005-2018) and the index provider with which Heeb and Kölbel (2024) partnered made 300 engagement requests to adopt a science-based climate target.

7. Source: <https://www.BlackRock.com/corporate/insights/investment-stewardship>

dustries because they have greater exposure to climate transition risks, or it could engage with industries that have already undertaken decarbonization efforts as a form of “green-washing”. In fact, BlackRock targets industries with high carbon emissions: the industries with the greatest number of climate risk engagements are Banking, Utilities, Petroleum and Natural Gas, Transportation, Trading, Chemicals, and Steel Works.⁸ We also observe that the fraction of unique firms targeted by climate risk engagements is higher in those industries. For example, more than 20% of firms in the Utilities and Petroleum and Natural Gas sectors receive climate risk engagements (compared to less than 10% for the entire universe of BlackRock’s holdings).

Next, following the same logic, we examine firm-level determinants of climate risk engagements. Specifically, we are interested in whether a firm’s climate risk and carbon footprint predict its likelihood of being targeted by a climate-risk engagement. We focus on three main climate-risk measures. First, we consider measures of carbon emissions level and carbon emissions intensity using data from Trucost. Recent evidence suggests that carbon emissions are associated with greater climate transition risk and that investors have started to price this risk (Bolton and Kacperczyk 2021, 2023b; Ilhan et al. 2021). Second, we consider the firm-level measure of regulatory climate change exposure constructed by Sautner et al. (2023a). This exposure captures the proportion of the conversation during earnings calls that is centered on regulatory shocks related to climate change.⁹ Third, we consider the number of climate-change incidents using data from RepRisk.

We find that firms with greater carbon emissions are more likely to be targeted by BlackRock’s climate risk engagements. Interestingly, only the level of carbon emissions but not the intensity predicts BlackRock’s climate risk engagements. While there is a debate on whether raw or scaled carbon emissions better capture climate risks at the firm level

8. Most of these industries are in the top-10 of the industry ranking built by Ilhan, Sautner, and Vilkov (2021) and belong to the high carbon emissions industries used by Seltzer, Starks, and Zhu (2022). Banking and Trading are not a high carbon emissions industries but banks can be exposed to substantial climate risks through their equity and loan portfolios (Martini et al. 2023).

9. The measure of climate change exposure is priced both in options and equity markets (Sautner et al. 2023b, 2023a).

(Aswani, Raghunandan, and Rajgopal 2024; Bolton and Kacperczyk 2021, 2023b), for a universal investor, such as BlackRock, the negative externalities that a firm could impose on other firms depend more on the level of carbon emissions than on their intensity. We also document that firms with greater regulatory climate change exposure based on Sautner et al. (2023a) and with a greater number of climate incidents are significantly more likely to be targeted by BlackRock’s climate risk engagements. In auxiliary tests, we find no evidence that these different variables predict the likelihood of BlackRock’s engagements on social or governance issues.

In the second part of our empirical analysis, we examine possible outcomes of BlackRock’s climate risk engagements. We focus on three types of climate-related policies: (1) commitments to adopt a science-based climate target, (2) disclosure of climate risks, and (3) actual reduction in carbon emissions. The effectiveness of BlackRock’s climate risk engagements is ex ante not clear. Because of its substantial ownership stakes and its privileged access to management, BlackRock could exert sufficient pressure on targeted firms to generate tangible changes (Fisch et al. 2019). However, its high number of engagements could make it difficult for BlackRock to effectively monitor the responses of targeted firms to climate risk engagements. Another possibility is that BlackRock uses engagement on climate-related issues to attract climate-conscious investors but does not really aim at changing firm policies. One empirical challenge for the analysis of the outcomes 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 use a difference-in-difference 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 relative to those that do not.

BlackRock emphasizes the need to adopt climate-based targets. For example, in its 2030 net-zero statement¹⁰, BlackRock claims that by 2030, at least 75% of its assets will be

10. Source: <https://www.BlackRock.com/corporate/sustainability/2030-net-zero-statement>

invested in issuers with science-based target (compared to approximately 25% in 2022). The adoption of climate targets may therefore be one of the objectives pursued by BlackRock through its climate risk engagements. Our main measure is whether firms have committed to set a science-based climate target with SBTi (Science Based Target initiative). SBTi is a joint initiative that encourages and helps companies to set greenhouse gas emissions reductions targets aligned with the Paris Agreement’s objective to limit global warming to 1.5°C. Commitments from SBTi have been used by Bolton and Kacperczyk (2023a) and Heeb and Kölbel (2024) among others, and represent the most ambitious climate commitments.¹¹ We find that firms targeted by BlackRock’s climate risk engagements are significantly more likely to commit to adopt a climate target in accordance with SBTi. More precisely, they are more likely to send a commitment letter to SBTi, which represents the first step in the adoption of a science-based target.¹²

On top of the adoption of climate targets, another objective that BlackRock may pursue is greater disclosure of climate risks. BlackRock was a founding member of the Taskforce on Climate-related Financial Disclosures (TCFD) and publicly advocated for high-quality climate disclosures.¹³ Moreover, recent evidence shows that universal investors, and in particular Big-Three investors, demand greater climate-related disclosure (Cohen, Kadach, and Ormazabal 2023; Ilhan et al. 2023). We rely on data from the Carbon Disclosure Project (CDP), the world’s largest platform of voluntary climate risk disclosure. 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.¹⁴ We find that among firms that were not answering CDP questionnaires, those targeted by BlackRock’s climate

11. As discussed by Bolton and Kacperczyk (2023a), decarbonization plans from Carbon Disclosure Project (CDP) involve looser criteria for emission reduction targets, in particular, they do not have to be in line with a 1.5°C objective and the targets can take the form of carbon intensity improvement without absolute emission reduction equivalents.

12. Following the reception of their commitment letters, firms have 24 months to submit their target to SBTi for validation.

13. Source: <https://www.BlackRock.com/corporate/literature/whitepaper/spotlight-blk-supports-consistent-climate-related-disclosures-urges-global-coordination-june-2022.pdf>

14. It should be noted that BlackRock is one of the subscriber of CDP and that answering CDP questionnaire goes well beyond disclosing carbon emissions which only constitutes one item in the questionnaire.

risk engagements are significantly more likely to start answering CDP questionnaire in the following years. This result is consistent with BlackRock using its engagements to induce its portfolio firms to provide greater climate disclosure.

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 (2023a) 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.¹⁵ We observe a significant reduction in Scope 1 and 2 carbon emissions following BlackRock’s climate risk engagements. Economically, it amounts to a reduction of 7.5% per year for the targeted firms, relative to other firms, in the two years following the climate risk engagement. However, we find no evidence of a reduction in Scope 3 carbon emissions. This finding is consistent with BlackRock’s policy on Scope 3 emissions, which does not ask companies to disclose them until a clear regulatory framework emerges.¹⁶ These results suggest that climate engagements are an effective tool to reduce firms’ carbon emissions that are under their control.

Two caveats are worth noting. First, the reduction in carbon emissions is modest and we find that firms targeted by climate risk engagements are not significantly more likely to decrease their emissions to be on a path consistent with net-zero by 2030.¹⁷ Hence, the decarbonization efforts we can associate with BlackRock’s engagements are positive but

15. Likewise, Sastry, Verner, and Ibanez (2024) find that banks that make voluntary climate commitments do not decrease their lending to the sectors targeted as high priority for decarbonization and they do not increase credit supply to renewable projects. On the contrary, Cohen et al. (2023) show that more climate disclosure is associated with a decrease in carbon emissions.

16. As stated in BlackRock’s 2022 Policy Spotlight: *“We do not believe the purpose of Scope 3 disclosure requirements should be to push publicly traded companies into the role of enforcing emission reduction targets outside of their control. Given methodological complexity for Scope 3 emissions and the lack of direct control by companies over the requisite data, our investors believe the usefulness of this disclosure varies significantly right now across industries and Scope 3 emissions categories. We encourage regulators to adopt a disclosure framework that accounts for this significant variation.”* Source : <https://www.blackrock.com/corporate/literature/whitepaper/spotlight-blk-supports-consistent-climate-related-disclosures-urges-global-coordination-june-2022.pdf>

17. The 2019 UNEP Emission Gas Report warns that unless global GHG emissions fall by 7.6% each year between 2020 and 2030, the world will miss the opportunity to get on track towards the 1.5°C temperature objective of the Paris Agreement.

insufficient with respect to the net-zero on average. Second, companies can reduce their emissions by selling assets (Arnold et al. 2023), switching suppliers (Pankratz and Schiller 2023), or resorting to carbon offsets (Kim, Li, and Wu 2024). Our results are silent on the way companies achieve lower emissions. The end contribution to the reduction of global carbon emissions should be corrected for practices that allow a company to report less emissions while not physically stopping these emissions from being produced.

