

The Value of NGO Activism

Finance Working Paper N° 1066/2025

Revised July 2026

Janja Brendel

Chinese University of Hong Kong

Cai Chen

Chinese University of Hong Kong, Shenzhen

Thomas Keusch

INSEAD

Zacharias Sautner

University of Zurich and ECGI

© Janja Brendel, Cai Chen, Thomas Keusch and Zacharias Sautner 2026. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

This paper can be downloaded without charge from:
<https://doi.org/10.67929/ecgi-fin-1066-2025>

ECGI Working Paper Series in Finance

The Value of NGO Activism

Working Paper N° 1066/2025
July 2026

Janja Brendel
Cai Chen
Thomas Keusch
Zacharias Sautner

We thank Isabel Banal, Kai Ting Chong, Cheuk Ying Chow, Francesco Gatteschi, Ivan Gou, Yaxin Hou, Natalie Lee, Pak Yuen So, Sheilvy Soetanto, Thu Trang Tran, Linchen Yang, Kaihang Xue, Jiarui Zeng, and Sophie Zhang for their excellent research assistance.

© Janja Brendel, Cai Chen, Thomas Keusch and Zacharias Sautner 2026. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Abstract

We examine the implications of NGO activism around the world using novel data on NGO allegations about misleading or false corporate environmental and social claims ("E&S-washing"). These NGO campaigns primarily target large, visible firms in the consumer-facing or oil and gas industries, focusing predominantly on statements about firms' impacts on climate change, consumer health, and waste. NGOs target E&S-washing in consumer-focused disclosures such as advertisements, product labels, and packaging. Stocks react with negative announcement returns to NGO allegations, especially when the alleged behavior concerns financially material environmental issues. Negative media coverage also rises. NGO campaigns are associated with real changes: firms criticized for climate-related claims subsequently reduce their Scope 1 and 2 emission intensities. Firms facing other types of allegations are associated with improvements of their environmental and social policies more broadly. NGO allegations are also associated with subsequent increases in E&S-related shareholder proposals.

Keywords: Sustainability disclosure, Greenwashing, ESG, NGOs, Carbon emissions

JEL Classification: L31, M40, M41, M48, Q50, Q51

Janja Brendel

Chinese University of Hong Kong

Cai Chen

Chinese University of Hong Kong, Shenzhen

Thomas Keusch

INSEAD

Zacharias Sautner

University of Zurich and CEGI

The Value of NGO Activism*

Janja Brendel

Cai Chen

Thomas Keusch

Zacharias Sautner

July 2026

Abstract

We examine the implications of NGO activism around the world using novel data on NGO allegations about misleading or false corporate environmental and social claims (“E&S-washing”). These NGO campaigns primarily target large, visible firms in the consumer-facing or oil and gas industries, focusing predominantly on statements about firms’ impacts on climate change, consumer health, and waste. NGOs target E&S-washing in consumer-focused disclosures such as advertisements, product labels, and packaging. Stocks react with negative announcement returns to NGO allegations, especially when the alleged behavior concerns financially material environmental issues. Negative media coverage also rises. NGO campaigns are associated with real changes: firms criticized for climate-related claims subsequently reduce their Scope 1 and 2 emission intensities. Firms facing other types of allegations are associated with improvements of their environmental and social policies more broadly. NGO allegations are also associated with subsequent increases in E&S-related shareholder proposals.

JEL codes: L31, M40, M41, M48, Q50, Q51

Keywords: NGOs; E&S-washing; NGO activism; Monitoring role; Carbon emissions

* Brendel is from the Chinese University of Hong Kong (JanjaBrendel@cuhk.edu.hk), Chen is from Shenzhen Finance Institute and School of Management and Economics, Chinese University of Hong Kong, Shenzhen (ChenCai@cuhk.edu.cn), Keusch is from INSEAD (Thomas.Keusch@insead.edu), and Sautner is from the University of Zurich and the Swiss Finance Institute (Zacharias.Sautner@df.uzh.ch). Sautner is an external Research Expert of the European Commission. He served on the Sustainability Council of Lampe Asset Management and as a Regular Research Visitor at the ECB while the paper was being written. All other authors have no conflicts of interest to disclose. We would like to thank Caroline Flammer (the Editor), an anonymous Associate Editor, and two referees for constructive comments. We also appreciate helpful comments from Daniel Bens, Jonathan Black (discussant), Ying Cao, Gavin Cassar, Stefano Cascino, Vincent Chen, Cathay Yi-Hsuan Chen, Darwin Choi, Christoph Feichter, Zhaoyang Gu, Rubin Hao, Xiang-Yu Huang, Emirhan Ilhan, Otto Janschek, Igor Kadach (discussant), Xi Li, Zhenxing Li, Abraham Lioui, Ane Tamayo, Aneesh Raghunandan, Olivier Scaillet, Gerhard Speckbacher, Oscar Timmermans, George Yang, David Zerbib, Renzhe Zhang (discussant) and Sophie Zhang and seminar and conference participants at the Swiss Winter Accounting Conference (SWAC) 2026, the International Consortium for Values Conference Governance 2026 at Monash University, 2025 ASW Conference, the Exeter Sustainable Finance Conference, the Chinese University of Hong Kong, University of Mannheim, Goethe University Frankfurt, London School of Economics and Political Sciences, National Chengchi University, National University of Taipei, WHU, WU Vienna and the University of Macau. We thank Isabel Banal, Kai Ting Chong, Cheuk Ying Chow, Francesco Gatteschi, Ivan Gou, Yaxin Hou, Natalie Lee, Pak Yuen So, Sheilvy Soetanto, Thu Trang Tran, Linchen Yang, Kaihang Xue, Jiarui Zeng, and Sophie Zhang for their excellent research assistance. This paper benefited from discussions with Robert Blood, Edwin Lau, William Yu, and other NGOs about institutional details. We appreciate the generous financial support from INSEAD and CUHK, including funding from the “Initial Funding to Faculties for Impact Cases” from CUHK, Chung Chi College, and the INSEAD Hoffmann Institute. We also acknowledge the generous financial support from the Research Grant Council of the Hong Kong SAR, China (Early Career Scheme 24501623).

1. Introduction

With sustainability having emerged as a key theme in financial markets, a large body of research provides insights into whether and how institutional investors, financial intermediaries, regulators, or customers affect corporate environmental and social (E&S) policies, disclosures, and firm valuations (Liang and Renneboog 2017, Christensen et al. 2021, Starks 2023). Relative to this body of evidence, our understanding of the role of activism by Nongovernmental Organizations (NGOs) for corporate sustainability remains limited. This dearth of evidence is surprising. In a survey of sustainability experts, NGOs were identified as the single greatest contributors to sustainable development over the past decades, ranking ahead of financial institutions, institutional investors, or governments (GlobeScan 2019). Recent calls to broaden sustainability to a system-level approach also imply a greater focus on NGOs, which typically operate as “stewards of systemic change” (Flammer and Loch 2024).

In this paper, we examine a large international sample of NGO campaigns that target listed firms, shedding light on what the NGOs aim to achieve, whether their actions have financial implications, and whether they trigger changes in corporate and investor behavior. We examine these questions in the context of allegations by advocacy NGOs, such as Greenpeace or Friends of the Earth, over misleading or false corporate claims about environmental and social performance (“E&S-washing”).¹ We use E&S-washing as an umbrella term to refer to the alleged misrepresentation of corporate E&S risks, practices, and impacts, aimed at making firms appear more favorable than they are.

Our focus on E&S-washing has multiple motivations. First, investors, employees, and customers increasingly consider firms’ E&S characteristics when making investment, employment, or purchasing decisions (e.g., Hartzmark and Sussman 2019, Dai et al. 2021, Meier et al. 2023). These decisions may be ill-informed if firms misrepresent their E&S performance. Second, regulators, standard setters, and assurance providers only recently started to scrutinize E&S-washing, leaving a regulatory vacuum for years

¹ Advocacy NGOs typically pressure firms and governments to address market failures, such as negative externalities (e.g., carbon emissions) or information asymmetries (e.g., between firms and their consumers). On the contrary, service NGOs address needs that are not fully met by the market or the government (e.g., counseling, food, shelter, or medical treatment). Service NGOs typically do not campaign against firms and do not appear in our analysis.

(SEC 2021, ESMA 2022, GRI 2022, IAASB 2023). Strikingly, financial market regulators have begun using NGO reports as a source of information to detect corporate E&S-washing (ESMA 2024). This reflects that, unlike most regulators or assurance providers, NGOs have been tracking firms' E&S practices and potential misconduct for decades, having accumulated substantial expertise in scrutinizing E&S claims.² Thus, it appears important to provide a systematic analysis of the role of NGO activism.

Our analysis builds on novel data covering 1,211 allegations made by 329 NGOs against 286 listed firms from 24 countries between 2011 and 2022. Identifying E&S-washing poses challenges for NGOs and researchers alike, given the variety of claims that firms make across various communication channels. Our objective is therefore not to verify whether the E&S-washing allegations, as made public by the NGOs, are justified; instead, we focus on their determinants and impacts. That said, the NGO allegations are likely credible and substantiated, given the near absence of defamation lawsuits in response to the NGO allegations in our sample.³

In our first set of analyses, we provide an anatomy of the NGO allegations. A total of 46% of all allegations target firms in the U.S., followed by France (12%) and the UK (9%). The most frequently identified E&S-washed claims relate to firms' impacts on climate change (30%), consumer health benefits (22%), and waste handling (11%). More than half of all alleged E&S-washing occurs in disclosure channels targeted at consumers, such as product labels and packaging or advertisements. This is important to document as the switch by customers from less to more sustainable products or firms is viewed as a critical market mechanism through which firms are incentivized to improve E&S performance (Bénabou and Tirole 2010). If consumers act on misrepresented information, this mechanism may not work. In addition, customer-focused disclosure channels are not subject to scrutiny under typical sustainability reporting

² NGOs use multiple channels to engage with firms: they discuss perceived corporate wrongdoing privately with firms, conduct public shaming campaigns in which they use the media as a pressure tool, file shareholder proposals, alert regulatory agencies, or sue firms for their wrongdoing (e.g., Hoepner and Li 2021).

³ To assess whether some NGO accusations were false, we examined each allegation by hand, using web searches, litigation databases, and contacts at NGOs, to identify cases where NGOs have been found wrong or were sued. We identified only one such case. In this case, Resolute Forest Products sued Greenpeace for defamation and RICO violations over its criticism of the firm's forestry practices and impact on climate change. In 2019, a court dismissed most of Resolute's claims, finding that the NGO's statements were protected under anti-SLAPP law.

regulations. According to the NGOs, firms misinform the public most frequently through misleading or outright false statements or actions that contradict previously made promises, such as financing a new coal-fired power plant after a net-zero pledge. Most allegations are based on NGOs' own information acquisition, such as laboratory tests or their own investigations (NGOs piggyback on other stakeholders' public allegations in only 11 allegations).

We document that NGOs are more likely to target firms that are highly visible to investors and the public, that is, firms that are larger, have higher valuations, exhibit greater press coverage, and are consumer-facing. The latter finding squares with our evidence that E&S-washing often occurs in consumer-focused disclosures. Furthermore, NGOs tend to target firms with high environmental impacts, such as oil and gas firms or high-carbon emitters in general. These selection patterns likely reflect that NGOs aim to maximize attention to their campaigns and that visible firms and those with large E&S impacts have stronger E&S-washing incentives.

In the second set of analyses, we examine whether and when NGO campaigns trigger stock market reactions at target firms. We document negative abnormal returns when E&S-washing allegations are released, which are particularly pronounced if NGOs allege the washing of *financially material* environmental issues. Financially material issues are those that likely affect future revenues, costs, or risk according to the industry-specific materiality map developed by the Sustainability Accounting Standards Board (SASB).⁴ Across our full sample, returns decline on average by a market-adjusted 0.34% over the 3-day window centered around the announcement of an E&S-washing allegation. Notably, returns are 60bp more negative for allegations over financially material E-washing. This market reaction compares, for example, to market-adjusted returns of -1.58% around news that firms were charged over violations of environmental regulations (Karpoff et al. 2005), which constitute much more severe events. The valuation declines may indicate that investors worry about future reputational and legal costs, or that regulators will

⁴ SASB's materiality classification has also been used by Serafeim and Yoon (2022) or Bochkay et al. (2025), among others, and can be found on SASB's website (<http://sasb.s3-website-us-east-1.amazonaws.com>).

take actions based on the allegations.⁵ In addition, they may reflect a consumer backlash that is triggered by news about an NGO allegation. Providing suggestive evidence in support of this channel, we find a decline in operating performance for firms facing E-washing allegations. Consistent with the financial market reactions, we document an increase in *negative* media coverage after the allegations, which is also more pronounced if the allegations are over financially material E&S issues.

In the third set of analyses, we examine the corporate and investor responses to E&S-washing allegations. An analysis of the corporate response requires a reasonably large sample for which we can identify actions related to the source of the allegations (e.g., it is hard to identify actions when claims are over animal welfare). It also requires an outcome variable that is relatively standardized and comparable across firms. We can conduct such an exercise when firms are criticized for washing their impacts on climate change (“climate-washing”).⁶ Specifically, we examine whether firms reduce their carbon intensities after such allegations, potentially to better align their real activities with previous sustainability claims or in response to the public attention created by the NGO campaigns.

To conduct these tests, we employ a propensity score matched, difference-in-differences (DiD) design that addresses three key empirical challenges. First, because firms targeted by NGO allegations differ from non-targeted firms, particularly in terms of size, industry, and pre-allegation emissions, we match each treated firm to untreated firms within the same industry-year based on pre-treatment firm size and carbon intensities, thereby improving comparability between treatment and control firms. Second, because allegations occur at different points in time across firms, we use a *stacked* DiD design that forms calendar-year-specific treatment cohorts and estimates effects within a symmetric 2-year window around the allegation year (from two years before to two years after), thereby avoiding biases associated with staggered treatment timing. Third, because emissions data are measured with substantial noise, we account for

⁵ A report by ESMA (2024) indicates that concerns over regulatory actions in response to NGO allegations are plausible. An example of reputational and legal costs is Lululemon, which faces a class action lawsuit alleging that its “Be Planet” campaign misleads consumers as the firm’s emissions doubled since the campaign launched.

⁶ Climate-washing allegations make up more than 60% of all E-washing allegations, constituting the single most frequent E&S allegation topic.

variation in emissions data quality through fixed effects, estimate key tests on samples with high-quality emissions data only, and focus on Scope 1 and 2 intensities, which provide the most reliable measurement.