In the final part of our analysis, we explore the interplay between climate engagements and alternative channels through which BlackRock may seek to influence portfolio firms' climate policies: voting and divesting. We find that BlackRock provides greater support to management in firms it engages on climate risk issues. Specifically, BlackRock is significantly more likely to vote in favor of management proposals related to director elections in firms targeted by climate risk engagements. This suggests that BlackRock seeks to foster cooperation and communication rather than confrontation with management to achieve material change on firms' climate policies. We also find that BlackRock is significantly less likely to vote in favor of climate-related shareholder proposals in firms it engages on climate risk issues. This result complements a recent study by Briere et al. (2024) showing that universal investors are less likely to support climate-related shareholder proposals. One of the explanations proposed by Briere et al. (2024) is that universal investors prefer direct engagement. Consistent with their prediction, our results indicate that climate-related shareholder proposals may conflict with the objectives that BlackRock seeks to obtain through its engagements.

Finally, we find no evidence that BlackRock's climate engagements influence its divestment from firms with greater climate risk. This finding is consistent with the view that BlackRock, which invests mostly in index funds, is constrained in terms of its choice of portfolio firms and cannot deal with climate risk using the threat of exit.¹⁸

Our paper contributes to different streams of the literature. First, it relates to the literature on shareholder ESG engagements and its outcomes (e.g., Dimson, Karakaş, and

18. Index funds represent about 90% of BlackRock's total assets under management.

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 Big-Three engagements for the year 2018, they also document that Big-Three investors are more likely to target firms with greater carbon emissions. However, using a longer time period, Aggarwal, Litov, and Rajgopal (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 as opposed to broad ESG engagements (which tend to be dominated by governance-related engagements). Our findings show that firms with high carbon emissions are more likely to be the target of climate risk engagements but not of engagements related to social and governance 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 real effects on firm’s climate policies. Finally, we also examine the interplay between BlackRock’s engagements and its voting behavior.

In another related paper, Heeb and Kölbel (2024) conduct a field experiment showing that firms respond to an engagement request to adopt a science-based climate target. 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, most importantly, we examine whether climate risk engagements have a meaningful effect on actual emission reductions, which is not covered in their analysis. Last,

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.¹⁹

Our paper also contributes to the literature on whether shareholder voice or exit is the most effective mechanism 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.²⁰ Our results indicate that shareholder engagement on climate risk issues can play a role in inducing firms to reduce their carbon footprints. However, although BlackRock is one of the largest investors in the world, the emission reduction associated with its climate risk engagements alone is insufficient with respect to net-zero objectives.

2 Data sources and sample construction

2.1 Data sources

We obtain engagement data from BlackRock’s stewardship reports.²¹ BlackRock provides the list of firms it engages over 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

19. 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.

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

21. Stewardship reports are publicly available from BlackRock’s website. For example, the latest report is available at <https://www.blackrock.com/corporate/literature/press-release/investment-stewardship-global-quarterly-engagement-summary.pdf>.

allows us to precisely identify climate risk engagements.²² We collect the list of all the firms BlackRock engaged on ESG issues over the period 2020-2023 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 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.²³ Data on carbon emissions are from Trucost and data on firm-level regulatory risk exposure are from Sautner et al. (2023a). Finally, we obtain data on climate disclosure from the Carbon Disclosure Project (CDP) and climate targets from SBTi.

2.2 Sample construction

We start with BlackRock’s ESG engagement records for the period 2020-2023. 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.²⁴ After hand-checking the matches, we are able to find a match for 98.8% of firm-year observations in BlackRock’s stewardship reports (9,481 out of 9,599). After merging with LSEG ownership data, we obtain a sample of 9,357 firm-year observations.

Our final sample also includes firm-year observations without BlackRock engagement.

22. On top of 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 may change over year depending on its priorities. However, climate risk is consistently part of BlackRock’s priorities for engagements.

23. Source: <https://vds.issproxy.com/SearchPage.php?CustomerID=10228>.

24. For the matching by firm names, we remove: i) connectors such as “the” or “a”, ii) suffixes such as “LTD”, “PLC”, “INC”, “INCORPORATED”, “LIMITED”, “PUBLIC LIMITED COMPANY”, “SA”, “AG”, “(JAPAN)”, iii) punctuation marks or brackets, such as: () / - . , ’. We manually check firms that are not exact matches.

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 24,417 firm-year observations over the period 2020-2023, 5,619 of which have been the target of BlackRock’s ESG engagements and 2,861 the target of at least one climate-risk engagement. In some tests, this sample is further reduced depending on the availability of our variables of interest (e.g., the regulatory risk measure from Sautner et al. (2023a)).

3 BlackRock’s climate risk engagements

Table 1, Panels A and B display descriptive statistics on the number of ESG engagements and the percentage of each type of engagements. BlackRock makes more than 12,000 ESG engagements per year. Most of these engagements are related to governance issues. Engagements on environmental and social issues represent about 40% of BlackRock’s engagements. The number of climate risk engagements increases over time from 1,413 in 2020 to 1,829 in 2022 and then decreases to 1,267 in 2023. The fraction of climate risk engagements also increases over time. In 2022, climate-risk engagements represent more than 14% of BlackRock’s total engagements and 37% of its ES engagements.

In Panel C of Table 1, we report the fraction of (unique) portfolio firms that BlackRock engages on ESG issues every year. To compute this ratio, we first merge engagement data from stewardship reports with ownership data. BlackRock engages between 16% and 19% 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 and decreases to 8% in 2023.

Overall, consistent with the emphasis placed by BlackRock on climate risks, the descriptive statistics from Panels A to C indicate that climate risk engagements account for

a significant and growing fraction of BlackRock’s ESG engagements. Likewise, we observe that a substantial fraction of its portfolio firms are the targets of climate risk engagements.

Panels D and E of Table 1 display the breakdown of climate risk engagements by industry and country. As reported in Panel D, the industries with the greatest number of climate risk engagements are Banking (565), Utilities (520), Petroleum and Natural Gas (509), Trading (329), Transportation (277), Retail (249), Insurance (239) Chemicals (214), Steel Work (184), and Computer Software (172). Most of these industries are high-carbon-emissions industries according to classifications used in prior studies (e.g., Ilhan et al. 2021; Seltzer et al. 2022). Banking, Insurance, and Trading are not high-carbon-emissions industries based on their direct emissions but can be exposed to substantial climate risks through their equity and loan portfolios (Martini et al. 2023). We also report the fraction of unique firms targeted by BlackRock’s climate risk engagements within an industry. The fraction of unique firms targeted by climate risk engagements is also relatively high in these industries. For example, about 24% of firms in the Utilities sector and 20% of firms in the Petroleum and Natural Gas sector have been the target of BlackRock’s climate risk engagements. By comparison, the fraction of unique firms targeted by climate risk engagements for the entire universe of BlackRock’s holdings ranges between 7% in 2020 and 11% in 2022.

Panel E reports the breakdown of climate risk engagements by country. The U.S. (2,128), Japan (686), Australia (320), UK (290), Brazil (247), China (171), Mexico (167), Canada (167), France (139), and Germany (125) are the countries receiving the highest number of 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.

We provide variable definitions in Appendix A and summary statistics in Table 2. About 12% of firm-year observations in our sample are the target of BlackRock’s climate risk engagements. The fraction of firms targeted by social and governance engagements are respectively 11% and 22%. On average, BlackRock’s ownership amounts to 3.5% of firm’s shares,

consistent with BlackRock being a very large investor with substantial ownership stakes.

4 Empirical analysis

4.1 Firm-level determinants of climate risk engagements

We start our empirical analysis by examining the firm-level determinants of BlackRock’s climate risk engagements. Specifically, we explore whether a firm’s climate risk and carbon footprint 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) which measures a firm’s carbon footprint and its contribution to climate change. It also provides a proxy for a firm’s exposure to climate transition risk (Bolton and Kacperczyk 2023a). The second is emission intensity computed as the ratio of scope 1 and 2 emissions scaled by sales. Emission intensity measures are independent of firms’ revenues and may therefore provide a proxy for a firm’s carbon efficiency (per unit of sales). Moreover, Bolton and Kacperczyk (2023b) explain that asset managers have focused a lot on emission intensity. However, unlike carbon emission levels, it may not accurately capture a firm’s exposure to transition risk and the negative externalities it imposes on other firms. The third measure is regulatory climate change exposure based on earnings conference calls from Sautner et al. (2023a). This measure reflects the relative frequency with which bigrams that capture regulatory shocks related to climate change occur in the transcripts of earnings conference calls between firms and security analysts. We average the measure over the four quarters of any given year to obtain 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 (e.g., Derrien et al. 2024; Gantchev et al. 2022; He, Kahraman, and Lowry 2023). In particular, Hoepner et al. (2024) 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 :

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

where *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 . *Climate Risk Measure* _{$i,t-1$} is one of the four 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. Vector $\mathbf{X}_{i,t-1}$ contains various firm characteristics. Specifically, $\mathbf{X}_{i,t-1}$ includes $\ln(\text{total assets})$, cash ratio, debt ratio, market-to-book ratio, asset tangibility, ROA, yearly stock return, BlackRock's ownership stakes, 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 ($\gamma_{j,t}$) or country-by-year ($\delta_{c,t}$) levels. These fixed effects absorb the heterogeneity in the likelihood of being targeted by climate risk engagements across industries and countries documented in Section 3. Standard errors are clustered at the firm level.