Our estimates suggest that NGO campaigns are associated with subsequent changes in firms' real activities: Scope 1 intensities decline by 8% to 9%, depending on the model, after NGOs voice their climate-washing allegations, estimated relative to firms without allegations. NGO campaigns are also followed by a decline in Scope 2 intensities. These results also hold in estimations without matching. When we estimate dynamic treatment effects, we find no evidence of significant pre-treatment trends, supporting the identifying assumption of our DiD design. Moreover, the significant reductions in emission intensities emerge only after the allegations.

Notably, the reductions in Scope 1 and 2 intensities after climate-washing allegations are concentrated among firms with high ownership by climate-conscious investors. Following Ilhan et al. (2023), we consider as "climate-conscious" those investors who are subject to sustainable investing stewardship codes in their home countries. We use this classification as such investors have been shown to exhibit more climate-related engagement (Ilhan et al. 2023, Shiraishi et al. 2022, Bonacchi et al. 2022).⁷ Our findings suggest that the decline in emission intensities arises, at least partially, because NGOs trigger subsequent engagement by climate-conscious investors. These effects can arise either directly, when NGO allegations prompt climate-conscious investors to engage portfolio firms in response to the allegations, or indirectly, when NGOs pressure investors to address the alleged issues with their portfolio firms.⁸

We conduct several tests that evaluate alternative interpretations of our findings. First, we show that our results hold when we restrict the sample to firms without major changes in corporate assets. This finding indicates that it is unlikely that the emission reductions we identify are driven by asset divestments rather than genuine improvements in emission performance. Second, we evaluate whether some of our results

⁷ Ilhan et al. (2023) show that firms with higher ownership by investors subject to stewardship codes provide better climate-related disclosures. Shiraishi et al. (2022) find that stewardship codes enhance the monitoring by investors, and Bonacchi et al. (2022) show how compliance with the UK's stewardship code improves the sustainability performance of portfolio firms.

⁸ For example, in 2022, over 100 NGOs launched the "Vanguard S.O.S." campaign, which pressures the asset manager to support climate action among portfolio firms in fossil fuels and related industries. NGOs and investor groups may also collaborate to engage firms (Reid and Toffel 2009).

originate from confounding decarbonization programs introduced around the time of the NGO campaigns. For Scope 1, most of the emission reductions originate from unconfounded targets, while for Scope 2, some of the change may possibly come from decarbonization programs, not just climate-washing allegations.

We document that the implications of NGO campaigns extend beyond climate outcomes. Using again a stacked DiD framework with matched target and control firms, we show that firms facing waste-related allegations subsequently report on waste reductions, firms facing biodiversity-related allegations start reporting on biodiversity impact reduction, and firms accused of misleading pricing claims become more likely to implement fair competition policies. These results, while based on smaller samples and subject to data limitations, suggest that NGO campaigns induce corporate responses across multiple E&S dimensions.

Finally, to corroborate that E&S-washing indeed triggers investor engagement, we show that E&S-washing allegations are followed by an increase in shareholder proposals at target firms. For example, firms targeted by E&S-washing allegations experience a 6.2% increase in the number of E-related proposals relative to matched control firms. Although E&S proposals usually do not pass at the shareholder meeting, He et al. (2023) show that they matter economically as they are informative about firms' E&S risks. Taken together, the proposal results provide further evidence that NGO activism can be associated with subsequent investor engagement. While the emission results capture the real implications of such engagement, the proposal results illuminate a channel through which investors respond to NGO allegations.

Our study contributes to the literature on the drivers of firms' E&S practices. Studies in this area have documented the treatment effects of institutional investors, establishing that greater institutional ownership is related to improvements in E&S performance, measured using ESG ratings (Dyck et al. 2019), carbon emissions (Azar et al. 2021), or climate disclosures (Flammer et al. 2021, Ilhan et al. 2023, Cohen et al. 2023a). Our study adds to this work by proposing that advocacy NGOs and their campaigns constitute an important source of information that can trigger investor engagement.

Next, we add to the literature on the monitoring role of NGOs. Dyreng et al. (2016) find that a campaign by the NGO ActionAid pressured FTSE 100 firms in the United Kingdom to comply with a tax rule requiring disclosure of subsidiary locations. Bonetti et al. (2024) discover that fracking operations

forced to disclose water pollutants reduce pollution more when they are under greater scrutiny by local anti-fracking NGOs and watershed groups. Rauter (2020) finds that natural resources companies forced to disclose extraction payments to foreign governments increase payments to host governments more when previously targeted by an NGO shaming campaign. Selmani Herab (2025) documents that NGO activism improves governance outcomes, including forced CEO turnover and executive pay. We contribute to this literature by providing direct and detailed evidence from a global sample across different industries on how NGO campaigns allege corporate E&S-washing and how this relates to financial and real outcomes. We thereby highlight the critical monitoring role of NGOs and provide more generalizable evidence with greater external validity compared to previous studies.

Finally, we contribute to the E&S-washing literature, which focuses mostly on a specific disclosure medium or particular type of E&S-washing. Hail et al. (2021), Chava et al. (2021), and Dzielinski et al. (2024) examine greenwashing in earnings calls. Marquis et al. (2016) and Grewal et al. (2026) show that firms selectively disclose smaller negative E impacts. Other studies focus on the S component, finding, for example, that firms disclose diversity commitments opportunistically or incorrectly (Baker et al. 2024, Bailey et al. 2025). Raghunandan and Rajgopal (2024) show that signatories of the Business Roundtable’s “Statement on the Purpose of a Corporation” do not engage in stakeholder-centric practices. Similar results on hedge funds signing up to the PRI are provided by Liang et al. (2022). We also provide evidence on the real consequences of E&S-washing detection, which prior studies do not examine across multiple E&S dimensions. We differ from this literature by providing, from the perspective of NGOs, an anatomy of the E&S issues that firms wash, the outlets in which E&S-washing occurs, the presentation or obfuscation styles, and the consequences thereof. NGO scrutiny complements regulatory efforts by targeting a wider range of disclosures than financial regulators typically assess, which is important since customer-focused disclosures also influence *investor* decisions, with regulatory bodies having acknowledged that NGOs play a crucial role as independent watchdogs, providing expertise and advocacy to combat greenwashing (ESMA 2024). Additionally, we show that much E&S-washing is aimed at consumers, which undermines market incentives for sustainability if consumers rely on misleading product labels or ads rather than formal reports.

2. Predictions

In this section, we derive the predictions that we use to guide our empirical analysis.

2.1. Determinants of NGO E&S-Washing Allegations

An NGO's decision to engage a firm over E&S-washing concerns depends on various factors. A typical prerequisite is that information emerges about potential wrongdoing from public sources, consumers, whistleblowers, NGOs' own laboratory tests of products, or undercover operations. Target selection might also be influenced by economic incentives, as an NGO's reputation and attention to its campaigns help attract donations or labor. The attention a campaign attracts should depend on the visibility of the target, which should increase with firm size, market value, and media coverage, and it should be higher if a target serves end customers (Servaes and Tamayo 2013). Campaign attention should be greater for targets with negative E&S impacts, such as firms in the oil and gas sector (Desai et al. 2023) or for firms with large carbon footprints. For such firms, the societal benefits from improving E&S outcomes through a campaign should also be largest. Finally, visible firms and those with the most adverse E&S impacts may also face the strongest incentives to engage in E&S-washing. This leads to the following prediction:

P1: NGOs are more likely to target visible firms and firms with large negative E&S impacts.

2.2. Stock Market and Media Response to NGO E&S-Washing Allegations

If NGO scrutiny of E&S claims is misplaced or economically irrelevant, NGO allegations should not trigger any stock market reactions. Conversely, stock markets should react to the allegations if they impact a firm's financial prospects or reputation. Several channels might create such effects. If an allegation changes the perceptions of customers or employees about a firm, future cash flows could be impaired, leading to a lower stock price. Allegations can also trigger regulatory actions or lawsuits that reduce cash flows and increase uncertainty.⁹ NGO campaigns are likely to be more impactful when they address issues that are financially

⁹ Businesses that engage in E&S-washing or violate sustainability laws increasingly face fines. Some of the highest fines were paid by Volkswagen (\$34bn) and Toyota (\$150m). Reputation damage can greatly exceed these fines.

material to the target, that is, issues that significantly affect revenues, costs, or risk. Hence, allegations over financially material issues should have a greater impact on the perceptions and actions of key stakeholders and create stronger stock market reactions. This leads to the following prediction:

P2: Stock returns react negatively to NGO E&S-washing allegations, especially if the allegations concern financially material issues.

Media reactions, especially negative ones, are also important for understanding whether NGO scrutiny is economically relevant and NGO campaigns succeed in capturing public attention. Specifically, media coverage can lend credibility to NGO allegations, and it can help disseminate them. This would be consistent with prior evidence showing that media coverage of NGOs has increased substantially (Yaziji and Doh 2009), with NGOs strategically engaging the media to exert pressure on firms (Dale 1996, Deegan and Islam 2014, Powers 2014, Couttenier and Hatte 2016). As with stock market reactions, NGO campaigns should create more negative media responses if they allege misrepresentation of financially material E&S issues:

P3: The news media react negatively to NGO E&S-washing allegations, especially if the allegations concern financially material issues.

2.3. Corporate and Investor Responses to NGO E&S-Washing Allegations

Whether NGO scrutiny of environmental and social claims carries meaningful consequences hinges on the corporate responses that such scrutiny provokes. One possible response is that target firms adjust their real operations to better align their business activities with their E&S claims or undertake E&S improvements in response to the public attention created by the NGO campaigns. Examining real responses is challenging as the allegations are over a wide range of E&S issues, many of which are hard to identify and measure using archival data. To gain insights into the consequences of NGO activism, we exploit the fact that more than 350 allegations involve climate-washing. These allegations concern misleading or false claims about corporate actions concerning climate change, for example, emission pathways that are clearly inconsistent

with carbon pledges. We focus on emissions because they provide broad data coverage and are measured in a relatively standardized way, facilitating comparisons across firms.¹⁰ Examining the subset of climate-washing allegations, we predict:

P4: Carbon intensities decline after climate-washing allegations by NGOs.

Institutional investors and NGOs often interact in intricate ways, with NGOs advocating for responsible corporate practices and investors responding through shareholder engagement to the stated allegations. As institutional investors vary in their background and incentives, we expect the corporate responses to be stronger when a firm's shareholders have pronounced E&S preferences. Following Ilhan et al. (2023), we infer such preferences by identifying institutional investors subject to stewardship codes. These codes are designed to enhance corporate sustainability, and investors bound by them should be more attentive to E&S issues at portfolio firms. Stewardship investors may therefore leverage their influence to demand operational changes. To examine this possibility, we consider whether climate-washing allegations trigger second-round effects from institutional investors, whereby the NGO campaigns trigger subsequent engagement from institutional investors. This effect can arise either directly, if attention to climate-washing triggers engagement, or indirectly, through NGO pressure on investors to address climate-washing within their portfolios. NGOs and investor groups may also collaborate to engage firms jointly.

P5: Carbon intensities decline more strongly after climate-washing allegations in firms with higher institutional ownership subject to stewardship codes.

A complementary channel through which institutional investors as well as other shareholders can engage firms is by filing shareholder proposals. Gillan and Starks (2000), for example, document that it is especially institutional investors that play a key role in sponsoring such proposals, with the passing rate

¹⁰ Though our primary focus is on changes in carbon intensities after climate-washing allegations, we consider in complementary tests a series of additional outcomes related to other E&S topics underlying other NGO allegations (e.g., waste and biodiversity). A caveat of these tests is the much smaller sample size and that outcomes are hard to compare across firms.

increasing with institutional investor support. For E&S-related topics, Flammer (2015) demonstrates that E&S-related proposals that narrowly pass lead to positive announcement returns and improved long-run firm performance. If NGO allegations raise awareness of E&S-washing among shareholders, one would expect an increase in E&S-related shareholder proposals following NGO allegations.

P6: E&S-related shareholder proposals increase after E&S-washing allegations by NGOs.

3. Data and Sample

We obtain data on NGOs' E&S-washing allegations from SigWatch, a data analytics firm specializing in monitoring and analyzing NGO activism campaigns. Since 2011, SigWatch has collected data on various NGO campaigns from public sources such as NGO websites, press releases, and research reports (Koenig 2017). For each NGO campaign, SigWatch provides information on the NGO and the target firm, a summary of the allegations, and web links to the source documents. To identify E&S-washing allegations, we searched the SigWatch database and read the reported information about the nature of all NGO campaigns. Based on this information, we manually identified all NGO campaigns that related to alleged E&S-washing.¹¹ We define E&S-washing as allegations that corporate claims exaggerate the favorability of a firm's E&S risks, practices, or impacts.

To construct our sample, we require that a target firm of an E&S-washing campaign is listed, publishes sustainability reports according to the Corporate Register (CR) database, and has non-missing data on total assets. CR is one of the most comprehensive databases for sustainability reports. These filters yield 1,211 E&S-washing allegations against 286 firms between 2011 and 2022.

We complement the SigWatch data with additional data. We use data from SASB's industry-specific materiality map to identify allegations that cover financially material topics (Bochkay et al. 2025, Matsumura et al. 2024, Serafeim and Yoon 2022). Financial materiality is assessed by SASB based on

¹¹ We employ a two-step identification procedure to verify the data obtained from SigWatch. First, we conduct an initial keyword search across the full text of the allegation using a predefined list of search terms (e.g., "greenwash", "false claim", "misrepresent"). Second, we perform a comprehensive manual verification of every matching record to ensure the accuracy of our sample.

keyword searches of publicly available corporate documents, which reveal how often a particular E&S issue arises in a certain industry. The economic impact of these issues is then assessed by evaluating whether management (or mismanagement) of them affects analyst and investor valuations. Using RepRisk data, we measure negative news articles about a target firm. To study changes in E&S outcomes, we use data from Trucost on carbon intensities and from LSEG on other E&S-related outcomes. We use data from Diligent Market Intelligence (DMI) on shareholder proposals. Data from FactSet allow us to measure the fraction of shares held by institutional investors. Data on firm characteristics, emission targets, and whether firms link executive pay to E&S dimensions are from LSEG. Based on data from Corporate Register and LSEG, we identify whether firms follow Global Reporting Initiative (GRI) standards when preparing sustainability reports and whether these reports are assured. We proxy for media coverage using data from RavenPack.

4. Anatomy of NGOs' E&S-Washing Allegations

In this section, we provide an anatomy of the 1,211 E&S-washing allegations in our sample, with a focus on the allegation targets, the accusing NGOs, the accusation topics, and obfuscation styles and channels.

4.1. Sample Characteristics of E&S-Washing Allegations

In Figure 1, we plot the number of E&S-washing allegations over time. We find that E-washing allegations have increased sharply since 2018, whereas S-washing allegations have declined.¹² In terms of the country distribution of E&S-washing allegations, Figure 2 reveals that 46.7% of the 286 allegation targets reside in the U.S., followed by France (11.6%), the UK (8.5%), Switzerland (7.5%), and Germany (5.4%). The U.S. dominance may reflect that the country has the most listed firms and NGOs in the world.

Table 1, Panel A, lists firms targeted at least ten times during the sample period. The top-3 firms include Nestlé (77 allegations or 6.4% of the sample), Coca-Cola (70 cases or 5.8%), and Mondelez (48 cases or 4%). In Table 1, Panel B, we list NGOs that made at least ten allegations. The top-3 NGOs are Friends of the Earth, Greenpeace, and Foodwatch. In 287 campaigns, more than one NGO targets a firm.

¹² The spike in 2015 is related to the firms' responses to the signing of the Paris Agreement and revelations that oil and gas firms knew about climate change much earlier than they admitted.

We can identify the sources of information underlying the NGO allegations for 41 campaigns. We cannot evaluate the source for the remaining cases, because the campaign summary that SigWatch provides does not mention any source that an NGO may have used. Figure 3 shows that the source is leaked firm-internal documents in 56% of the cases, in 22% it is academic or other research, in 12% lab tests, in 5% undercover film material, and in 2% each it is NGO supporters and activists or consumer-submitted data. Across all NGO campaigns, NGOs piggyback on others' public allegations in only 11 campaigns.¹³ This figure indicates that there is substantial information production by the NGOs themselves.

In 218 campaigns, the NGOs announced that they file complaints with regulatory bodies or government agencies, and in 85 campaigns, they announced plans to sue the firms. Based on data on enforcement actions in CapitalIQ, only 12 sample firms faced E&S-related enforcement actions during the sample period (the small number may reflect limited data coverage by CapitalIQ). Importantly, only one of these cases relates to an allegation in our sample, while the other cases involve non-E&S-related enforcements or are not triggered by NGOs.

Summary statistics at the allegation level are reported in IA Table 1.

4.2. E&S-Washing Topics

We list in Table 2, Panel A, the E&S topics that NGOs claim are E&S-washed, and how many of them are classified as financially material. To identify these E&S topics, we manually classified each E&S campaign according to the issue that is allegedly E&S-washed. Our classification of campaigns covering financially material topics is based on SASB's industry-based materiality map.¹⁴ Based on our classification, the 1,211 campaigns are split evenly between E (49.2%) and S (50.8%) topics. On the E side, firms are most frequently criticized for E&S-washing their risks, practices, or impacts concerning climate change (30.2%

¹³ To determine whether an NGO piggybacked on others' public allegations, we hand-checked each of the 1,211 allegation cases in our sample, looking for explicit references to other sources in the allegation description in SigWatch. An example in our sample was when in February 2015, the New York Attorney General ordered Target and other major retailers to pull their store-brand herbal supplements after DNA tests revealed they lacked the advertised herbs and instead contained cheap, undeclared fillers and allergens. Following the investigation, consumer watchdog NGO Center for Science in the Public Interest (CSPI) amplified the findings, using the scandal to highlight the supplement industry's weak standards and demand stricter federal regulations.

¹⁴ To identify financially material E&S topics, we perform a fuzzy match between the E&S allegation topics in our sample and industry-specific keywords of material SASB topics following Bochkay et al. (2025).

of allegations). Most of these climate-washing allegations (89.9%) cover financially material topics. Climate-related allegations are followed by allegations about waste-related (11.2%) or biodiversity-related (3.4%) issues. On the S side, allegations often concern consumer health topics (22%), but they also cover transparent pricing (8.4%) or animal welfare (4.1%). Overall, the topic list shows that many allegations are linked to consumers. This is important because E&S-washing can undermine the consumer shift toward genuinely sustainable firms (e.g., when firms portray themselves as greener than they are). As argued by Bénabou and Tirole (2010), a consumer response to bad E&S practices is a key economic channel through which corporate sustainability practices can influence financial performance. If this channel is undermined, E&S-washing may delay or impede improvements in corporate sustainability.

4.3. E&S-Washing Obfuscation Styles and Channels

We manually identify the obfuscation styles through which firms allegedly E&S-wash. We perform this classification by reading each campaign description in SigWatch and grouping it into one of seven categories.¹⁵ Table 2, Panel B, shows that NGOs most frequently, in 36.4% of cases, allege that firms make misleading claims about E&S risks, practices, or impacts. An example is an energy firm claiming to focus on renewable sources while most investments are in oil & gas exploration. The second-most prominent style, at 13.8%, is “talk vs. action”, referring to cases where firms’ practices are arguably inconsistent with public promises. In 13.5% of the campaigns, NGOs allege that firms make outright false statements.

Our analysis of disclosure outlets, based on descriptions by SigWatch, suggests that most E&S-washing is targeted at consumers: Table 2, Panel C, shows that in 25.3% of the campaigns, product labels or packaging are identified by the NGOs as containing E&S-washing. A similar category is E&S-washing of other product information (13.3%), most of which relates to S issues. Two related categories are advertisements (23.1%) and PR campaigns (13.3%). Evidence that customers and consumers increasingly

¹⁵ To conduct the manual classification, we started with pre-defining the seven categories, created a list of keywords that likely refer to any of these categories, searched the SigWatch descriptions of the NGO campaigns for these keywords, and then hand-checked the identified keywords and whether the keyword-based classification is correct. For the category “Information Omitted”, for example, the keywords include “incomplete info; omitted info; omits info; omit info; failed to disclose; fails to disclose; fail to disclose; failed to report; fails to report; fail to report; failed to mention; fails to mention; fail to mention”.

base their purchasing decisions on firms' E&S performance information may explain why firms have incentives to E&S-wash in these outlets. Notably, less than 1% of all NGO allegations target statements directly in sustainability or financial reports. However, it may be that NGOs use information in these reports as a starting point for examining E&S-washing in other disclosure outlets.¹⁶ Overall, it appears that NGO scrutiny complements sustainability reporting regulation and assurance, which focus on misleading sustainability and financial reports but not on product labels and packaging or advertising campaigns.

5. Determinants of E&S-Washing Allegations

To understand how NGOs select targets and to test prediction P1, we create a firm-year panel from the universe of firms in LSEG Refinitiv for the 2011-2022 period. For a firm-year to end up in our sample, we require data on total assets and that firms have filed a sustainability report according to LSEG (to ensure that firms disclose some E&S information, which should affect the likelihood of being targeted for E&S-washing).¹⁷ This leads to an unbalanced panel of 37,289 firm-years, of which 663 (36,626) firm-years are subject (not subject) to E&S-washing allegations.¹⁸ In terms of unique firms, the sample includes 286 target and 6,657 control firms. Based on this sample, we compare characteristics of firm-years with E&S-washing allegations to firm-years without such allegations, to test whether NGOs are more likely to target visible firms and those with large negative E&S impacts. We estimate variants of the following linear probability model for firm i in year t (results are similar to logit models):

$$E\&S\text{-}Washing_{i,t} = \Phi \text{Industry}_i + \beta \ln(Assets)_{i,t-1} + \eta \text{Tobin's } Q_{i,t-1} + \theta \ln(1 + \text{News Articles})_{i,t-1} \\ + \gamma \ln(SI \text{ Intensity})_{i,t-1} + \Omega \text{Controls}_{i,t-1} + \alpha_{\text{Country}} + \alpha_t + \varepsilon_{i,t} \quad (1)$$

¹⁶ An example for an NGO using corporate financial disclosures was when ActionAid campaigned against firms that heavily relied on tax havens. The campaign was compiled by the NGO based on information distilled from various corporate reports.

¹⁷ For the construction of this panel, we require information on sustainability reports based on data from LSEG, not from CR, as we do for the allegation targets. The reason is that purchasing CR data for the full panel would be very expensive. For 98% of the firm-years of our allegation targets, the LSEG data also indicate that a sustainability report has been filed.

¹⁸ Sample sizes in the regressions can be below 37,289 observations due to missing data for some variables. We do not match targeted and untargeted firm-years in this analysis as the goal is to broadly identify observable differences between allegation targets and other firms. However, we use propensity score matching below in analyses of the outcomes of E&S-washing campaigns.

where *E&S-Washing* equals 1 if firm i experiences an E&S-washing allegation in year t , and 0 otherwise. We also estimate Eq. (1) with topic-specific indicators for *E-Washing*, *S-Washing*, or *Climate-Washing*. To test prediction P1, we include the vector **Industry**, which contains three indicators that each equal 1 if a firm operates in consumer goods, consumer services, or oil & gas, respectively, and 0 otherwise. These indicators compare each of the three industries with all other industries (the omitted category). To further test for P1, we include $\ln(\text{Assets})$, *Tobin's Q*, $\ln(1+\text{News Articles})$ and $\ln(1+\text{SI Intensity})$, measuring a firm's size, valuation, media prominence, and Scope 1 emissions over revenues, all in year $t-1$ (emissions are included when explaining *Climate-Washing*). **Controls** is a vector of control variables at the firm-year level. α_{Country} and α_t are country and time fixed effects. Some specifications include firm or industry fixed effects (2-digit GICS codes).¹⁹ Standard errors are clustered at the firm and year levels.

Estimates of Eq. (1) are reported in Table 3. In columns 1–2, which focus on E&S-washing allegations, we find support for P1: the likelihood of E&S-washing allegations is higher for more visible firms, that is, for firms that are consumer-facing, in oil & gas, larger, more highly valued, and covered by more news. According to column 1, firms in oil & gas and consumer goods have 3pp and 4pp higher allegation rates, respectively. In the same column, a doubling in assets is correlated with a 0.8pp increase in the likelihood of an E&S-washing allegation, and a doubling in news articles is associated with a 0.6pp increase. These are large effects given that the unconditional probability of an E&S allegation is 1.8%. In column 3, results are robust when we add E&S-based executive pay as a control variable, which itself is positively related to E&S-washing allegations. In column 4, which uses firm fixed effects, effects are much weaker, suggesting that the results in columns 1–3 come from the cross-section rather than from within-firm variation. In columns 5–10, which consider topic-specific allegations, the estimates are largely consistent with columns 1–3, though some divergences emerge: the higher E&S allegation rates of oil & gas firms originate mostly from more E-washing allegations (column 5), especially over climate-washing issues (column 9), while oil

¹⁹ In these specifications, we cannot estimate or interpret the three industry indicators used to test P1 because they are absorbed by the GICS-based industry fixed effects, and the comparison is no longer relative to all other industries.

& gas firms do not face a higher likelihood of S-washing allegations (column 7). For climate-washing allegations, the likelihood of an allegation rises significantly with the carbon footprint, consistent with P1.²⁰

6. Stock Market and Media Responses to NGO Allegations

In this section, we examine how stock markets and the media respond to E&S-washing allegations by NGOs. This allows us to test predictions P2 and P3.

6.1. Stock Market Response to NGO Allegations

P2 predicts that stock markets react negatively to E&S-washing allegations, especially if these allegations cover financially material issues. To test this prediction, Table 4, Panel A, reports 3-day, buy-and-hold market-adjusted returns from the day before to the day after the publication of an NGO allegation. We observe a negative unconditional return of -0.34% over the 3-day window centered around the E&S-washing allegation date (t -statistic of 3.86). While the magnitude of this average response is modest, it may mask variation across allegations in terms of the financial materiality of the allegations, as predicted in P2. Thus, we estimate OLS regressions for allegation a at firm i in year t :

$$\begin{aligned} \text{Stock Market Reaction}_{a,i,t} = & \beta_1 \text{Material E-Washing Allegation}_{a,i,t} + \beta_2 \text{Material S-Washing} \\ & \text{Allegation}_{a,i,t} + \Omega \text{Controls}_{a,i,t-1} + \alpha_{\text{Country}} + \alpha_t + \varepsilon_{a,i,t} \end{aligned} \quad (2)$$

where *Stock Market Reaction* is the 3-day, buy-and-hold market-adjusted return from the day before to the day after the publication of an NGO allegation. *Material E-Washing Allegation* equals 1 if an NGO alleges E-washing of a financially material topic, and 0 otherwise. *Material S-Washing Allegation* is defined accordingly. According to the SASB classification that we use, topics are financially material to a firm if they generate substantial interest from investors as they impact a firm's revenues, costs, or risks. *Controls* is a vector of control variables at the firm-year or allegation level. We do not control for industry fixed

²⁰ In IA Table 2, we estimate Eq. (1) using the allegation intensity, the number of allegations in a year scaled by sales, rather than the allegation indicator as the dependent variable. This alternative measure alleviates concerns that the prior results merely reflect the greater propensity of larger firms to face allegations due to their scale of operations. Results are similar to those in Table 3.

effects in Eq. (2) because the SASB’s definition of financial materiality is based on industry membership. Standard errors are clustered at the firm and year levels.

Estimation results of Eq. (2) are reported in Table 4, Panel B. Supporting prediction P2, the return reaction is significantly more negative, about 60bp larger, for financially material allegations, but only if these allegations concern E topics.²¹ Combined with the observation that about 38% of all E-washing allegations are material (IA Table 1), this suggests that NGO scrutiny of corporate sustainability claims matters to investors. In IA Table 4, we offer an exploratory analysis of one channel underlying this result. Our tests indicate that NGO allegations trigger concerns among consumers and are followed by a decline in operating performance (only for E-washing allegations). Hence, the return reaction may partially reflect anticipation of a performance decline, in addition to other possible adverse firm outcomes.

We find some noteworthy results for two NGO-related control variables that measure an NGO’s reach and impact (*NGO Influence*), and whether an NGO specializes, based on our sample, either in E or S campaigns rather than being a generalist NGO (*Specialist NGO*). Specifically, we find that *NGO Influence* negatively correlates with the return response, implying that allegations by more influential NGOs are taken more seriously by investors and are associated with more negative market reactions. Similarly, market reactions are more negative if an allegation comes from an NGO that specializes.