Table 3, Panel A reports the results of 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. Firms with greater carbon emissions are more exposed to climate transition risk, which may therefore induce BlackRock to engage them on climate risk issues. Economically, a one-standard deviation increase in $\ln(CO2emissions)$ is associated with an increase of 0.7% (0.277×2.50) in the likelihood of being targeted by climate risk engagements. Compared to an unconditional probability of 12%, this represents a 5.8% increase. In unreported tests, we find similar results if we restrict the sample to

firms that report their carbon emissions (i.e., we drop firms for which carbon emissions are estimated by Trucost).

In Columns 3 and 4, we consider emission intensity (i.e., scope 1 and 2 emissions scaled by sales) instead of the level of carbon emissions. The results show that the coefficient on *CO2 emissions intensity* is positive but not statistically significant. This indicates that BlackRock’s decision to engage firms on climate risk issues depends more on their level of carbon emissions than on their emission intensity. While there is a debate in the literature on whether emission level or intensity better captures climate risk, our results suggest that BlackRock pays more attention to the level of carbon emissions. Our results may also reflect the fact that for a universal investor such as BlackRock, the negative externalities that a firm imposes on other portfolio firms depend more on the level of carbon emissions than on emissions intensity.

In Columns 5 and 6, we consider the measure of regulatory climate change exposure from Sautner et al. (2023a). This measure is available for about 80% of our sample firms. The results show that firms with greater regulatory climate change exposure are more likely to be targeted by BlackRock’s climate risk engagements. These results further indicate that BlackRock cares about climate transition risk and directs its climate risk engagements towards firms with greater exposure to transition risk.

Last, in Columns 7 and 8, 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 to a large extent on their exposure to climate transition risk, and in particular their carbon footprints.

We have conducted several robustness tests of our determinants analysis. First, as shown in Table IA.1, our results are unchanged if we implement alternative clustering 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.2, we check that our results hold when accounting for potentially non-linear size effects. In Panel A, we add size^2 as an additional control. The results show that the coefficient on size^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. 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 $\times$ year fixed effects. In both panels, we find that our baseline results are unchanged and we continue to find that firms with greater carbon emissions, greater regulatory climate risk, and with a larger number of climate incidents are more likely to be targeted by BlackRock’s climate risk engagements.

On top of climate risk, BlackRock engages its portfolio firms on other ESG issues. While we expect carbon emissions and regulatory climate change exposure to mainly influence climate risk engagements, these variables may also be associated with a greater likelihood of being the target of other (non-climate risk) ESG engagements. For example, BlackRock could engage a high-carbon-emission firm on governance issues in order to make CEO pay more sensitive to climate performance or incorporate directors with greater expertise on environmental sustainability to the board. Panels B, C, and D of Table 3 report the results of estimating Equation (1) using as dependent variables different dummy variables coding whether a firm is the target of engagements related to environmental (other than climate risk), social, or governance issues. In Panels C and D, we exclude firm-year observations with environmental engagements to single out firms that BlackRock engages on social or governance issues. For the sake of brevity, we only report the coefficients and standard errors on our key variables. Control variables are the same as in Panel A.

The results from Panel B of Table 3 show that firms with greater carbon emissions are significantly more likely to be targeted by BlackRock’s engagements on other environmental issues. These other environmental issues are “environmental impact management” and “operational sustainability”. These results reflect the fact that carbon emissions also affect

these categories, which are broader in nature than the “climate risk engagement” category that we consider in our baseline tests. The measure of regulatory climate change exposure from Sautner et al. (2023a) is not associated with a greater likelihood of being targeted by engagements related to other environmental issues. This could be explained by the fact that this measure captures more narrowly and precisely climate risk than carbon emissions. The results from Column 4 show that both the number of climate incidents and the number of other incidents are associated with the likelihood of receiving other environmental engagements.

The results from Panels C and D of Table 3 indicate that carbon emissions, climate transition risk, and the number of climate incidents are not associated with a greater likelihood of being the target of BlackRock’s engagements on social and governance issues. These results therefore indicate that a firm’s carbon emissions and climate risk predict engagements on climate risk issues and to a lower extent on other environmental issues. However, a firm’s carbon footprint and its exposure to climate transition risk are not associated with engagements related to governance or 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 without focusing on climate risk engagements. Our results highlight that breaking down ESG engagements by topics is important as carbon emissions predict climate risk engagements but not social or governance related engagements.

4.2 Outcomes of climate risk engagements

4.2.1 Estimation design

One empirical challenge for the analysis of the outcomes 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 use

a 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.²⁵ This allows us to 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, over a window of two years before (2018-2019) to two years after (2021-2022) the climate risk engagement:

$$\text{Outcome}_{i,t} = \beta_0 + \beta_1 \text{Climate Risk Engagement } 2020_i \times \text{Post}_t + \beta_2 \mathbf{X}_{i,t} + \gamma_i + \delta_t + \epsilon_{i,t}, \quad (2)$$

where $\text{Outcome}_{i,t}$ is either a commitment to adopt a climate target, the disclosure of climate risks, or carbon emissions. *Climate Risk Engagement 2020_i* is a dummy variable that is equal to one if the firm is the target of a climate risk engagement in 2020, and Post_t is a dummy variable that is equal to one after the engagement (i.e., the period 2021-2022) and zero before the engagement (i.e., the period 2018-2019). We control for firm (γ_i) and year (δ_t) fixed effects. The vector $\mathbf{X}_{i,t}$ contains the same firm characteristics as in Equation (1). The standalone variables *Climate Risk Engagement 2020_i* and Post_t are absorbed by, respectively, the firm and time fixed effects. 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.

4.2.2 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 in-

25. We exclude control firms (i.e., firms not targeted by a climate risk engagement in 2020) that receive a climate risk engagement in 2021 or 2022. We also exclude control firms with BlackRock’s ESG engagement in 2019. 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. The results are robust if we relax these restrictions.

vested 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 primary measure is whether firms have committed to set a science-based climate target with SBTi. SBTi is a joint initiative from the CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) to encourage firms to play their part in combating 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. In order to set its climate target, a firm must start by submitting a letter to SBTi establishing its intent to set a science-based target.²⁶ Following the reception of their commitment letters, firms have 24 months to submit their climate target to SBTi for validation. SBTi publishes on its website the list of firms that have sent the commitment letter or have already had their climate target validated.²⁷ Importantly, firms that committed but failed to adopt a science-based target appear with a flag “Commitment Removed” on SBTi website. This implies that firms can face reputation costs and may attract negative media coverage if they fail to submit their climate-target after sending the commitment letter.²⁸

Table 4 reports the results of estimating Equation (2). 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 SBTi before the engagement.²⁹ The coefficient on Climate Risk Engagement $2020 \times \text{Post}$ is positive and statistically significant at the 1% level, indicating that firms that have been targeted by BlackRock’s climate risk engagements are significantly more likely to

26. See <https://sciencebasedtargets.org/resources/files/SBT-Commitment-Letter.pdf>.

27. Source: <https://sciencebasedtargets.org/companies-taking-action>.

28. 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>.

29. In unreported tests, we find that the results are unchanged if we relax this restriction.

make a commitment to adopt a science-based target with SBTi. The likelihood of making a SBTi commitment increases by 4.4 percentage points, which is sizeable compared to the unconditional probability of having a SBTi commitment (8%). In Column 2, we exclude firms targeted by the Climate Action 100+ initiative. The initiative, which was backed by many large institutional investors including BlackRock, also pushes companies to adopt climate targets. Targeted companies arguably received pressure from many actors to make a SBTi commitment, not only BlackRock. When we exclude them from the sample, the results continue to hold.

The results from Section 3 indicate that firms targeted by climate risk engagements differ from other firms along several dimensions including their carbon emissions, size, industry, and country. In Table IA.3, we show that the results hold if we use a matched sample. Specifically, we match each targeted firm to one control based on industry, country, and all firm-level variables used in the determinants analysis including carbon emissions. 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.

4.2.3 Climate disclosure

Another objective that BlackRock may pursue is greater disclosure of climate risks. Recent empirical evidence indicates that universal investors, and in particular Big-Three investors, demand greater climate-related disclosure (Cohen et al. 2023; Ilhan et al. 2023). Moreover, BlackRock was a founding member of the Taskforce on Climate-related Financial Disclosures (TCFD) and publicly advocated for high-quality climate-related disclosures.³⁰

Following recent studies on climate risk disclosure, we use data from CDP, the world’s largest platform of voluntary climate risk disclosure. Specifically, CDP sends an annual questionnaire asking companies to disclose information about their climate-related risks and

30. Source: <https://www.BlackRock.com/corporate/literature/whitepaper/spotlight-blk-supports-consistent-climate-related-disclosures-urges-global-coordination-june-2022.pdf>.

opportunities as well as their strategies to address them. In 2023, CDP sent its climate-related questionnaire to more than 14,000 firms worldwide. Contacted firms can decide to answer the questionnaire on a voluntarily basis. We obtain information about the firms to which CDP sends its questionnaire and their response status. Importantly, we restrict our analysis to firms to which CDP sends its questionnaire to make sure that the absence of answer reflects a firm refusing to answer rather than a firm not being requested to participate.