Figure 4 visualizes the return results using an event study analysis for the $[-10, +10]$ -trading day window around an allegation. We compare returns around material E-washing allegations with all other E&S-washing allegations (Panel A) and with non-material E-washing allegations (Panel B). Firms facing material E-washing allegations show a significantly steeper decline in returns than firms in the other two groups. The effects occur mainly between trading days $t-2$ and $t+2$. The pre-event decline in stock prices may be due to ambiguity regarding the initial NGO allegation date for some campaigns but could also reflect information leakage. There is no evidence that the decline in returns reverses after an allegation.

²¹ This finding is robust to double-clustering standard errors by firm and year or by firm and year-month. In IA Table 3, we show that the regression results are robust to dropping 81 allegations against a firm that are very close to each other (10 days or less). This robustness test helps address the concern that the event windows may overlap when a firm faces multiple allegations in a narrow time window.

6.2. Media Response to NGO Allegations

We next shed light on how the media responds to the allegation news and test P3. Table 5, Panel A, shows a 0.053 increase in negative E&S news articles over the 3-day window around an E&S-washing allegation, or 14.6% relative to the average article count in the three days before the allegation.²² This finding supports P3. We study variation in this media response by estimating for allegation a at firm i in year t :

$$\Delta \text{Negative E\&S News}_{a,i,t} = \beta_1 \text{Material E-Washing Allegation}_{a,i,t} + \beta_2 \text{Material S-Washing Allegation}_{a,i,t} + \Omega \text{Controls}_{a,i,t-1} + \alpha_{\text{Country}} + \alpha_t + \varepsilon_{a,i,t}, \quad (3)$$

where $\Delta \text{Negative E\&S News}$ is the growth rate in the number of negative E and S news articles about a target from three days before to three days after an allegation. We also estimate Eq. (3) with topic-specific news using $\Delta \text{Negative E News}$ and $\Delta \text{Negative S News}$, two variables that bifurcate the E&S measure into E and S dimensions. The variables of interest are *Material E-Washing Allegation* and *Material S-Washing Allegation*. We include the controls from Eq. (2) and add some media-related variables (e.g., past news).

Estimation results of Eq. (3) are reported in Table 5, Panel B. In columns 1–2, financially material E-washing allegations (S-washing allegations) are followed by an increase in negative E&S news articles of 0.23 to 0.29 (0.19 to 0.21), relative to the days before and to immaterial allegations. This is a meaningful increase, as the average number of E&S articles before an allegation is 0.35. In columns 3–4, material E-washing allegations increase negative E-related news between 0.2 and 0.24 (this is a large effect relative to the average pre-event E news coverage of 0.24 articles). In columns 5–6, we find no comparable effects for S allegations. Overall, the support for prediction P3 is mixed but consistent with the stock market reaction which is also concentrated in environmental allegations. Our results relate to prior work on the monitoring function of the news media in corporate sustainability (Heese et al. 2022) and suggest that the media take

²² We are unable to separate NGO-sourced media from independent media coverage within our data, and this limitation reflects a structural feature of how ESG-related coverage is produced. Specifically, NGOs and independent media are deeply intertwined: many independent media articles are triggered by, cite, or reproduce NGO reports and press releases, making a clean separation artificial. As a result, Neither RepRisk nor RavenPack provide a structured variable that identifies the originating source type at the incident level, and independent media do not consistently label content as NGO-driven. We verified this by reviewing all available variable definitions in RepRisk and RavenPack confirmed this limitation. As a result, isolating NGO-generated media coverage from independent journalism is not feasible within our empirical framework.

cues from NGO campaigns to identify firms with questionable E&S practices. Different from the return reactions, the media reaction does not vary significantly with NGO influence or specialization.²³

7. Corporate and Investor Responses to NGO Allegations

In this section, we test predictions P4 to P6 by examining corporate and investor responses to NGO allegations. For the corporate response, we focus on changes in carbon intensities because climate-washing allegations are the most frequent allegation type (Table 2). Moreover, emissions can be measured in relatively standardized and comparable ways across firms, and emissions typically receive the highest investor attention across E&S topics. We complement these tests with analyses of other E&S outcomes for which coverage and comparability are weaker. Finally, we study shareholder proposals on E&S topics around NGO allegations.

7.1. Changes in Carbon Intensities around NGO Allegations

7.1.1. Estimation Design. To test P4, we examine changes in carbon intensities at firms targeted by climate-washing allegations. These tests pose several challenges. The first challenge is that firms targeted by NGOs differ systematically from non-targeted firms, as shown in Table 3. A particular concern is that climate-washing targets are larger, operate in a few specific industries, and have generally higher carbon intensities. Hence, these pre-allegation differences might cause any changes in emission intensities, for example, in response to confounding shocks from regulations or shifts in consumer pressure (the staggered timing of NGO allegations over time mitigates this concern only partly). To address this challenge, we use propensity score matching (PSM) and identify for each firm that is treated by a climate-washing allegation up to three similar control firms that did not receive any E&S-washing allegations. We select these control firms within the same industry-year of a treated firm, whereby industries are based on 2-digit GICS industry codes and

²³ IA Table 5 shows that the media reaction results are robust to dropping allegations that are close to each other.

years refer to the allegation years. Notably, to account for pre-treatment differences, we match firms based on their size and carbon intensities (Scope 1, 2, and 3 upstream) one year before the allegation year.²⁴

A second challenge arises because the treatment status in our setting (i.e., the allegations) is staggered across firms over time. Though it helps in mitigating concerns about confounding one-time shocks, it complicates causal inference in our DiD regressions because treatment effects may evolve over time and already-treated firms are not appropriate controls for later-treated firms. We address this challenge by implementing a stacked DiD design with calendar-year-specific treatment cohorts. In this design, each treatment cohort contains the firms treated in a given year and its control firms. When a firm faces multiple climate-washing allegations, we consider only the first allegation year.

A third challenge relates to measurement error in emission intensities, which arises because emissions are measured with considerable noise due to imprecise estimation methods, incomplete reporting, or data imputation (e.g., Busch et al. 2022, Chen et al. 2025). As a result, observed emission changes might only imperfectly account for firms' true carbon performance. We address this challenge in three alternate ways. First, we include fixed effects that account for variation in the quality of emissions data. We base these fixed effects on Trucost's classification of the respective data source into different groups.²⁵ Second, to enhance the reliability of our estimates, we restrict some tests to "high-quality" observations (we repeat the matching within this subsample). We consider as "high-quality" emissions data obtained from official sources, such as CDP disclosures or sustainability reports. Observations based on estimates, extrapolations from prior years, or partial data are not considered as high quality. Third, we focus on Scope 1 and 2 carbon intensities, for which data quality and coverage are higher compared to Scope 3 intensities.

We then estimate the following model on firm i and year t among firms in the treatment and control groups, comparing emission intensities over a symmetric 2-year window around the year in which a target received a climate-washing allegation:

²⁴ Additionally matching on Scope 3 downstream intensities (or total Scope 3 intensities) would lead to a significant loss of observations due to missing data.

²⁵ Trucost classifies the data sources into 28 different categories. Examples of these categories include "Exact Value from Personal Communication", "Extrapolated from Prior Year", or "Exact Value from Annual Report/10K/Financial Accounts Disclosure".

$$\begin{aligned} \ln(SI/2 \text{ Intensity})_{i,t} = & \beta \text{ Treat Climate}_i \times \text{Post}_t + \Omega \text{ Controls}_{i,t-1} + \alpha_{\text{Firm} \times \text{Cohort}} + \gamma_{\text{Year} \times \text{Cohort}} + \\ & \theta_{\text{EmissionsDataQuality}} + \varepsilon_{i,t}, \end{aligned} \quad (4)$$

where *SI/2 Intensity* are the Scope 1 or 2 emissions scaled by revenues of firm *i* in year *t*. *Treat Climate_i* equals 1 for treated firms, and 0 for control firms, and *Post* equals 1 in the allegation year and the subsequent two years, and 0 in the two pre-allegation years. **Controls** include firm fundamentals, past news coverage, and whether a firm has an emission target in place (to control for downward emissions trajectories due to prior net-zero commitments). $\alpha_{\text{Firm} \times \text{Cohort}}$ and $\gamma_{\text{Year} \times \text{Cohort}}$ represent firm-by-cohort fixed effects and year-by-cohort fixed effects to account for persistent differences across firms within each cohort and for common shocks affecting all firms in a cohort-year. $\theta_{\text{EmissionsDataQuality}}$ are fixed effects for the emission data quality categories. We cluster standard errors at the year-by-cohort level. Summary statistics for the emissions variables are reported in IA Table 6.

7.1.2. Estimation Results. Estimates of Eq. (4) are presented in Table 6. We report in columns 1–2 results on the full matched sample and in columns 3–4 for target and matched control firms with high-quality emission data. In all columns, we find significant negative coefficients on *Treat Climate* $\times$ *Post*. Columns 1 and 3 indicate a 7.6% to 9.4% decline in a target’s Scope 1 intensity after climate-washing allegations, relative to control firms. In columns 2 and 4, Scope 2 intensity declines by 9.8% to 11.3% more at firms facing climate-washing allegations, relative to the control group. We discuss these results’ robustness below. Our effect sizes are comparable to those documented in prior studies of disclosure regulations. For example, Tomar (2023) finds that U.S. facilities reduce emissions by 7.9% following the disclosure requirement by the Greenhouse Gas Reporting Program, and Downar et al. (2021) show that the UK emissions disclosure mandate led to an 8% reduction in emissions and a 10% to 13% decline in emission intensities at affected firms.

In IA Table 7, we complement this analysis with estimates for Scope 3 intensities. A limitation of this analysis is that we have Scope 3 data only for upstream emissions (downstream Scope 3 is missing for

many sample firms). For Scope 3 upstream, we find positive but insignificant effects. Hence, there is no statistical evidence that Scope 1 and 2 reductions arise as firms shift emissions to the supply chain.²⁶

To test P5, we examine whether the decline in carbon intensities might be related to institutional investors using NGO allegations as a basis for their own engagement. To do so, we re-estimate Eq. (4) after splitting the sample at the median value of *Stewardship IO*. We calculate this measure as the number of the firm's outstanding shares owned by institutional investors subject to stewardship codes in their home countries scaled by the firm's number of outstanding shares held by institutional investors.

Table 6, columns 5–6, show that the decline in Scope 1 and 2 intensities after climate-washing allegations is particularly strong among firms with high stewardship ownership. This subgroup experiences a 10% (12.6%) decline in the Scope 1 (Scope 2) intensity of target firms. In contrast, the subgroup with low stewardship ownership in columns 7–8 experiences an insignificant and much smaller decline.

7.1.3. Robustness Checks and Alternative Interpretations. We conduct several tests to validate the robustness of our results and to evaluate alternative interpretations. First, in Figure 5, we examine dynamic treatment effects to test whether treated firms were already on a different emissions trajectory before the allegations. This analysis also allows us to separately identify treatment coefficients in the allegation year, the first post year, and the second post year. Using year $t-1$ as the reference year, Panels A and B show no statistically significant pre-trend for Scope 1 or Scope 2 intensities, especially when the analysis is restricted to high-quality emissions data.

The post-allegation patterns differ somewhat across emission types. For Scope 1 intensities, the relation becomes significantly negative in year $t+1$ but then attenuates in $t+2$. By contrast, Scope 2 intensities decline significantly in year $t+1$ and remain at lower levels also in $t+2$. These different dynamics may reflect differences in the incentives and costs to sustain an emissions decline. Specifically, the initial decline in Scope 1 intensities likely reflects operational improvements and heightened managerial attention

²⁶ Recent studies document that firms facing environmental pressure might divest polluting assets to buyers with supply chain or joint venture relationships (e.g., Duchin et al. 2025, Dai et al. 2021a).

following NGO or investor engagement following climate-washing allegations. However, sustaining these reductions possibly requires more fundamental technological or capital-intensive changes to production processes, which are costly and take time to implement.²⁷ This might explain why Scope 1 intensities partially rebound once initial operational adjustments are exhausted and scrutiny fades. By contrast, Scope 2 reductions can be achieved through procurement or energy-efficiency measures, which may produce more persistent declines.²⁸

Given that our results for Scope 1 and Scope 2 intensities are concentrated among firms with high stewardship ownership, we confirm in Figure 5, Panel C, the absence of pre-trends for this subsample. For Scope 1, the significant decrease occurs in year $t+1$ but attenuates by $t+2$. On the contrary, for Scope 2 intensities, the decline occurs immediately in year t and persists through year $t+2$.

Second, in IA Table 8, we evaluate whether key pre-allegation characteristics are balanced between treated and control firms. As expected, our matching approach leads to high comparability of treated and control firms along the matched pre-treatment dimension, thereby mitigating concerns that the post-allegation differences are driven by pre-existing differences in these characteristics. Despite our matching, some differences remain with respect to some control variables (e.g., news coverage, institutional ownership, and emission targets), making it important to control for them in the analysis.

Third, in IA Table 9, we show that the emission effects are unchanged in regressions that either relax the PSM matching or address potential alternative explanations. Specifically, in columns 1–2, results do not change when estimating effects for the full sample without PSM. This finding suggests that our baseline result is not strongly driven by observable differences between treated and control firms. In columns 3–4, results continue to hold among the subsample of firms where assets did *not* decline from year $t-1$ to year t . This finding strengthens our interpretation by ruling out the possibility that the decline in emissions is

²⁷ For example, a manufacturing firm may initially reduce Scope 1 intensities by temporarily changing production processes or temporarily operating its most efficient facilities. However, sustaining these reductions typically requires capital-intensive investments, such as replacing production equipment or electrifying industrial processes. As production normalizes before these investments are completed, some of the initial reductions may partially reverse.

²⁸ Consistent with our findings, Dzieliński et al. (2024) find that climate talk in conference calls is negatively related to subsequent changes in emissions, and the overall emissions reductions are mostly driven by Scope 2 emissions.

driven by asset divestments. If firms reduced emissions by selling carbon-intensive assets, we would expect to observe a corresponding decline in total assets. By excluding such firms from the analysis, we identify the treatment effect within a relatively clean subset of firms, mitigating concerns that the estimated decline in emissions reflects asset divestments rather than operational decarbonization. In columns 5–6, we distinguish between two groups of treated firms: (i) firms for which the timing of climate-washing allegations is unlikely to be confounded by the launch of a decarbonization or net-zero program, and (ii) firms for which such confounding cannot be ruled out.²⁹ We define treatment as potentially confounded if a firm launches a decarbonization program in the same year that the climate-washing allegation occurs. For Scope 1 intensities, we find that our results originate mostly from unconfounded observations. For Scope 2, however, there are treatment effects for both groups of target firms, with the effect being larger among those where the NGO campaign could be confounded by a decarbonization program. Hence, for Scope 2 intensities, some of the relations we identify might come from decarbonization initiatives, not just climate-washing allegations. This might explain the relatively large magnitude of the Scope 2 results in Table 6.³⁰

7.2. Changes in Other Firm Outcomes around NGO Allegations

The emission results naturally raise the question of whether firms also respond to other types of E&S-washing allegations. As noted above, a challenge when exploring other outcomes is that we need allegation-specific variables that reliably capture whether firm behavior changes in response to the underlying NGO allegations. Additionally, we require a sufficiently large number of allegations to ensure adequate statistical power. We can provide such an analysis on the E-washing side for waste- and biodiversity-related allegations and on the S-washing side for allegations related to consumer health and transparent pricing. Together with our analysis of climate-washing allegations, this allows us to cover outcomes related to the top-3 E-related and the top-2 S-related allegations (see Table 2).