Table 5 reports the results of estimating Equation (2) where the dependent variable is a dummy variable that is equal to one if the firm responds to the CDP questionnaire. We estimate the regression separately for the subsample of firms that were not answering before the engagement (Column 1) and for firms that were already answering the questionnaire (Column 2). The results from Column 1 show that the coefficient on Climate Risk Engagement $2020 \times \text{Post}$ 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 questionnaire. The likelihood of answering increases by 11.1 percentage points, which is sizeable compared to the unconditional probability of answering CDP questionnaire (about 50%). The results from Column 2 show that, among firms that were already providing climate-related information by answering CDP questionnaire, BlackRock’s climate risk engagements are not affecting statistically significantly the likelihood of answering in the years following the engagement.

In Table IA.3 (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 questionnaire.

4.2.4 Carbon emissions

Our evidence from Section 4.2.2 indicates that BlackRock’s climate risk engagements lead to the adoption of climate targets. While committing and then failing to adopt a science-based

climate target exposes firms to potential reputation costs, it does not imply that targeted firms deliver on their commitment by actually reducing their carbon emissions. For example, Bolton and Kacperczyk (2023a) 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. We therefore examine whether BlackRock’s climate risk engagements lead to lower carbon emissions.

Figure 1, Panel A displays the evolution of scope 1 and 2 carbon emissions (average values) for the targeted and control firms over the years before and after the BlackRock’s climate risk engagement. Consistent with the results of the determinant analysis, targeted firms have larger carbon emissions than control firms. However, the trends for both the targeted and control firms are similar and relatively flat before the climate risk engagement.³¹ After the engagement, we observe a significant decrease in the average level of scope 1 and 2 carbon emissions for targeted firms compared to control firms. Figure 1, Panel B displays the evolution of scope 3 emissions. We observe that the decrease in scope 3 emissions for targeted firms after the engagement is less pronounced.

Table 6, Panel A reports the results of estimating Equation (2) with the dependent variable being the level of carbon emissions (the natural logarithm of scope 1 and 2 emissions) or emission intensity (scope 1 and 2 emissions scales by sales). We restrict the sample to firms that report their 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.³² In Column 1, the coefficient on Climate Risk Engagement 2020 $\times$ Post is negative and statistically significant at the 1% level, indicating that BlackRock’s climate risk engagements are associated with a decrease in carbon emissions. Economically, it amounts to a relative reduction of 7.5% per year in the two years following the climate risk

31. Scope 1 and 2 emissions of firms targeted by BlackRock’s climate engagement start decreasing slightly in 2020. This could be because some of the firms BlackRock engaged on climate in 2020 were already on its climate engagement list in previous years and started taking climate-related action before 2020.

32. 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.

engagement. The results from Column 2 show that BlackRock’s climate risk engagements are associated with a decrease in scope 1 and 2 emission intensity. The effect is only significant at the 10% level and the magnitude of the effect is smaller than for the level of emissions. In Columns 3 and 4, we find that climate risk engagements have no effect on the level or intensity of scope 3 emissions.

The results from Section 3 indicate that firms targeted by climate risk engagements have larger carbon emissions. In Table IA.3 (Column 3), we continue to find that climate risk engagements are associated with a decrease in the level of scope 1 and 2 emissions if we use the matched sample as in the previous two sections.

Our evidence that BlackRock’s climate risk engagements are mainly associated with a decrease in scope 1 and 2 emissions but not in scope 3 emissions is consistent with anecdotal evidence that BlackRock views scope 3 emissions differently from scopes 1 and 2, given methodological complexity and lack of direct control by companies.³³

These results suggest that climate engagements are an effective tool to reduce firms’ carbon footprints. However, two caveats are worth noting. First, while BlackRock is one of the largest investors in the world, the reduction in firms’ carbon emissions achieved through its climate risk engagements is modest and may therefore not be sufficient to achieve net-zero. In Panel B, we confirm that firms targeted by climate risk engagements are not significantly more likely to be on a path consistent with net-zero by 2030. Specifically, firms targeted by climate risk engagements are not significantly more likely to decrease their carbon emissions by 7.6% or more (the threshold necessary for the world to get on track towards the 1.5°C temperature objective of the Paris Agreement according to the 2019 UNEP Emission Gas Report). At the same time, while the decrease in carbon emissions is relatively modest, BlackRock engages a large number of firms on climate risk issues. Whether climate engagements from other investors with more concentrated holdings could achieve a greater emissions reduction is an important question for future research. Second, our results

33. Source: <https://www.BlackRock.com/corporate/literature/publication/blk-commentary-climate-risk-and-energy-transition.pdf>.

are silent on the way firms achieve lower carbon emissions. Some firms can reduce their emissions by selling assets, switching suppliers (Pankratz and Schiller 2023), or by resorting to carbon offsets (Kim et al. 2024). Therefore, it remains to be seen whether firms decrease their carbon emissions in a satisfactory way when considered globally.

4.2.5 Endogeneity

The findings from the preceding sections indicate that climate risk engagements can significantly influence portfolio firms' climate policies. Nonetheless, an alternative interpretation 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.

One potential motivation for BlackRock (or any other investor) to pursue strategic engagement of this nature could be to make its engagement activities look successful, thereby appealing to climate-conscious investors. However, it is important to note that BlackRock's engagement reports do not provide explicit communication about the success or effectiveness of its climate risk engagements. Furthermore, private discussions with BlackRock's investment stewardship team confirm that the firm neither seeks to highlight nor to quantify the success of these engagements. From this perspective, it remains unclear whether BlackRock has strong incentives to engage firms in a strategically selective manner. However, to address the concern that our findings might be influenced by selection bias, we propose two specific tests.

First, we examine the dynamics of the treatment effect. In Table IA.4, we reestimate Equation (2) 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 2020 (i.e., the year of the engagement). The results show that

the pretreatment trends of firms targeted by a climate risk engagement and control firms are indistinguishable and that the effects on the commitment to adopt a climate target with SBTi (Column 1), the disclosure climate-related relation (Column 2), and the decrease in carbon emissions (Column 3) are 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 observes that these firms have taken climate actions that have not yet materialized when it chooses to engage them on climate.

In our second test, we seek to identify climate risk engagements that are unlikely to be driven by BlackRock’s private information. Specifically, BlackRock Investment Stewardship defines and publicly discloses a list of companies that it refers to as the “climate focus universe”. This list is built based on public information only and includes about 1,000 firms representing approximately 80-90% of the scope 1 and 2 greenhouse gas emissions of BlackRock’s aggregate equity holdings. BlackRock arguably engages firms in this category because of their high carbon emissions without focusing on specific firms in the list that started undertaking climate policies. In Table IA.5, we reestimate Equation (2) restricting the sample to climate risk engagements targeting firms in the climate focus universe. The results indicate that BlackRock’s climate risk engagements are associated with a higher likelihood of making a SBTi commitment and with a decrease in carbon emissions. The results for CDP (Column 2) show that the coefficient on the interaction term is positive but not statistically significant at conventional levels. One explanation is that about 80% of firms in the climate focus universe were already answering CDP questionnaire before the engagement.³⁴

34. One limitation of this approach is that firms in BlackRock’s “climate focus universe” are likely to be targeted by climate activists and investors concerned with climate issues. As a consequence, the marginal effect of BlackRock’s engagement on these firms’ climate policies may be less pronounced than when BlackRock is the only investor engaging a firm.

4.3 Engagement versus Voting or Divesting

On top of engaging its portfolio firms on climate risk issues, investors can also seek to influence their climate policies through voting and divesting. In this final section, we explore the interplay between BlackRock’s climate engagements and its voting and divesting behavior.

The interplay between BlackRock’s climate engagements and its voting behavior is not clear ex ante. A first possibility is that engagement and voting are complementary. If BlackRock is not satisfied with a firm’s climate policies, it may simultaneously engage it on climate issues and vote against management to express its discontent. BlackRock may also vote against management in order to pressure targeted firms to change their climate policies. An alternative possibility is that engagement and voting work as substitutes. For example, BlackRock’s decision to engage firms on climate issues may be influenced by its perception of the ability of the firm management to change its climate policies. BlackRock may also be more likely to support management in firms it engages in order to ensure cooperation and communication with management to achieve the desired changes.

Regarding divesting, because BlackRock is a passive investor that makes the vast majority of its equity investments through index funds, it usually does not choose its portfolio firms and therefore cannot exit. Divesting is therefore unlikely to be a substitute to its engagement activities.

4.3.1 Engagement and Voting Behavior

In this section, we examine whether BlackRock votes against management at portfolio firms it engages with. Specifically, we examine whether BlackRock is more likely to support directors in board elections. 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. For example, Aggarwal, Dahiya, and Yilmaz (2024) and Ding et al. (2023) document that poor ES performance (measured with ESG ratings or ES failures based on RepRisk) is associated with lower support for directors in board elections.