²⁹ For firms with emission targets according to LSEG, we use generative AI to collect data on when decarbonization or net-zero programs were introduced. We collected these data from news reports or sustainability reports. Based on our classification, 15% of allegation targets initiated a decarbonization program in the allegation year and are therefore classified as potentially confounded, whereas the remaining 85% are not.

³⁰ Some decarbonization programs could be the result of the NGO allegations. However, from reading news and sustainability, it seems that these programs were typically initiated some time before.

We measure the response to waste-related allegations by considering whether firms change the amount of hazardous waste (*Hazardous Waste*) and whether they report on waste reduction initiatives (*Waste Reduction Initiative*). For biodiversity-related allegations, we measure whether firms respond by reporting on their biodiversity impacts and impact reductions (*Biodiversity Impact Reduction*). For consumer-health allegations, we consider whether a firm responds by introducing a policy aimed at protecting customer health and safety (*Consumer Health Policy*), and for transparent-pricing allegations, whether firms state that they strive to be a fair competitor (*Fair Competition Policy*). As before, we implement a stacked DiD design and match treated firms to control firms within an industry-year based on firm size and the outcome variables of interest one year before the allegation.

Table 7 reports the estimation results. While we find no reductions in hazardous waste after waste-related allegations in column 1, column 2 shows that treated firms are 3.3pp more likely to report on waste reduction initiatives, relative to the control firms, after waste-related allegations. In column 3, firms are 8pp more likely to start reporting on biodiversity impacts and their reductions after biodiversity-related allegations. Moreover, column 5 shows that, after a transparent-pricing allegation, treated firms are 4.9pp more likely to have a fair competition policy, relative to matched control firms. Overall, these findings suggest that firms also respond to some other E&S-washing allegations. However, we interpret these findings with caution because the sample sizes are more limited and the measures are harder to compare across firms relative to the emissions analysis.

7.3. Changes in Shareholder Proposals around NGO Allegations

Finally, to test prediction P6, we examine whether NGO E&S-washing allegations are followed by an increase in E&S-related shareholder proposals. For these tests, we match within an industry-year based on firm size and the pre-allegation number of shareholder proposals (using the log of one plus that number), again measured one year before the allegation. This matching allows us to account for a firm's historical proposal-related shareholder activism, which likely serves as a predictor of future proposal activity. We then estimate the following stacked DiD model for firm i and year t among firms in the treatment and

control groups in the symmetric 2-year window around the year in which a target received its first E&S-washing allegation:

$$\begin{aligned} \ln(1 + \# E\&S \text{ Proposals})_{i,t} = & \beta_1 \text{Treat E\&S-Washing}_i \times \text{Post}_t + \Omega \text{Controls}_{i,t-1} \\ & + \alpha_{\text{Firm} \times \text{Cohort}} + \gamma_{\text{Year} \times \text{Cohort}} + \varepsilon_{i,t}, \end{aligned} \quad (5)$$

where $\# E\&S \text{ Proposals}$ counts E- or S-related shareholder proposals of firm i in year t . $\text{Treat E\&S-Washing}_i$ equals 1 for treated firms with an E&S-washing allegation, and 0 for control firms, and Post_t equals 1 for the year in which an E&S-washing allegation was raised and for the two post-allegation years, and 0 for the two pre-allegation years.³¹ **Controls** includes firm fundamental and $\alpha_{\text{Firm} \times \text{Cohort}}$ and $\gamma_{\text{Year} \times \text{Cohort}}$ are firm-by-cohort and year-by-cohort fixed effects. We cluster standard errors at the year-by-cohort level.

Table 8 reports the estimation results. We find that E&S-washing allegations are followed by an increase in both environmental and social shareholder proposals. In column 1, firms targeted by E&S-washing allegations experience a 6.8% increase in the number of E-related proposals relative to matched control firms. In column 2, the economic magnitudes are similar, as S-related proposals rise by 7.2% after an allegation. To illustrate the mechanism underlying these findings, consider Foodwatch’s campaign criticizing Coca-Cola’s marketing of sugary drinks. Following the campaign, investors filed a shareholder proposal requesting an independent study assessing the financial and reputational risks associated with the firm’s sugar-related public health impacts.

Taken together, these proposal results provide further evidence that NGO activism is associated with subsequent investor engagement. In particular, while the emission results capture the consequences of such engagement, the proposal results illuminate one of the engagement mechanisms through which investors respond to NGO allegations. Although E&S-related shareholder proposals typically fail (He et al. 2023) and are therefore unlikely to directly cause the operational changes we document, they likely contribute to

³¹ We define the treatment event E- or S-washing allegations as the increased attention due to NGO allegations can spill over into proposals of *any* type (i.e., an S-washing allegation might also trigger an E-related proposal). The reason is that shareholders who become alarmed about a firm’s conduct in one domain often scrutinize it across the board; once the NGO “hits” with its allegation, the overall reputation gets potentially affected; and investors “wake up”.

the broader pressure that induces firms to adjust their behavior. Together, these findings corroborate our earlier conclusion that NGO campaigns can mobilize institutional investors to exert pressure on target firms.

Whereas shareholder proposals represent one form of investor engagement, investors may also respond by exiting their investments. IA Table 10 examines whether NGO allegations are associated with the exit of institutional shareholders, particularly stewardship investors. In these tests, we find no evidence that NGO allegations trigger selling by stewardship investors. This finding aligns with theoretical and empirical literature showing that ESG-concerned investors prefer voice over divestment (Hart and Zingales 2017, Hoepner et al. 2024). This non-result is also consistent with evidence that institutional investors prioritize active, behind-the-scenes engagement to manage sustainability risks, treating exit as a secondary, conditional mechanism (Krueger et al. 2020, McCahery et al. 2016).

8. Conclusions

We show that NGO campaigns that scrutinize corporate E&S claims are associated with financial and real corporate outcomes, as reflected in stock market and media reactions, declines in carbon intensities, adoption of corporate E&S policies, and increases in shareholder proposals. NGO campaigns appear to provide a basis for subsequent investor engagement as emission reductions following climate-washing allegations are concentrated among firms with high ownership by investors subject to stewardship codes, and E&S-related shareholder proposals increase significantly after allegations.

Our results indicate that NGOs can play an important system-level monitoring role in corporate sustainability. Moreover, our findings have implications for regulatory efforts to detect and prevent E&S-washing. Since many instances of E&S-washings target consumers through product labels, packaging, and advertisements, which are channels that fall outside the scope of typical sustainability reporting regulation and assurance, they call into question the premise that disclosure mandates alone will incentivize sustainability improvements by facilitating consumer switching towards more sustainable firms (Bénabou and Tirole 2010, Meier et al. 2023). NGO scrutiny can complement E&S disclosure regulation and assurance at the system level because NGOs monitor a wider range of corporate communications (ESMA

2024). The documented interplay between NGOs and institutional investors suggests that the effectiveness of corporate sustainability governance depends on the broader ecosystem of monitors, not solely on any single actor (Flammer and Loch 2024).

Appendix A. Variable Definitions

Variable Name	Definition	Source
Allegation Level Variables		
<i>Stock Market Reaction</i> _{a,i,t}	The 3-day buy-and-hold return of the target firm from the day before to the day after the NGO allegation. The return is adjusted for the buy-and-hold return on the market index for the country where the firm is headquartered.	LSEG
Δ <i>Negative E&S News</i> _{a,i,t}	Change in the number of negative environmental- and social-related news articles from the three days before to the three days after the NGO allegation.	RepRisk
Δ <i>Negative E News</i> _{a,i,t}	Change in the number of negative environment-related news articles from the three days before to the three days after the NGO allegation.	RepRisk
Δ <i>Negative S News</i> _{a,i,t}	Change in the number of negative social-related news articles from three days before to three days after the NGO allegation.	RepRisk
<i>Prior Negative E&S News</i> _{a,i,t}	Number of negative environmental- and social-related news articles over the three days leading up to the NGO allegation.	RepRisk
<i>Prior Negative E News</i> _{a,i,t}	Number of negative environment-related news articles over the three days leading up to the NGO allegation.	RepRisk
<i>Prior Negative S News</i> _{a,i,t}	Number of social-related negative news articles over the three days leading up to the NGO allegation.	RepRisk
<i>Material E-Washing Allegation</i> _{a,i,t}	Indicator that equals 1 if the environmental topic that the environmental-washing allegation relates to is financially material for the target firm, and 0 otherwise. Financial materiality is identified using the SASB materiality map. For the classification of the allegation category “Other Environment” in Table 2, we use disaggregated information on the specific environmental topic that the allegation relates to.	SigWatch, SASB, hand collection
<i>Material S-Washing Allegation</i> _{a,i,t}	Indicator that equals 1 if the social topic that the social-washing allegation relates to is financially material for the target firm, and 0 otherwise. Financial materiality is identified using the SASB materiality map. For the classification of the allegation category “Other Social” in Table 2, we use disaggregated information on the specific social topic that the allegation relates to.	SigWatch, SASB, hand collection
<i>Allegation Sentiment</i> _{a,i,t}	Categorical variable for how negative the NGO’s comments about the target firm are, coded by Sigwatch into one of the following: -2 (very negative), -1 (negative), 0 (neutral), +1 (positive), +2 (very positive). Positive numbers indicate that NGOs praised the firm, and negative numbers designate criticism towards the firm’s action.	SigWatch
<i>NGO Influence</i> _{a,i,t}	Categorical variable for an NGO’s reach and influence estimated by SigWatch. Values for this variable range between 0.5 (for local NGOs) and 2.75 (for global coalitions), with higher values indicating broader geographic reach and influence (from local, national, world regional, to global) through greater and more international operations and coalitions.	SigWatch
<i>Piggybacking</i> _{a,i,t}	Indicator that equals 1 if the NGO allegation was previously already voiced by another party such as a media outlet, and 0 otherwise.	Hand collection
<i>Misleading Claim</i> _{a,i,t}	Indicator that equals 1 for campaigns alleging that the target firm made a claim or statement about its environmental or social practices or outcomes that is not necessarily incorrect	SigWatch, hand collection

<i>False Claim</i> _{a,i,t}	but creates the wrong impression among the audience, and 0 for campaigns with other allegations. Indicator that equals 1 for campaigns alleging that the target firm made an incorrect statement about its environmental or social practices or outcomes, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>Talk vs Action</i> _{a,i,t}	Indicator that equals 1 for campaigns alleging that the target firm's practices and outcomes are inconsistent with publicly announced pledges or promises, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>False Solution</i> _{a,i,t}	Indicator that equals 1 for campaigns alleging that the target firm offered a false solution to solve environmental or social problems it encounters, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>Information Hidden</i> _{a,i,t}	Indicator that equals 1 for campaigns alleging that the target firm was hiding information about its E&S activities, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>Information Omitted</i> _{a,i,t}	Indicator that equals 1 for campaigns alleging that the target firm was omitting information about its E&S activities, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>Other Style</i> _{a,i,t}	Indicator that equals 1 for all remaining campaigns that could not be allocated to Misleading Claim, False Claim, Talk vs. Action, False Solution, Information Hidden, or Information Omitted, and 0 otherwise.	SigWatch, hand collection
Firm-Year Level Variables		
<i>E&S-Washing</i> _{i,t}	Indicator that equals 1 for firm-years with environmental and social (E&S)-washing allegations, and 0 otherwise.	SigWatch
<i>E-Washing</i> _{i,t}	Indicator that equals 1 for firm-years with environmental-washing allegations, and 0 otherwise.	SigWatch
<i>Climate-Washing</i> _{i,t}	Indicator that equals 1 for firm-years with climate-washing allegations, and 0 otherwise. Climate-washing is a subset of the E-washing.	SigWatch
<i>S-Washing</i> _{i,t}	Indicator that equals 1 for firm-years with social-washing allegations, and 0 otherwise.	SigWatch
<i>Treat Climate</i> _i × <i>Post</i> _t	Indicator that equals 1 for firm-years after a firm receives a climate-washing allegation, and 0 otherwise. If a firm faces several climate-washing allegations, then the first allegation is considered.	SigWatch
<i>Treat Waste</i> _i × <i>Post</i> _t	Indicator that equals 1 for firm-years after a firm receives a waste-related allegation, and 0 otherwise. If a firm faces several waste-related allegations, then the first allegation is considered.	SigWatch
<i>Treat Biodiversity</i> _i × <i>Post</i> _t	Indicator that equals 1 for firm-years after a firm receives a biodiversity-related allegation, and 0 otherwise. If a firm faces several biodiversity-related allegations, then the first allegation is considered.	SigWatch
<i>Treat Consumer Health</i> _i × <i>Post</i> _t	Indicator that equals 1 for firm-years after a firm receives a consumer health-related allegation, and 0 otherwise. If a firm faces several consumer health-related allegations, then the first allegation is considered.	SigWatch
<i>Treat Transparent Pricing</i> _i × <i>Post</i> _t	Indicator that equals 1 for firm-years after a firm receives a transparent pricing-related allegation, and 0 otherwise. If a firm faces several transparent pricing-washing allegations, then the first allegation is considered.	SigWatch
<i>Assurance</i> _{i,t}	Indicator that equals 1 for firm-years in which the firm has its sustainability reports assured, and 0 otherwise.	Corporate Register

<i>GRI Standards_{i,t}</i>	Indicator that equals 1 if the firm followed any of the Global Reporting Initiative's sustainability reporting standards in its sustainability report, and 0 otherwise.	Corporate Register
<i>E Disclosure Score_{i,t}</i>	Bloomberg's environmental disclosure score of a firm, which ranges from 0.1 (firms that disclose a minimum amount of environmental data) to 100 (firms that disclose every data point that Bloomberg collects). These data points relate to disclosures about the firm's risks, policies, and impacts regarding air quality, climate change, biodiversity, energy, waste, environmental supply chain management, and water consumption.	Bloomberg
<i>S Disclosure Score_{i,t}</i>	Bloomberg's social disclosure score of a firm, which ranges from 0.1 for firms that disclose a minimum amount of social data to 100 for firms that disclose every data point that Bloomberg collects. These data points relate to disclosures about the firm's risks, policies, and impacts regarding community, customers, diversity, ethics, employee safety, human capital development, and employee-related supply chain management.	Bloomberg
<i>E&S Disclosure Score_{i,t}</i>	Average of the E Disclosure Score and S Disclosure Score.	Bloomberg
<i>S1 Intensity_{i,t}</i>	Scope 1 CO ₂ and CO ₂ -equivalent emissions of a firm scaled by revenues (US\$ million).	Trucost
<i>S2 Intensity_{i,t}</i>	Scope 2 CO ₂ and CO ₂ -equivalent emissions of a firm scaled by revenues (in US\$ million).	Trucost
<i>S3 Up Intensity_{i,t}</i>	Scope 3 CO ₂ and CO ₂ -equivalent upstream emissions of a firm scaled by revenues (in US\$ million).	Trucost
<i>Hazardous Waste_{i,t}</i>	Amount of hazardous waste produced by a firm (in tons). Hazardous wastes pose substantial or potential threats to public health or the environment.	LSEG
<i>Waste Reduction Initiative_{i,t}</i>	Indicator that equals 1 if a firm reports on initiatives to recycle, reduce, reuse, substitute, treat or phase out total waste, and 0 otherwise.	LSEG
<i>Biodiversity Impact Reduction_{i,t}</i>	Indicator that equals 1 if a firm reports on its impact on biodiversity or on activities to reduce its impact on the native ecosystems and species, as well as the biodiversity of protected and sensitive areas, and 0 otherwise.	LSEG
<i>Consumer Health Policy_{i,t}</i>	Indicator that equals 1 if a firm has a policy to protect customer health and safety, and 0 otherwise.	LSEG
<i>Fair Competition Policy_{i,t}</i>	Indicator that equals 1 if a firm describes in a code of conduct that it strives to be a fair competitor, and 0 otherwise.	LSEG
<i># E-Proposals_{i,t}</i>	Number of environment-related shareholder proposals filed at the shareholder meeting of a firm.	DMI
<i># S-Proposals_{i,t}</i>	Number of social-related shareholder proposals filed at the shareholder meeting of a firm.	DMI
<i>Emission Target_{i,t}</i>	Indicator that equals 1 if a firm has set targets or objectives to be achieved on emission reduction, and 0 otherwise.	LSEG
<i>Consumer Goods_{i,t}</i>	Indicator that equals 1 for a firm in the consumer goods industry, and 0 otherwise.	Corporate Register/LSEG
<i>Consumer Services_{i,t}</i>	Indicator that equals 1 for a firm in the consumer services industry, and 0 otherwise.	Corporate Register/LSEG
<i>Oil & Gas_{i,t}</i>	Indicator that equals 1 for a firm in the oil and gas industry, and 0 otherwise.	Corporate Register/LSEG
<i>Stewardship IO_{i,t}</i>	Number of the firm's outstanding shares owned by institutional investors that are subject to stewardship codes in their home countries scaled by the firm's total number of outstanding shares held by institutional owners.	FactSet

$IO_{i,t-1}$	Ratio of the firm's shares owned by institutional owners to total shares outstanding (ranges between 0 and 1).	FactSet
$Assets_{i,t-1}$	Book value of total assets (WC02999) of a firm.	LSEG
$Tobin's\ Q_{i,t-1}$	Ratio of total debt (WC03255) and the market value of equity (WC08001) to the book value of total assets (WC02999).	LSEG
$ROA_{i,t-1}$	Earnings before interest and taxes (WC18191) scaled by lagged total assets (WC02999) of a firm.	LSEG
$Sales/Assets_{i,t}$	Sales (WC01001) of a firm scaled by total assets (WC02999).	LSEG
$News\ Articles_{i,t-1}$	Number of news articles related to the firm during the year.	RavenPack
$E\&S\ Comp_{i,t-1}$	Indicator that equals 1 for firm-years in which executive compensation is partly dependent on environmental or social metrics, and 0 otherwise.	LSEG
NGO Level Variables		
$Specialist\ NGO_{a,i}$	Indicator that equals 1 for NGOs if the NGO specializes in either environmental or social issues, based on the allegations they make in our sample, and 0 otherwise. Specifically, an NGO is labeled a specialist if it has at least 3 campaigns in our sample and all of its campaigns are either on the E or the S dimension.	SigWatch
$NGO\ Influence_{a,i}$	Measures an NGO's ability to disseminate its message, scaled from local (lowest) to global (highest). For example, a global NGO network is assigned the highest value of 2.75, while a local NGO is assigned the lowest value of 0.5 (increased to 1.0 if based in the USA). Values are coded by SigWatch.	SigWatch

Notes. This Appendix provides variable definitions and sources. Continuous variables (except stock returns) are winsorized at 1st and 99th percentiles.

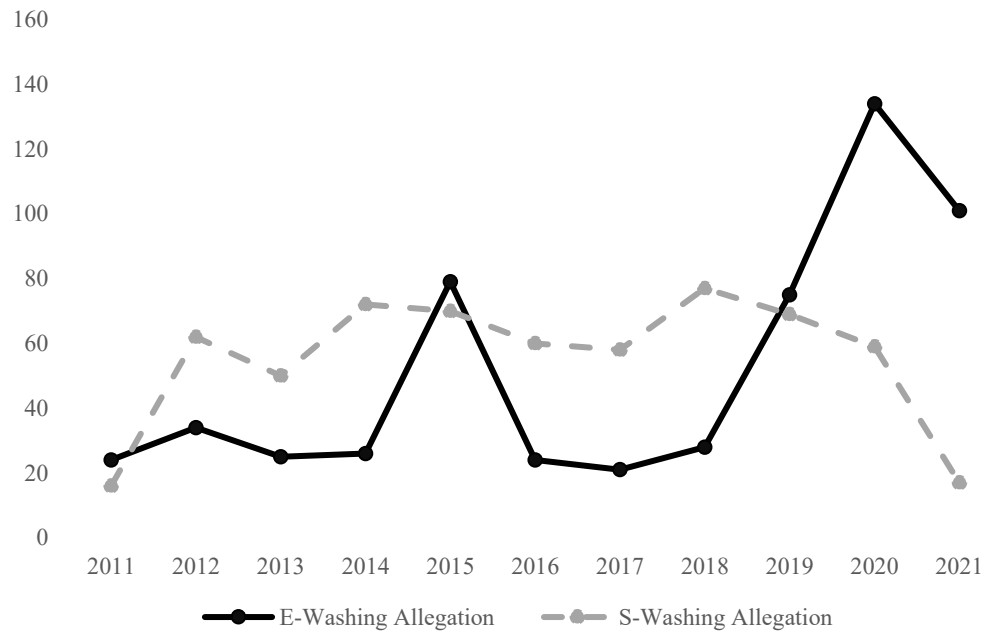
References

- Azar J, Duro M, Kadach I, Ormazabal G (2021) The Big Three and corporate carbon emissions around the world. *J. Financial Econom.* 142:674-696.
- Bailey M, Glaeser S, Omartian JD, Raghunandan A (2025) Misreporting of mandatory ESG disclosures: Evidence from gender pay gap information. *Management Sci.* forthcoming
- Baker AC, Larcker DF, McClure CG, Saraph D, Watts EM (2024) Diversity washing. *J. Accounting Res.* 62:1661-1709.
- Bénabou R, Tirole J (2010) Individual and corporate social responsibility. *Economica* 77:1-19.
- Bochkay K, Hales J, Serafeim G (2025) Disclosure standards and communication norms: Evidence of voluntary sustainability standards as a coordinating device for capital markets. *Rev. Accounting Stud.* 30:3021-3064.
- Bonacchi M, Klein A, Longo S, Strampelli G (2022) The effects of credible voluntary disclosures: Institutional investor engagement and investees' ESG performances. Working paper.
- Bonetti P, Leuz C, Michelon G (2024) Internalizing externalities through public pressure: Transparency regulation for fracking and water quality. Working paper.
- Busch T, Bassen A, Lewandowski S, Sump F (2022) Corporate carbon and financial performance revisited. *Organ. Environ.* 35:154-171.
- Chava S, Du W, Malakar B (2021) Do managers walk the talk on environmental and social issues? Working paper.
- Chen C, Lioui A, Scaillet O (2025) Green silence: Double machine learning carbon emissions under sample selection bias. Working paper.
- Christensen HB, Hail L, Leuz C (2021) Mandatory CSR and sustainability reporting: Economic analysis and literature review. *Rev. Accounting Stud.* 26(3):1176-1248.
- Cohen S, Kadach I, Ormazabal G (2023a) Institutional investors, climate disclosure, and carbon emissions. *J. Accounting Econom.* 76:101640.
- Cohen S, Kadach I, Ormazabal G, Reichelstein S (2023b) Executive compensation tied to ESG performance: International evidence. *J. Accounting Res.* 61:805-853.
- Couttenier M, Hatte S (2016) Mass media effects on non-governmental organizations. *J. Development Econom.* 123:57-72.
- Dai R, Duan R, Liang H, Ng L (2021a) Outsourcing climate change. European Corporate Governance Institute-Finance Working Paper (723).
- Dai R, Liang H, Ng L (2021b) Socially responsible customers. *J. Financial Econom.* 142:598-626.
- Dale S (1996) McLuhan's children: The Greenpeace message and the media. *Between the Lines*.
- Deegan C, Islam MA (2014) An exploration of NGO and media efforts to influence workplace practices and associated accountability within global supply chains. *British Accounting Rev.* 46:397-415.
- Desai H, Lam P, Li B, Rajgopal S (2023) An analysis of carbon-reduction pledges of US oil and gas companies. *Management Sci.* 69:3748-3758.
- Downar B, Ernstberger J, Reichelstein S, Schwenen S, Zaklan A (2021) The impact of carbon disclosure mandates on emissions and financial operating performance. *Rev. Accounting Stud.* 26:1137-1175.
- Duchin R, Gao J, Xu X (2025) Sustainability or greenwashing: Evidence from the asset market for industrial pollution. *J. Finance* 80:699-754.
- Dyck A, Lins KV, Roth L, Wagner HF (2019) Do institutional investors drive corporate social responsibility? International evidence. *J. Financial Econom.* 131:693-714.

- Dyreng SD, Hoopes JL, Wilde JH (2016) Public pressure and corporate tax behavior. *J. Accounting Res.* 54:147-186.
- Dzieliński M, Eugster F, Sjöström E, Wagner AF (2024) Do firms walk the climate talk? Working paper.
- European Securities and Markets Authority (ESMA) (2024) Final report on greenwashing.
- European Securities and Markets Authority (ESMA) (2022) Sustainable finance roadmap 2022-2024.
- Flammer C (2015) Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach. *Management Sci.* 61(11):2549-2568.
- Flammer C, Loch C (2024) Sustainability. *Management Sci.* 70(10):vii-vii (Editorial Statement).
- Flammer C, Toffel M, Viswanathan K (2021) Shareholder activism and firms' voluntary disclosure of climate change risks. *Strategic Management J.* 42:1850-1879.
- Gillan SL, Starks LT (2000) Corporate governance proposals and shareholder activism: The role of institutional investors. *J. Financial Econom.* 57:275-305.
- GlobeScan (2019) The 2019 GlobeScan/SustainAbility leaders survey. Report.
- Global Reporting Initiative (GRI) (2022) Auditing to save the planet: The battle against greenwashing.
- Grewal J, Richardson GD, Wang J (2026) Effects of mandatory carbon reporting on greenwashing. *Accounting Rev* 101: 263-293.
- Hail L, Kim S, Zhang RX (2021) How do managers greenwash? Evidence from earnings conference calls. Working paper.
- Hart O, Zingales L (2017) Companies should maximize shareholder welfare not market value. *J. Law, Finance, Accounting* 2:247-274.
- Hartzmark SM, Sussman AB (2019) Do investors value sustainability? A natural experiment examining ranking and fund flows. *J. Finance* 74:2789-2837.
- Hatte S, Koenig P (2020) The geography of NGO activism against multinational corporations. *World Bank Econom. Rev.* 34:143-163.
- He Y, Kahraman B, Lowry M (2023) ES risks and shareholder voice. *Rev. Financial Stud.* 36:4824-4863.
- Heese J, Pérez-Cavazos Q, Peter CD (2022) When the local newspaper leaves town: The effects of local newspaper closures on corporate misconduct. *J. Financial Econom.* 145:445-463.
- Hoepner AGF, Li Q (2021) The impact of NGO activism. In: Putting purpose into practice: The economics of mutuality, 245-256, Oxford University Press.
- Hoepner AG, Oikonomou I, Sautner Z, Starks LT, Zhou XY (2024) ESG shareholder engagement and downside risk. *Rev. Finance* 28:483-510.
- Ilhan E, Krueger P, Sautner Z, Starks L (2023) Climate risk disclosure and institutional investors. *Rev. Financial Stud.* 36:2617-2650.
- International Auditing and Assurance Standards Board (IAASB) (2023) Proposed international standard on sustainability assurance.
- Karpoff J, Lott J, Wehry E (2005) The reputational penalties for environmental violations: Empirical evidence. *J. Law Econom.* 48:653-675.
- Koenig P (2017) Notes on SigWatch's NGO campaign database. Working paper.
- Krueger P, Sautner Z, Starks LT (2020) The importance of climate risks for institutional investors. *Rev. Financial Stud.* 33:1067-1111.
- Liang H, Renneboog L (2017) On the foundations of corporate social responsibility. *J. Finance* 72:853-910.