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 amounts to voting against management.

We collect BlackRock’s votes on management and shareholder proposals over the period 2020-2023. Over this period, BlackRock votes on 560,532 management and shareholder proposals, of which 212,631 are related to director elections and 375 are climate-related proposals.³⁵ For each proposal, we know the management recommendation and how BlackRock votes. Table 7, 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, probably because most climate proposals are sponsored by shareholders. We also observe that BlackRock only supports a minority of climate proposals (160 out of 375). This is consistent with BlackRock’s view that shareholder-sponsored climate proposals are often too prescriptive or constraining. For example, in a note published in 2022, BlackRock explains that climate-related shareholder proposals tend to be too prescriptive and constraining and may therefore not promote long-term shareholder value.³⁶

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

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

35. We search for keywords in the description of the proposals to identify these proposals. In particular, we use the keywords “EMISSION”, “CLIMATE”, “GHG”, “GREENHOUSE”, “CO2”, “CARBON”, “NET ZERO”, “NET-ZERO”, “PARIS AGREEMENT”, “TRANSITION PLAN” to identify climate-related proposals and we manually check them to remove mistakes, the most common being instances in which the name of a director includes one of the keywords (e.g., Carbone, Carbonato, Carbonari, Greenhouse)

36. Source: <https://www.blackrock.com/corporate/literature/publication/commentary-bis-approach-shareholder-proposals.pdf>.

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 8 reports the results of estimating Equation (3). The results from Column 1 show that the coefficient on the interaction term 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 targets with climate risk engagements. These results indicate that BlackRock is more likely to support management in firms it engages on climate risk issues. This suggests that BlackRock views engagement and voting as substitutes. It is consistent with BlackRock seeking to foster cooperation and communication (rather than opposition) with management to implement changes in climate policies.

In Column 2, we re-estimate Equation (3) focusing on climate proposals instead of proposals 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. These results are consistent with anecdotal evidence that BlackRock

sees shareholder-sponsored climate proposals as too prescriptive and constraining. It also suggests that BlackRock views these climate proposals as conflicting with the objectives it seeks to achieve through its climate risk engagements.

It should be noted that the voting patterns we observe do not preclude the possibility that if a firm does not respond to its climate engagement, BlackRock may change its voting behavior and vote against directors in board elections. Since we do not observe BlackRock’s perception of the success of its engagements, our results simply capture the average vote of BlackRock at the time it engages a company, irrespective of whether the company will change its climate policies in reaction to the engagement.

4.3.2 Engagement and Divestment

Finally, we examine the interplay between climate engagements and divestment. Instead of engaging with firms and voicing their concerns, investors can also address climate risk issues by divesting from firms with greater climate risk. Bolton and Kacperczyk (2021) provide evidence that institutional investors divest from firms in high carbon emission sectors. While divestment allows investors to reduce their exposure to climate risks, it imposes a tradeoff by reducing the benefits of portfolio diversification (Ceccarelli, Ramelli, and Wagner 2024). For large indexers (universal investors) such as BlackRock that intend to hold a diversified portfolio, the foregone diversification benefits may be particularly strong, which implies that divestment may not be the preferred option to deal with climate risks. We examine whether climate engagements influence BlackRock’s divestment from firms with greater climate risk by estimating the following regression at the firm-level for the period 2020-2023:

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

where $\Delta \text{Ownership}_{i,t}$ is the change in BlackRock’s ownership in firm i in year t . *Climate Risk Measure* _{i,t}

is one of the four proxies for firm-level climate risk used in section 4.1. *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 . 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 with them on climate risk issues.

Table 9 reports the results of estimating Equation (4). The results show that 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. More importantly, regardless of the proxies for climate risk we consider, the coefficient on the interaction term is not statistically significant, indicating that BlackRock’s divestment from firms with greater climate risk is independent from its climate risk engagements. These results are not surprising and are consistent with divestment not being BlackRock’s preferred approach to deal with climate risks.

5 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, 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 growing fraction of BlackRock’s total engagements and are more frequent in high carbon emissions industries. At the firm-level, firms with greater carbon emissions and greater exposure to climate transition risk are more likely to be targeted.

We also document that climate risk engagements have real effects on firm’s climate policies. Targeted firms are more likely to commit to adopting a science-based climate target and to disclose information about their climate risks. Targeted firms also experience a sig-

nificant reduction in their scope 1 and 2 carbon emissions. The magnitude of the reduction is however insufficient with respect to net-zero in 2030.

Although the reduction in carbon emissions is relatively insufficient with respect to net-zero objectives, BlackRock’s engagements are widespread and target a large number of firms worldwide. An important question for future research is to investigate whether climate engagements from other investors with more concentrated holdings and targeting a smaller number of firms could achieve a greater emissions reduction.

Finally, we document that BlackRock’s climate risk engagements are associated with a greater support for management (i.e., greater voting support for director elections). These results suggest that BlackRock seeks to foster communication and cooperation rather than confrontation with management to obtain changes in firms’ climate policies. On the contrary, BlackRock is 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.

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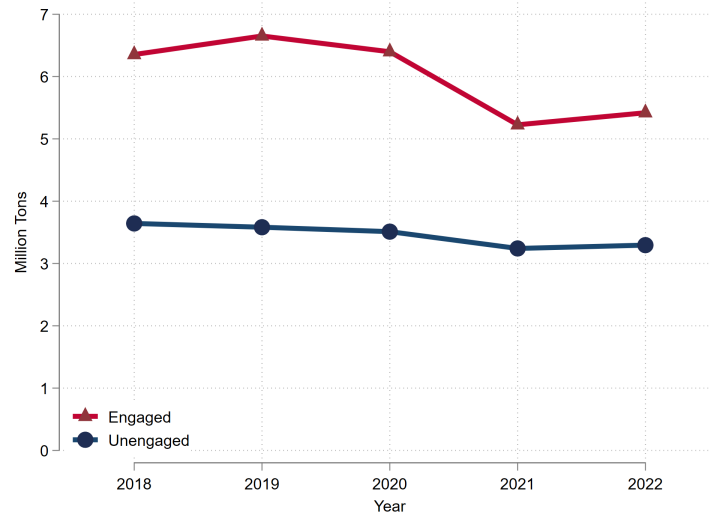
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Figure 1: Evolution of Carbon Emissions for Firms Targeted by Climate Risk Engagement and Control Firms

This figure reports the time-series evolution of the average level of scope 1 and 2 emissions (Panel A) and scope 3 emissions (Panel B) for the firms targeted by climate risk engagement in 2020 and control firms before and after the engagement. 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: Reported CO₂ Emissions - Scope 1 and 2



Panel B: Reported CO₂ Emissions - Scope 3

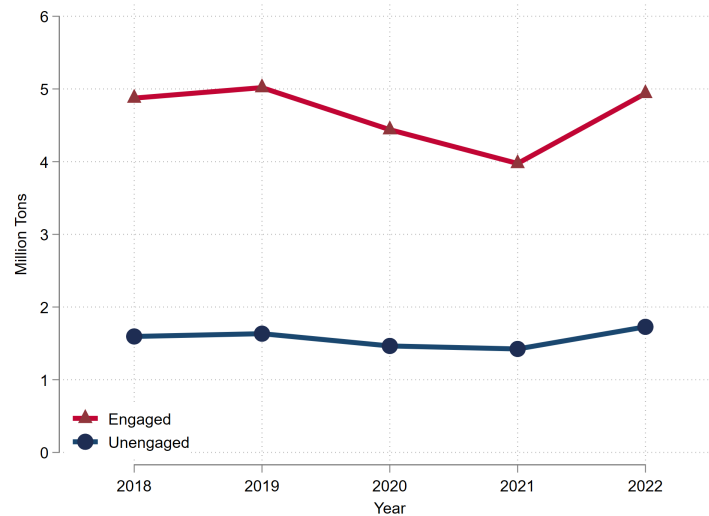


Table 1: Descriptive Statistics of BlackRock’s ESG and Climate Risk Engagements

This table provides descriptive statistics on BlackRock’s climate risk engagements as well as on other ESG engagements over the period 2020-2022. Panel A shows the total number of ESG engagements made by BlackRock every year. It also breaks down these engagements into the following issues: environmental, social, governance, and climate-risk. Panel B reports the fraction of total ESG engagements by issues. Panel C reports the fraction of unique portfolio firms targeted by BlackRock on the different ESG issues across years. Panels D and E report the breakout of climate risk engagements by industry (FF49 industries) and by country. They also report the percentage of unique firms targeted in each industry or country.