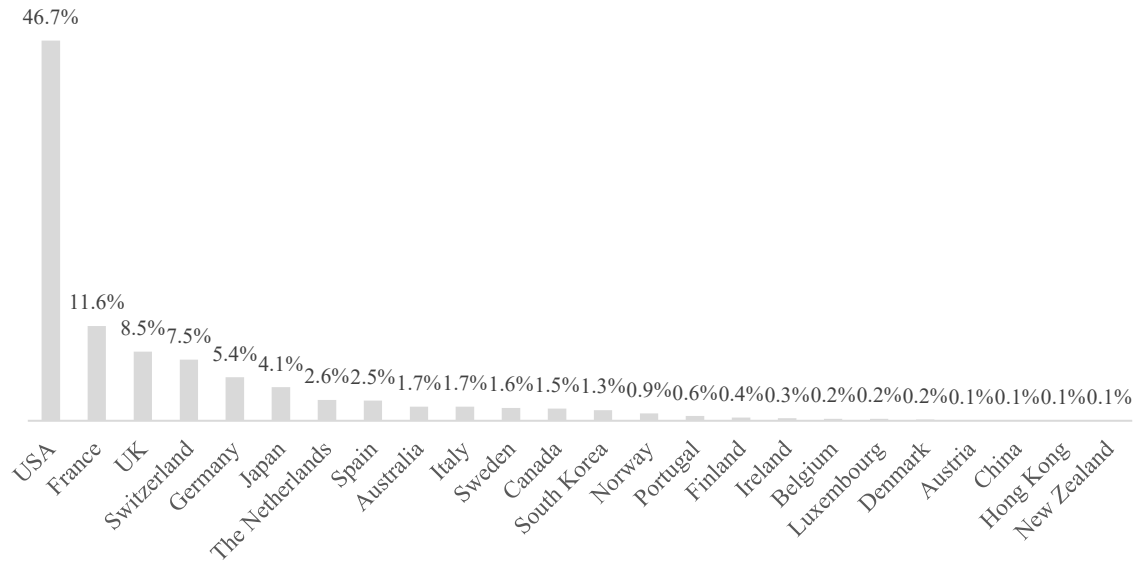
- Liang H, Sun L, Teo M (2022) Responsible hedge funds. *Rev. Finance* 26:1585-1633.
- Marquis C, Toffel M, Zhou Y (2016) Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organ. Sci.* 27:483-504.
- Matsumura EM, Prakash R, Vera-Muñoz SC (2024) Climate-risk materiality and firm risk. *Rev. Accounting Stud.* 29:23-74.
- McCahery JA, Sautner Z, Starks LT (2016) Behind the scenes: The corporate governance preferences of institutional investors. *J. Finance* 71:2905-2932.
- Meier J-M, Servaes H, Wei J, Xiao S (2023) Do consumers care about ESG? Evidence from barcode-level sales data. Working paper.
- Powers M (2014) The structural organization of NGO publicity work: Explaining divergent publicity strategies at humanitarian and human rights organizations. *Internat. J. Comm.* 8:90-107.
- Raghunandan A, Rajgopal S (2024) Do socially responsible firms walk the talk? *J. Law Econom.* 67:767-810.
- Rauter T (2020) The effect of mandatory extraction payment disclosures on corporate payment and investment policies abroad. *J. Accounting Res.* 58:1075-1116.
- Reid EM, Toffel MW (2009) Responding to public and private politics: Corporate disclosure of climate change strategies. *Strategic Management J.* 30:1157-1178.
- Securities and Exchange Commission (SEC) (2021) SEC announces enforcement task force focused on climate and ESG issues.
- Selmani Herab E (2025) The role of non-governmental organisations in corporate governance. Working paper.
- Serafeim G, Yoon A (2022) Which corporate ESG news does the market react to? *Financial Analysts J.* 78:59-78.
- Servaes H, Tamayo A (2013) The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Sci.* 59:1045-1061.
- Shiraishi Y, Ikeda N, Arikawa Y, Inoue K (2022) Stewardship code, institutional investors, and firm value: International evidence. Working paper.
- Starks L (2023) Presidential address: Sustainable finance and ESG issues - Value versus values. *J. Finance* 78:1837-1872.
- Tomar S (2023) Greenhouse gas disclosure and emissions benchmarking. *J. Accounting Res.* 61:451-492.
- Yaziji M, Doh J (2009) NGOs and corporations: Conflict and collaboration. Cambridge University Press.

Figure 1. Time-Series of the Number of E&S-Washing Allegations



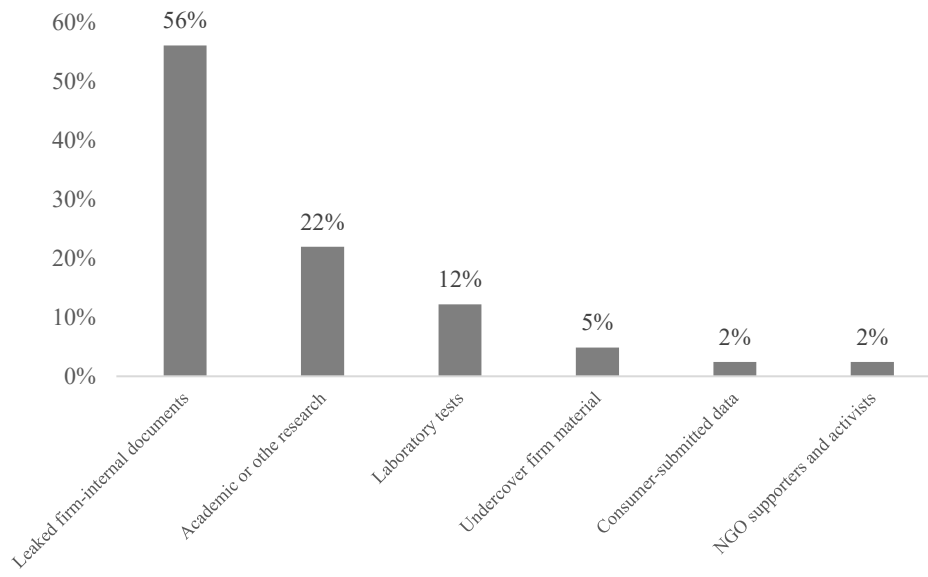
Notes. This figure plots the number of E-washing allegations (solid line) and S-washing allegations (dashed line) over time. We omit the year 2022 in the figure as we only have data for the beginning of that year. The sample consists of 1,211 NGO E&S-washing campaigns between 2011 and 2022.

Figure 2. E&S-Washing Allegations across Countries



Notes. This figure presents the distribution of NGO E&S-washing campaigns across countries of the targeted firms. The sample consists of 1,211 NGO E&S-washing campaigns between 2011 and 2022.

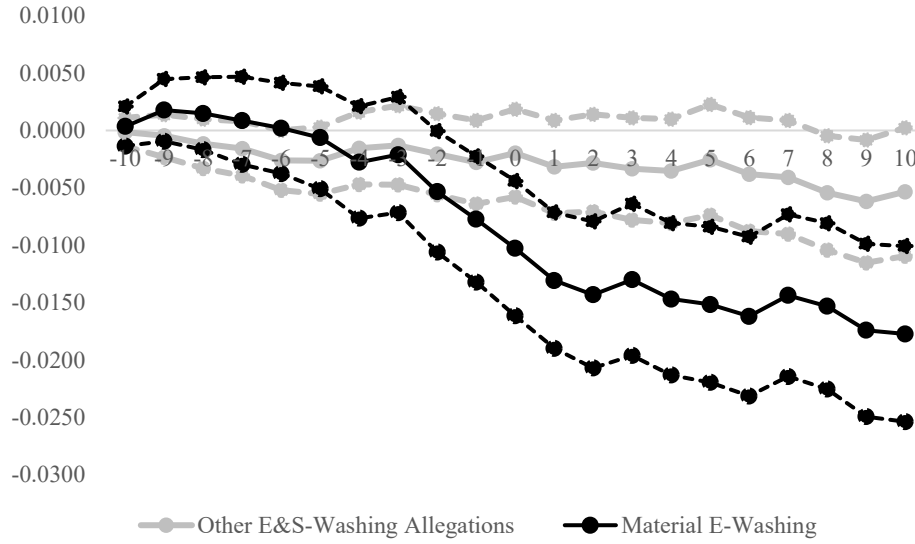
Figure 3. Information Source for E&S-Washing Allegations



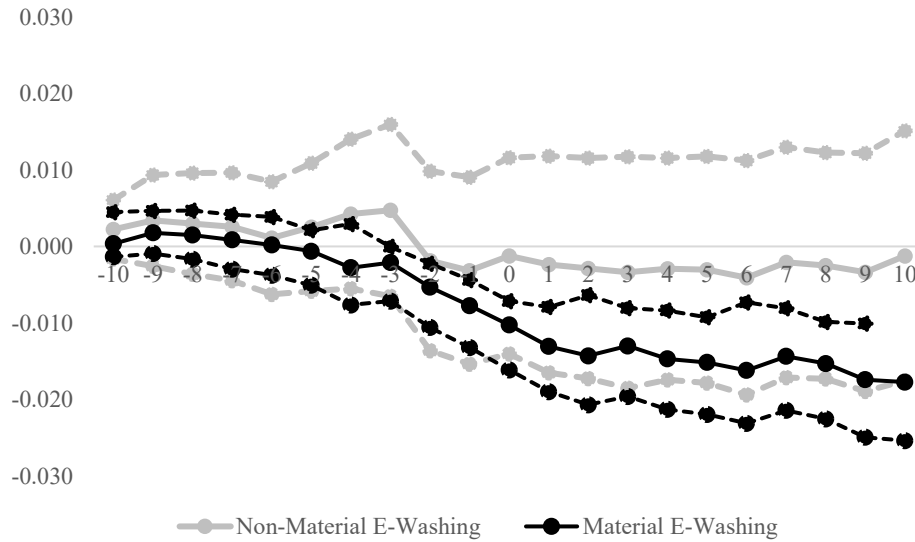
Notes. This figure presents the information sources of NGOs that could be identified for 41 E&S-washing campaigns by NGOs in the sample.

Figure 4. Abnormal Stock Returns around NGO Allegations

Panel A: Material E-Washing versus Other Allegations



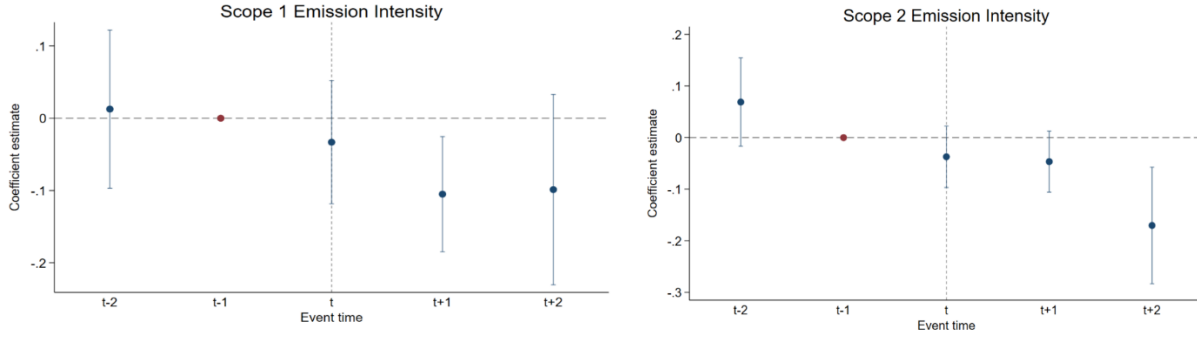
Panel B: Material E-Washing versus Non-Material E-Washing Allegations



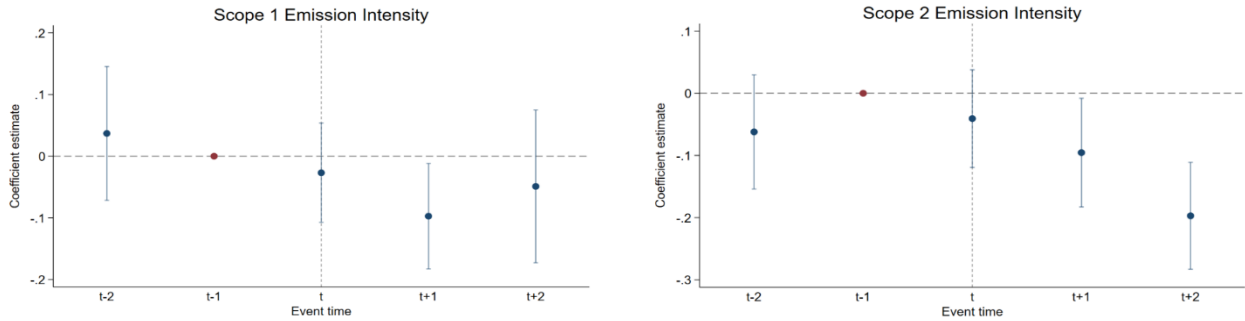
Notes. Panel A compares mean values of daily cumulative abnormal stock market returns for material E-washing allegations (black line) and all E&S-washing allegations (grey line). Panel B compares mean values of daily cumulative abnormal stock market returns for material E-washing allegations (black line) and non-material E-washing allegations (grey line). Stock market returns are calculated as the 21-day, buy-and-hold market-adjusted returns from ten days before to ten days after the first publication of an NGO allegation. Returns are calculated starting from day $t-10$. We use SASB's industry-specific materiality map to identify allegations that cover financially material topics. An E-washing allegation is material if an NGO alleges E-washing of a financially material topic. Around the mean estimates, we report bounds reflecting 95% confidence intervals. The sample in Panel A consists of 431 material E-washing campaigns and 690 other E&S-washing allegations between 2011 and 2022. The sample in Panel B consists of 431 material E-washing allegations and 128 non-material E-washing allegations between 2011 and 2022.