Panel A: Total Number of Engagements over Time

	2020	2021	2022	2023
All	12,129	12,021	12,668	12,903
Environmental	3,499	3,568	3,042	1,786
Social	1,798	1,555	1,900	2,210
Governance	6,832	6,898	7,726	8,907
E - Climate Risk	1,413	1,455	1,829	1,267

Panel B: Percentage of Engagements related to different ESG issues over Time

	2020	2021	2022	2023
Environmental	28.85	29.68	24.01	13.84
Social	14.82	12.94	15.00	17.13
Governance	56.33	57.38	60.99	69.03
E - Climate Risk	11.65	12.10	14.44	9.82

Panel C: Percentage of Unique Firms targeted by BlackRock’s ESG engagements over Time

	2020	2021	2022	2023
All	0.16	0.17	0.19	0.18
Environmental	0.09	0.13	0.12	0.08
Social	0.08	0.07	0.08	0.08
Governance	0.15	0.15	0.17	0.18
E - Climate Risk	0.07	0.08	0.11	0.08

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

	Number of Engagements	Percentage of Engagements (%)	Percentage of Unique Firms Engaged (%)
Agriculture	11	0.19	5.36
Food Products	145	2.53	9.22
Candy and Soda	22	0.38	10.81
Beer and Liquor	46	0.80	12.50
Tobacco Products	12	0.21	15.00
Recreation	15	0.26	8.11
Entertainment	34	0.59	3.89
Printing and Publishing	15	0.26	8.00
Consumer Goods	70	1.22	6.10
Apparel	41	0.72	4.83
Healthcare	21	0.37	1.66
Medical Equipment	35	0.61	3.07
Pharmaceutical Products	111	1.94	2.33
Chemicals	214	3.74	8.87
Rubber and Plastic Products	20	0.35	3.30
Textiles	4	0.07	2.99
Construction Materials	147	2.57	10.89
Construction	96	1.68	8.63
Steel Works Etc	184	3.22	14.61
Fabricated Products	6	0.10	7.41
Machinery	117	2.04	6.65
Electrical Equipment	48	0.84	3.21
Automobiles and Trucks	141	2.46	9.27
Aircraft	42	0.73	17.31
Shipbuilding, Railroad Equipment	13	0.23	8.33
Defense	8	0.14	0.00
Precious Metals	48	0.84	9.30
Non-Metallic and Industrial Metal Mining	125	2.18	10.29
Coal	58	1.01	15.38
Petroleum and Natural Gas	509	8.89	20.27
Utilities	520	9.09	23.75
Communication	126	2.20	9.22
Personal Services	28	0.49	3.64
Business Services	110	1.92	5.35
Computer Hardware	29	0.51	6.87
Computer Software	172	3.01	3.47
Electronic Equipment	152	2.66	4.62
Measuring and Control Equipment	38	0.66	6.00
Business Supplies	58	1.01	8.20
Shipping Containers	16	0.28	4.08
Transportation	277	4.84	11.41
Wholesale	164	2.87	7.98
Retail	249	4.35	7.52
Restaraunts, Hotels, Motels	58	1.01	6.91
Banking	565	9.87	9.09
Insurance	239	4.18	13.68
Real Estate	102	1.78	4.82
Trading	329	5.75	6.22
Almost Nothing	133	2.32	7.42

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

	Number of Engagements	Percentage of Engagements (%)	Percentage of Unique Firms Engaged (%)
AUS	320	5.37	15.18
BMU	63	1.06	7.78
BRA	247	4.14	21.11
CAN	167	2.80	5.97
CHE	93	1.56	7.84
CHN	171	2.87	3.58
CYM	102	1.71	5.01
DEU	125	2.10	15.10
FRA	139	2.33	13.07
GBR	290	4.86	6.17
HKG	90	1.51	19.15
IND	26	0.44	1.81
IRL	37	0.62	16.95
ITA	52	0.87	4.25
JPN	686	11.50	7.36
KOR	100	1.68	2.97
MEX	167	2.80	42.68
NLD	65	1.09	11.88
Other	762	12.78	4.66
SWE	32	0.54	2.83
TWN	102	1.71	4.20
USA	2,128	35.68	9.18

Table 2: Summary Statistics

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

Variable	Mean	SD	Median	N
Climate Risk Engagement	0.16	0.50	0.00	24,417
Climate Risk Engagement	0.12	0.32	0.00	24,417
Environmental (excl. climate) Engagement	0.03	0.17	0.00	24,417
Social Engagement	0.11	0.31	0.00	24,417
Governance Engagement	0.22	0.41	0.00	24,417
BlackRock Ownership (%)	3.48	4.27	1.37	24,417
Share in BR Portfolio ($\times 10000$)	0.58	1.55	0.06	24,417
Tangibility	0.25	0.22	0.19	24,417
Ln (Total Assets)	8.01	1.70	7.88	24,417
Cash Ratio	0.17	0.18	0.12	24,417
Debt Ratio	0.25	0.21	0.22	24,417
Market-to-Book	2.69	9.08	1.08	24,417
ROA	0.07	0.14	0.06	24,417
Past Year Stock Return	0.13	0.50	0.03	24,417
Climate Action 100+	0.02	0.13	0.00	24,417
Ln (CO ₂ Emissions) - Scope 1-2	10.98	2.50	10.90	24,417
CO ₂ Emissions Intensity - Scope 1-2 (Ton/000)	0.27	0.81	0.04	24,417
Ln (CO ₂ Emissions) - Scope 3	11.89	2.03	11.96	19,872
CO ₂ Emissions Intensity - Scope 3 (Ton/000)	0.18	0.20	0.11	19,872
Regulation Climate Risk	0.02	0.15	0.00	12,327
Ln (1 + #Climate Incidents)	0.05	0.17	0.00	24,417
Ln (1 + #Other Incidents)	0.26	0.55	0.00	24,417
SBTi Commitment	0.08	0.27	0.00	24,417
Path to Net Zero - Scope 1-2	0.31	0.46	0.00	19,872
Climate Risk Disclosure	0.55	0.50	1.00	12,031

Table 3: Determinants of Climate Risk Engagements

Panel A 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 (Columns 1 and 2), the ratio of scope 1 and 2 emissions to sales, and the measure of regulatory climate risk from Sautner et al. (2023a). Variable definitions are provided in Appendix A. Panel B reports estimates of regressions at the firm-year level examining the determinants of the likelihood of being targeted by BlackRock's environmental, social, or governance issues. The dependent variables are dummies coding for whether a firm receives BlackRock's engagements related to environmental, social, and governance 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 drop firm-year observations with environmental engagements when considering social or governance engagements. In all specifications we include country $\times$ year and industry $\times$ 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 Climate-Risk Engagements

	Climate Risk Engagement ($\times 100$)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln (CO ₂ Emissions)	1.752*** (0.121)	0.277** (0.108)						
CO2 Emissions Intensity			0.558 (0.352)	0.082 (0.297)				
Regulation Climate Risk					15.075*** (2.897)	8.477*** (2.637)		
Ln (1 + #Climate Incidents)							22.165*** (2.003)	10.827*** (1.866)
Ln (1 + #Other Incidents)							7.066*** (0.556)	1.341** (0.535)
BlackRock Ownership (%)		0.721*** (0.097)		0.721*** (0.097)		0.494*** (0.105)		0.654*** (0.096)
Share in BR Portfolio ($\times 10000$)		2.531*** (0.276)		2.544*** (0.277)		2.244*** (0.316)		2.503*** (0.271)
Climate Action 100+		23.953*** (2.991)		23.985*** (2.981)		18.084*** (3.236)		21.757*** (2.969)
Tangibility		9.393*** (1.565)		9.585*** (1.567)		10.679*** (2.488)		9.308*** (1.565)
Ln (Total Assets)		5.142*** (0.233)		5.287*** (0.227)		6.261*** (0.363)		4.818*** (0.235)
Cash Ratio		8.656*** (1.430)		8.401*** (1.424)		12.533*** (2.379)		7.221*** (1.416)
Debt Ratio		-0.839 (1.272)		-0.915 (1.273)		0.873 (1.761)		-1.129 (1.263)
Market-to-Book		-0.099*** (0.023)		-0.100*** (0.023)		-0.085** (0.033)		-0.096*** (0.022)
ROA		1.160 (1.325)		1.448 (1.320)		1.056 (2.032)		2.230* (1.301)
Past Year Stock Return		1.247*** (0.373)		1.232*** (0.373)		1.685** (0.657)		1.246*** (0.372)
R-squared	0.133	0.230	0.117	0.230	0.149	0.250	0.150	0.234
No. obs	24,417	24,417	24,417	24,417	12,310	12,310	24,417	24,417
Country $\times$ Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Determinants of BlackRock's Environmental Engagements

	Environmental (excl. climate) Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.117*			
	(0.060)			
CO ₂ Emissions Intensity		0.060		
		(0.158)		
Regulation Climate Risk			-1.215	
			(1.937)	
Ln (1 + #Climate Incidents)				2.859**
				(1.256)
Ln (1 + #Other Incidents)				0.863**
				(0.351)
R-squared	0.129	0.129	0.151	0.130
No. obs	21,551	21,551	10,122	21,551
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes

Panel C: Determinants of BlackRock's Social Engagements

	Social Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.024			
	(0.057)			
CO ₂ Emissions Intensity		-0.009		
		(0.121)		
Regulation Climate Risk			0.032	
			(1.745)	
Ln (1 + #Climate Incidents)				1.567
				(1.173)
Ln (1 + #Other Incidents)				0.974***
				(0.340)
R-squared	0.093	0.093	0.124	0.094
No. obs	20,791	20,791	9,495	20,791
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes

Panel D: Determinants of BlackRock's Governance Engagements

	Governance Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.020			
	(0.097)			
CO ₂ Emissions Intensity		-0.274		
		(0.226)		
Regulation Climate Risk			2.665	
			(2.873)	
Ln (1 + #Climate Incidents)				3.330*
				(1.877)
Ln (1 + #Other Incidents)				2.871***
				(0.527)
R-squared	0.165	0.165	0.184	0.167
No. obs	20,791	20,791	9,495	20,791
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes

Table 4: Outcomes of Climate Risk Engagements - Climate Targets

Panel A reports estimates of 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. Panel B reports similar regressions with the dependent variables being dummies coding for whether the firm has adopted targets for its carbon emission level (Column 1) and intensity (Column 2) that are in line with the Paris Agreement. In both panels, we focus on climate risk engagements made in 2020 and the sample period covers a window of two years before (2018-2019) and two years after (2021-2022) the climate-risk engagement. The main independent variable of interest is the interaction between CR engagement 2020 (a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement in 2020) and Post (a dummy variable that is equal to one after the engagement and zero before the engagement). 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.

	SBTi Commitment ($\times 100$)	SBTi Commitment ($\times 100$)
	(1)	(2)
Climate Risk Engagement 2020 $\times$ Post	4.347*** (0.935)	4.192*** (0.975)
R-squared	0.380	0.379
No. obs	40,912	40,395
Other Controls	Yes	Yes
Excluding CA100+ Firms	No	Yes
Firm and Year FE	Yes	Yes

Table 5: Outcomes of Climate Risk Engagements - Disclosure from CDP

This table reports estimates of difference-in-differences regressions at the firm-year level examining the relation between climate risk engagement and the 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 the sample period covers a window of two years before (2018-2019) and two years after (2021-2022) the climate-risk engagement. The main independent variable of interest is the interaction between CR engagement 2020 (a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement in 2020) and Post (a dummy variable that is equal to one after the engagement and zero before the engagement). 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 Disclosure ($\times 100$)	
	Without Disclosure before 2020	With Disclosure before 2020
	(1)	(2)
Climate Risk Engagement 2020 $\times$ Post	11.108*** (3.637)	-1.909 (1.221)
R-squared	0.537	0.472
No. obs	8,179	8,674
Other Controls	Yes	Yes
Firm and Year FE	Yes	Yes

Table 6: Outcomes of Climate Risk Engagements - CO₂ Emissions

Panel A reports estimates of 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) and the ratio of Scope 1 and 2 emissions to sales (Column 2). Columns 3 and 4 presents the same regressions for scope 3 emissions. we focus on climate risk engagements made in 2020 and the sample period covers a window of two years before (2018-2019) and two years after (2021-2022) the climate-risk engagement. The main independent variable of interest is the interaction between CR engagement 2020 (a dummy variable that is equal to one if the firm has been targeted by a climate risk engagement in 2020) 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). Panel B reports the same regressions based on a matched sample of firms targeted by climate risk engagements and comparable firms. We match each targeted firm to one control based on industry, country, and all firm-level variables used in Table 3. Panel C reports estimates of difference-in-differences regressions at the firm-year level examining the relation between climate risk engagement and the likelihood of being on the path to meet the objectives of the Paris Agreement. The dependent variable is a dummy that is equal to one if the firm decreases its carbon emissions by at least 7.6% per year. 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.

Panel A: Carbon Emissions				
	Ln (CO ₂ Emissions)	CO ₂ Emissions Intensity	Ln (CO ₂ Emissions)	CO ₂ Emissions Intensity
	Scope 1-2	Scope 1-2	Scope 3	Scope 3
	(1)	(2)	(3)	(4)
Climate Risk Engagement 2020 × Post	-0.075*** (0.028)	-0.031* (0.018)	-0.014 (0.020)	0.001 (0.003)
R-squared	0.977	0.957	0.982	0.977
No. obs	9,090	9,090	9,090	9,090
Other Controls	Yes	Yes	Yes	Yes
Firm and Year FE	Yes	Yes	Yes	Yes

Panel B: Path to Net Zero

	Path to Net Zero - Scope 1-2	
	Full Sample	Without Missing Trucost Emissions
	(1)	(2)
Climate Risk Engagement 2020 $\times$ Post	0.023 (0.015)	0.022 (0.022)
R-squared	0.307	0.298
No. obs	25,550	8,969
Other Controls	Yes	Yes
Firm and Year FE	Yes	Yes

Table 7: Distribution of BlackRock Votes

This table provides descriptive statistics on management recommendation (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, ii) director elections.

Panel A: Management Recommendation

	Against	For	None
Climate Proposals	235	134	8
Director Elections	0	218,270	0

Panel B: BlackRock Votes

	Abstain	Against	For	Withhold
Climate Proposals	2	202	171	2
Director Elections	532	15,365	196,286	6,088

Table 8: BlackRock Voting Behavior and Climate Risk Engagements

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 $\times$ 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”	0.672*** (0.006)	0.662*** (0.006)	0.663*** (0.006)	0.662*** (0.006)
Director Election	-0.033*** (0.001)			
Director Election $\times$ Climate Risk Engagement	0.035*** (0.004)			
All Climate Proposals		0.027 (0.035)		
All Climate Proposals $\times$ Climate Risk Engagement		-0.127*** (0.041)		
Climate Proposals with Mgt “For”			0.024 (0.023)	
Climate Proposals with Mgt “For” $\times$ Climate Risk Engagement			-0.042 (0.036)	
Climate Proposals with Mgt “Against”				0.030 (0.067)
Climate Proposals with Mgt “Against” $\times$ Climate Risk Engagement				-0.162** (0.072)
R-squared	0.305	0.304	0.304	0.304
No. obs	582,073	582,073	582,073	582,073
Other Controls	Yes	Yes	Yes	Yes
Firm $\times$ Year FE	Yes	Yes	Yes	Yes

Table 9: BlackRock Divestment and Climate Risk Engagements

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 four 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. (2023a), and the number of climate incidents from RepRisk. 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	-0.133 (0.203)	-0.003 (0.044)	0.043 (0.049)	0.061 (0.040)
Ln (CO ₂ Emissions)	-0.011 (0.023)			
Climate Risk Engagement × Ln (CO ₂ Emissions)	0.012 (0.016)			
CO2 Emissions Intensity		-0.091** (0.042)		
Climate Risk Engagement × CO2 Emissions Intensity		0.046 (0.054)		
Regulation Climate Risk			-0.095 (0.087)	
Climate Risk Engagement × Regulation Climate Risk			0.119 (0.166)	
Ln (1 + #Climate Incidents)				0.160*** (0.055)
Climate Risk Engagement × Ln (1 + #Climate Incidents)				-0.174 (0.114)
R-squared	0.489	0.489	0.505	0.511
No. obs	25,951	25,951	18,606	40,366
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 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 Refinitiv, and then aggregate the ownership of Blackrock's various entities.	Refinitiv, 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 _{<i>t-1</i>}	Compustat
Yearly Stock Return	12-month cumulative stock returns	Refinitiv, 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, Refinitiv
CO ₂ Emissions	Tons of CO ₂ emissions	Trucost
CO ₂ Emissions Intensity	Tons of CO ₂ emissions/Sales in million dollars	Trucost
Regulation Climate Risk	Regulatory climate change exposure from Sautner et al. (2023a). We use the logarithm of one plus the variable and multiply it by 10,000.	Sautner et al. (2023a)
Climate Incidents	Number of incidents classified as climate change, GHG emissions, and global pollution/Greenhouse gas (GHG) emissions	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 the CDP questionnaire	Carbon Disclosure Project
Management Recommendation	A dummy indicating management recommendation of a "Yes" on the shareholder proposal of BlackRock's portfolio company	BlackRock's website

Table IA1: Determinants - Alternative Standard Error Clusters

Panel A: Firm and Industry-Year Clusters

	Climate Risk Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.277** (0.137)			
CO ₂ Emissions Intensity		0.082 (0.311)		
Regulation Climate Risk			8.477*** (2.175)	
Ln (1 + #Climate Incidents)				10.827*** (2.130)
Ln (1 + #Other Incidents)				1.341** (0.576)
BlackRock Ownership (%)	0.721*** (0.097)	0.721*** (0.097)	0.494*** (0.110)	0.654*** (0.097)
Share in BR Portfolio ($\times 10000$)	2.531*** (0.360)	2.544*** (0.364)	2.244*** (0.396)	2.503*** (0.343)
Climate Action 100+	23.953*** (3.929)	23.985*** (3.916)	18.084*** (4.529)	21.757*** (3.890)
Tangibility	9.393*** (1.807)	9.585*** (1.812)	10.679*** (2.789)	9.308*** (1.820)
Ln (Total Assets)	5.142*** (0.312)	5.287*** (0.319)	6.261*** (0.471)	4.818*** (0.316)
Cash Ratio	8.656*** (1.518)	8.401*** (1.511)	12.533*** (2.466)	7.221*** (1.480)
Debt Ratio	-0.839 (1.372)	-0.915 (1.374)	0.873 (1.840)	-1.129 (1.373)
Market-to-Book	-0.099*** (0.026)	-0.100*** (0.026)	-0.085** (0.036)	-0.096*** (0.025)
ROA	1.160 (1.760)	1.448 (1.764)	1.056 (2.298)	2.230 (1.730)
Past Year Stock Return	1.247** (0.496)	1.232** (0.495)	1.685** (0.767)	1.246** (0.494)
R-squared	0.230	0.230	0.250	0.234
No. obs	24,417	24,417	12,310	24,417
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes

Panel B: Firm and Country-Year Clusters

	Climate Risk Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.277** (0.113)			
CO2 Emissions Intensity		0.082 (0.324)		
Regulation Climate Risk			8.477*** (2.686)	
Ln (1 + #Climate Incidents)				10.827*** (3.088)
Ln (1 + #Other Incidents)				1.341 (0.932)
BlackRock Ownership (%)	0.721*** (0.225)	0.721*** (0.225)	0.494*** (0.176)	0.654*** (0.210)
Share in BR Portfolio ($\times 10000$)	2.531*** (0.474)	2.544*** (0.474)	2.244*** (0.458)	2.503*** (0.471)
Climate Action 100+	23.953*** (3.909)	23.985*** (3.884)	18.084*** (4.178)	21.757*** (3.922)
Tangibility	9.393*** (1.817)	9.585*** (1.848)	10.679*** (2.664)	9.308*** (1.937)
Ln (Total Assets)	5.142*** (0.414)	5.287*** (0.419)	6.261*** (0.543)	4.818*** (0.413)
Cash Ratio	8.656*** (1.627)	8.401*** (1.620)	12.533*** (2.387)	7.221*** (1.668)
Debt Ratio	-0.839 (1.457)	-0.915 (1.442)	0.873 (1.769)	-1.129 (1.386)
Market-to-Book	-0.099*** (0.035)	-0.100*** (0.035)	-0.085* (0.047)	-0.096*** (0.034)
ROA	1.160 (1.548)	1.448 (1.574)	1.056 (1.772)	2.230 (1.432)
Past Year Stock Return	1.247*** (0.384)	1.232*** (0.385)	1.685*** (0.547)	1.246*** (0.377)
R-squared	0.230	0.230	0.250	0.234
No. obs	24,417	24,417	12,310	24,417
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes

Table IA2: Determinants - Non-linear Size Effects

Panel A: Size² as Controls

	Climate Risk Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.310*** (0.106)			
CO2 Emissions Intensity		0.215 (0.290)		
Regulation Climate Risk			8.502*** (2.644)	
Ln (1 + #Climate Incidents)				8.545*** (1.857)
Ln (1 + #Other Incidents)				0.776 (0.536)
BlackRock Ownership (%)	0.843*** (0.096)	0.843*** (0.096)	0.663*** (0.105)	0.786*** (0.096)
Share in BR Portfolio ($\times 10000$)	1.891*** (0.281)	1.908*** (0.281)	1.633*** (0.323)	1.917*** (0.276)
Climate Action 100+	18.572*** (2.981)	18.609*** (2.973)	13.093*** (3.305)	17.307*** (2.950)
Tangibility	9.507*** (1.556)	9.688*** (1.558)	11.157*** (2.484)	9.487*** (1.557)
Ln (Total Assets)	-12.292*** (1.109)	-12.085*** (1.103)	-13.035*** (1.855)	-11.230*** (1.099)
(Ln (Total Assets)) ²	1.095*** (0.074)	1.092*** (0.074)	1.189*** (0.120)	1.017*** (0.075)
Cash Ratio	4.631*** (1.410)	4.366*** (1.405)	9.252*** (2.336)	3.768*** (1.404)
Debt Ratio	-0.574 (1.251)	-0.651 (1.252)	2.228 (1.725)	-0.835 (1.247)
Market-to-Book	-0.098*** (0.020)	-0.099*** (0.020)	-0.086*** (0.029)	-0.097*** (0.020)
ROA	4.480*** (1.236)	4.800*** (1.232)	5.860*** (1.939)	5.122*** (1.229)
Past Year Stock Return	0.982*** (0.368)	0.964*** (0.368)	1.553** (0.650)	0.990*** (0.368)
R-squared	0.241	0.241	0.257	0.243
No. obs	24,417	24,417	12,310	24,417
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes

Panel B: Size Deciles-Year FEs

	Climate Risk Engagement ($\times 100$)			
	(1)	(2)	(3)	(4)
Ln (CO ₂ Emissions)	0.319*** (0.106)			
CO2 Emissions Intensity		0.182 (0.291)		
Regulation Climate Risk			7.990*** (2.641)	
Ln (1 + #Climate Incidents)				8.355*** (1.857)
Ln (1 + #Other Incidents)				0.749 (0.537)
BlackRock Ownership (%)	0.824*** (0.096)	0.823*** (0.096)	0.650*** (0.105)	0.784*** (0.096)
Share in BR Portfolio ($\times 10000$)	2.056*** (0.280)	2.073*** (0.280)	1.777*** (0.323)	1.954*** (0.277)
Climate Action 100+	19.841*** (2.989)	19.876*** (2.980)	14.340*** (3.303)	17.461*** (2.968)
Tangibility	9.416*** (1.557)	9.611*** (1.558)	11.109*** (2.487)	9.446*** (1.561)
Ln (Total Assets)	8.539*** (0.555)	8.711*** (0.553)	9.860*** (0.789)	-9.995*** (3.098)
Cash Ratio	4.719*** (1.427)	4.471*** (1.423)	9.221*** (2.369)	3.592** (1.416)
Debt Ratio	-0.709 (1.259)	-0.783 (1.260)	2.148 (1.732)	-0.837 (1.251)
Market-to-Book	-0.101*** (0.020)	-0.102*** (0.020)	-0.094*** (0.029)	-0.095*** (0.020)
ROA	4.016*** (1.254)	4.348*** (1.249)	5.418*** (1.956)	4.893*** (1.237)
Past Year Stock Return	0.934** (0.370)	0.918** (0.370)	1.350** (0.654)	0.949** (0.370)
(Ln (Total Assets)) ²				0.949*** (0.173)
R-squared	0.242	0.241	0.259	0.244
No. obs	24,416	24,416	12,309	24,416
Country $\times$ Year FE	Yes	Yes	Yes	Yes
Industry $\times$ Year FE	Yes	Yes	Yes	Yes
Size Decile $\times$ Year FE	Yes	Yes	Yes	Yes

Table IA3: Outcomes of Climate Risk Engagements - Matched Sample

	SBTi Commitment ($\times 100$)	Climate Risk Disclosure ($\times 100$)	Ln (CO ₂ Emissions)
		Without Disclosure before 2020	Scope 1-2
	(1)	(2)	(3)
Climate Risk Engagement 2020 $\times$ Post	4.147*** (1.149)	10.966*** (4.103)	-0.072*** (0.028)
R-squared	0.369	0.512	0.976
No. obs	24,253	6,203	8,760
Other Controls	Yes	Yes	Yes
Firm and Year FE	Yes	Yes	Yes

Table IA4: Outcomes of Climate Risk Engagements by Year

	SBTi Commitment ($\times 100$)	Climate Risk Disclosure ($\times 100$)	Ln (CO ₂ Emissions)
		Without Disclosure before 2020	Scope 1-2
	(1)	(2)	(3)
Climate Risk Engagement 2020 $\times$ 2018	0.025 (0.154)	0.699 (1.014)	0.051 (0.032)
Climate Risk Engagement 2020 $\times$ 2019	0.025 (0.102)	0.525 (0.913)	0.028 (0.026)
Climate Risk Engagement 2020 $\times$ 2021	3.022*** (0.843)	9.794*** (3.740)	-0.042* (0.023)
Climate Risk Engagement 2020 $\times$ 2022	5.744*** (1.170)	13.239*** (4.206)	-0.058* (0.031)
R-squared	0.380	0.538	0.977
No. obs	40,912	8,179	9,090
Other Controls	Yes	Yes	Yes
Firm and Year FE	Yes	Yes	Yes

Table IA5: Outcomes of Climate Risk Engagements - Excluding non-Climate Focused Universe Firms Engaged

	SBTi Commitment ($\times 100$)	Climate Risk Disclosure ($\times 100$) Without Disclosure before 2020	Ln (CO ₂ Emissions) Scope 1-2
	(1)	(2)	(3)
Climate Risk Engagement 2020 $\times$ Post	4.803*** (1.682)	4.340 (5.327)	-0.080* (0.047)
R-squared	0.392	0.609	0.976
No. obs	37,871	8,492	7,769
Other Controls	Yes	Yes	Yes
Firm and Year FE	Yes	Yes	Yes

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