Figure 5. Dynamic Effects of Climate-Washing Allegations on Carbon Emissions

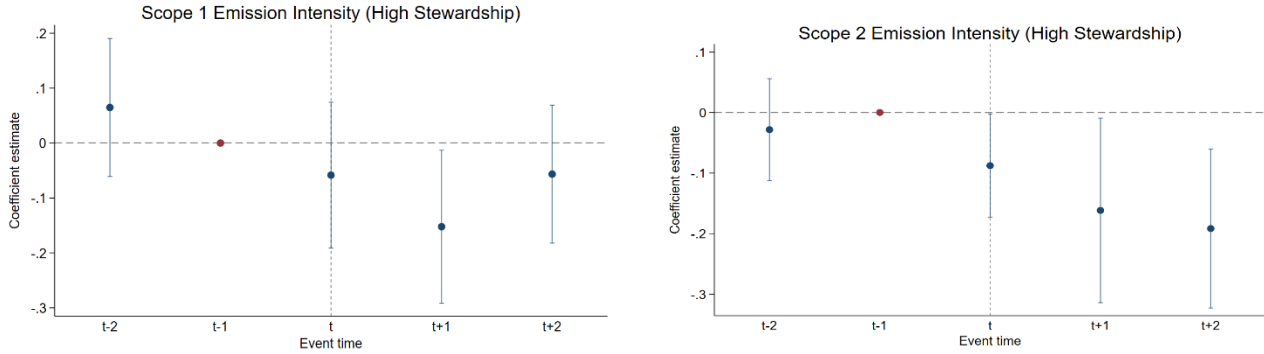
Panel A: Matched Sample



Panel B: Matched and High Data Quality Sample



Panel C: Matched and High Data Quality Sample with High Stewardship IO



Notes. This figure presents the results of dynamic stacked DiD regressions at the firm-year level examining carbon emission intensities around climate-washing allegations. We use the following dependent variables: *S1 Intensity* is a firm's Scope 1 emissions scaled by revenues. *S2 Intensity* is defined accordingly for Scope 2 emissions. We present in this figure regression coefficients, as well as 95% confidence intervals around the coefficients, for dynamic climate-washing treatment indicators. Panel A reports estimates for a propensity-score-matched sample, in which each treated firm facing a climate-washing allegation is matched to up to three control firms, based on size, industry, and carbon intensities (Scope 1, 2, and 3 upstream) one year before the allegation. Panel B reports estimates for the matched subsample with high-quality emissions data. Panel C reports estimates for the subsample with high-quality emissions data and for firms with high values of *Stewardship IO* (number of the firm's outstanding shares owned by institutional investors subject to stewardship codes in their home countries scaled by the firm's total number of outstanding shares held by institutional owners). The sample consists of climate-washing allegations between 2011 and 2022. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

Table 1. E&S-Washing Allegations by Firm and NGO

Panel A: E&S-Washing Allegations by Firm					
Firm	#	%	Firm	#	%
Nestlé	77	6.4	Engie	15	1.2
Coca Cola	70	5.8	Total Energies	14	1.2
Mondelez	48	4	Volkswagen	14	1.2
Danone	36	3	Samsung	13	1.1
Kellogg	34	2.8	Amazon	11	0.9
PepsiCo	33	2.7	Bayer	11	0.9
Exxon Mobil	30	2.5	L'Oréal	11	0.9
Chevron	28	2.3	Equinor	10	0.8
Procter & Gamble	26	2.2	H&M	10	0.8
BP	24	2	Tyson Foods	10	0.8
Ahold Delhaize	21	1.7	Others	590	48.7
Walmart	21	1.7	Total	1,211	100
General Mills	19	1.6			
McDonalds	19	1.6			
BNP Paribas	16	1.3			
Panel B: E&S-Washing Allegations by NGO					
NGO	#	%	NGO	#	%
Friends of the Earth	120	6.6	Amazon Watch	20	1.1
Greenpeace	93	5.1	Plastic Soup Foundation	20	1.1
Foodwatch	79	4.4	BEUC	19	1.1
Corporate Europe Observatory	54	3	Clean Clothes Campaign Int.	17	0.9
Verbraucherzentrale	49	2.7	Divest Invest Protect	16	0.9
Which?	49	2.7	Recycling Netzwerk	16	0.9
Center for Science in the Public Interest	44	2.4	Women's Earth and Climate Act. Net.	16	0.9
Union of Concerned Scientists	38	2.1	Ecologistas en Accion	14	0.8
Rainforest Action Network /RAN	37	2	Environmental Working Group	14	0.8
Observatoire des Multinationales	35	1.9	Proteste Brasil	14	0.8
Corporate Accountability International	34	1.9	DECO Proteste	12	0.7
Konsument.at	34	1.9	Consumentenbond	11	0.6
BankTrack	28	1.5	Organic Consumers Association	11	0.6
Resistance a l'Agression Publicite	28	1.5	ChemSec	10	0.6
Changing Markets Found.	25	1.4	Cornucopia Institute	10	0.6
Sierra Club U.S.A.	23	1.3	UFC Que Choisir	10	0.6
Stand.earth (ForestEthics)	23	1.3	Urgewald	10	0.6
350.org	21	1.2	Wakker Dier	10	0.6
Deutsche Umwelthilfe	21	1.2	Others	711	39.1
Transnational Institute	21	1.2	Total	1,817	100

Notes. Panel A presents the names of the firms that are targeted at least ten times by an E&S-washing allegation in our sample. Panel B provides the names of the NGOs that make at least ten E&S allegations in our sample. The total number of NGO involvement incidents in Panel B (1,817) is higher than the total number of NGO campaigns (1,211) because in 287 campaigns, two or more NGOs can be involved in/cooperate on the same campaign.

Table 2. E&S-Washing Allegations Overview

Panel A: E&S-Washing Allegations by E&S Topic				
	# E&S-Topics	% Total	# Fin. Material E&S Topics	% Total
<i>E-Washing Allegations</i>				
Climate	366	30.2	329	51.6
Waste	136	11.2	97	15.2
Biodiversity	41	3.4	10	1.6
Other Environment	53	4.4	25	3.9
<i>S-Washing Allegations</i>				
Consumer Health	267	22	100	15.7
Transparent Pricing	102	8.4	14	2.2
Other Product Quality	70	5.8	0	0
Other Consumer	66	5.5	5	0.8
Animal Welfare	50	4.1	36	5.6
Employee Rights, Health and Safety	43	3.6	16	2.5
Other Social	17	1.4	6	0.9
Total	1,211	100	638	100

Panel B: E&S-Washing Allegations by Obfuscation Style						
	# E&S-Washing	% Total	# E-Washing	% E-Washing	# S-Washing	% S-Washing
Style						
Misleading Claim	441	36.4	118	26.8	323	73.2
Talk vs Action	167	13.8	135	80.8	32	19.2
False Claim	163	13.5	76	46.6	87	53.4
False Solution	93	7.7	80	86	13	14
Information Hidden	87	7.2	0	0	87	100
Information Omitted	79	6.5	41	51.9	38	48.1
Other	181	15	146	80.7	35	19.3
Total	1,211	100	596	49.2	615	50.8

Panel C: E&S-Washing Allegations by Disclosure Outlet						
	# E&S-Washing	% Total	# E-Washing	% E-Washing	# S-Washing	% S-Washing
Disclosure Outlet						
Label or Packaging	273	25.3	33	12.1	240	87.9
Advertising	249	23.1	96	38.6	153	61.4
PR Campaign	143	13.3	110	76.9	33	23.1
Product Information	142	13.2	16	11.3	126	88.7
Environmental Commitment	91	8.4	91	100	0	0
Sponsorship	85	7.9	74	87.1	11	12.9
Certification	39	3.6	24	61.5	15	38.5
CSR Commitment	31	2.9	17	54.8	14	45.2
Corporate Website	10	0.9	4	40	6	60
Financial Report/Presentation	6	0.6	6	100	0	0
Sustainability Report	5	0.5	2	40	3	60
Impact Assessment	4	0.4	3	75	1	25
Total	1,078	100	476	44.2	602	55.8

Notes. Panel A presents NGO E&S-washing allegations, broken down by the E&S topics the allegations refer to and by financial materiality. Panel B presents E&S-washing allegations broken down by the obfuscation style through which the firm is E&S-washing. Panel C presents E&S-washing allegations broken down by the disclosure outlet in which the firm is E&S-washing. The unit of observation is an NGO allegation. In Panel C, the number of cases is less than the total number of E&S-washing allegations because information on the disclosure outlet is not always available. The sample consists of 1,211 NGO E&S-washing campaigns between 2011 and 2022.

Table 3. Determinants of E&S-Washing Allegations

	<i>E&S-Washing_{i,t}</i>				<i>E-Washing_{i,t}</i>		<i>S-Washing_{i,t}</i>		<i>Climate-Washing_{i,t}</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Oil & Gas_{i,t}</i>	0.029*				0.031**		0.000		0.028*	
	(2.12)				(2.27)		(0.01)		(2.16)	
<i>Consumer Goods_{i,t}</i>	0.036***				0.013***		0.029***		0.003	
	(4.18)				(3.48)		(3.76)		(1.39)	
<i>Consumer Services_{i,t}</i>	0.021				0.002		0.019		-0.002	
	(1.56)				(0.40)		(1.57)		(-1.25)	
<i>Ln(Assets)_{i,t-1}</i>	0.011***	0.013***	0.013***	0.006*	0.008***	0.009***	0.005***	0.006***	0.006***	0.006***
	(5.48)	(5.31)	(5.09)	(1.85)	(4.85)	(5.22)	(3.58)	(3.50)	(5.34)	(5.43)
<i>Tobin's Q_{i,t-1}</i>	0.004***	0.004***	0.004***	0.001	0.003***	0.003***	0.002**	0.001	0.002***	0.002***
	(3.91)	(3.90)	(3.50)	(0.57)	(3.89)	(4.07)	(2.32)	(1.77)	(6.67)	(6.90)
<i>Ln(1+News Articles)_{i,t-1}</i>	0.008***	0.008***	0.008***	-0.000	0.006***	0.006***	0.004***	0.003***	0.004***	0.004***
	(4.55)	(4.47)	(4.32)	(-0.28)	(4.11)	(4.04)	(3.69)	(3.55)	(3.51)	(3.45)
<i>Ln(1+SI Intensity)_{i,t-1}</i>									0.001**	0.001**
									(2.45)	(2.61)
<i>IO_{i,t-1}</i>	-0.044***	-0.038***	-0.040***	0.003	-0.023***	-0.021***	-0.029***	-0.024***	-0.015**	-0.015**
	(-4.97)	(-4.56)	(-4.65)	(0.31)	(-3.81)	(-3.30)	(-3.69)	(-3.55)	(-2.69)	(-2.70)
<i>Stewardship IO_{i,t-1}</i>	-0.015**	-0.013**	-0.013**	-0.003	-0.004	-0.003	-0.011***	-0.010***	-0.005	-0.005
	(-3.07)	(-2.77)	(-2.48)	(-0.31)	(-1.21)	(-0.94)	(-3.61)	(-3.33)	(-1.31)	(-1.31)
<i>ROA_{i,t-1}</i>	0.020	0.011	0.009	-0.042**	-0.009	-0.013	0.033**	0.028*	-0.019**	-0.017**
	(1.38)	(0.86)	(0.66)	(-2.66)	(-0.89)	(-1.42)	(2.49)	(2.16)	(-3.07)	(-2.69)
<i>E&S Comp_{i,t-1}</i>			0.012**	-0.001						
			(2.65)	(-0.39)						
<i>Constant</i>	-0.251***	-0.286***	-0.294***	-0.114	-0.181***	-0.202***	-0.105***	-0.128***	-0.144***	-0.145***
	(-5.00)	(-4.93)	(-4.65)	(-1.59)	(-4.53)	(-4.89)	(-3.27)	(-3.22)	(-5.34)	(-5.46)
Observations	37,274	37,274	34,708	33,646	37,274	37,274	37,274	37,274	35,623	35,623
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes
Firm FE	No	No	No	Yes	No	No	No	No	No	No
Adj. R ²	0.0703	0.0778	0.0816	0.2520	0.0466	0.0477	0.0455	0.0615	0.0385	0.0381

Notes. This table presents OLS regressions at the firm-year level examining the determinants of E&S-washing allegations. We use the following dependent variables: *E&S-Washing* (columns 1–4) equals 1 if firm *i* experiences an E&S-washing allegation in year *t*, and 0 otherwise. *E-Washing* (columns 5–6), *S-Washing* (columns 7–8), and *Climate-Washing* (columns 9–10) are defined analogously for the respective topic-specific allegations. The independent variables of interest are *Oil & Gas*, *Consumer Goods*, and *Consumer Services* (indicators that equal one if a firm operates in consumer goods, consumer services, or oil & gas, respectively, and 0 otherwise), as well as *Ln(Assets)*, *Tobin's Q*, *Ln(1+News Articles)*, and *Ln(SI Intensity)*, measuring a firm's size, equity valuation, media prominence, and Scope 1 emissions over revenues. The sample consists of an unbalanced panel of 6,671 firms between 2011 and 2022. *t*-statistics, in parentheses, are based on standard errors clustered by firm and year. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

Table 4. Stock Market Reaction to E&S-Washing Allegations

Panel A: Univariate Analysis of Stock Market Reaction							
	Mean	Std. Error	Obs.	<i>t</i> -value	<i>p</i> -value		
	-0.0034***	0.0009	1,121	-3.86	0.000		
Panel B: Regression Analyses	Stock Market Reaction _{<i>a,i,t</i>}						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Material E-Washing Allegation _{<i>a,i,t</i>}	-0.008*** (-3.60)		-0.007*** (-3.77)	-0.006** (-2.40)	-0.006** (-2.21)	-0.006** (-2.30)	
Material S-Washing Allegation _{<i>a,i,t</i>}	0.001 (0.28)		0.001 (0.29)	0.001 (0.18)	0.001 (0.21)	0.001 (0.21)	
Specialist NGO _{<i>a,i</i>}		-0.004** (-2.99)	-0.004*** (-3.14)		-0.004** (-2.59)	-0.004* (-2.15)	-0.004* (-2.19)
NGO Influence _{<i>a,i</i>}		-0.002 (-1.50)	-0.001 (-0.89)	-0.002 (-1.33)	-0.002 (-1.31)	-0.002 (-1.19)	-0.003 (-1.50)
IO _{<i>i,t-1</i>}				0.003 (0.41)	0.003 (0.48)	0.001 (0.13)	0.003 (0.54)
Stewardship IO _{<i>i,t-1</i>}				-0.017 (-1.51)	-0.018 (-1.56)	-0.017 (-1.43)	-0.015 (-1.31)
Ln(Assets) _{<i>i,t-1</i>}				0.001 (0.52)	0.001 (0.57)	0.000 (0.32)	-0.000 (-0.16)
Tobin 's Q _{<i>i,t-1</i>}				0.002 (1.05)	0.002 (1.07)	0.001 (0.59)	0.001 (0.45)
ROA _{<i>i,t-1</i>}				-0.005 (-0.15)	-0.004 (-0.12)	-0.003 (-0.08)	0.016 (0.45)
Ln(1+News Articles) _{<i>i,t-1</i>}				-0.000 (-0.50)	-0.001 (-0.62)	-0.000 (-0.39)	-0.000 (-0.08)
GRI Standards _{<i>i,t-1</i>}				-0.000 (-0.26)	-0.000 (-0.14)	0.000 (0.12)	0.001 (0.40)
Assurance _{<i>i,t-1</i>}				-0.002 (-0.71)	-0.002 (-0.68)	-0.002 (-0.55)	-0.001 (-0.45)
Allegation Sentiment _{<i>a,i,t</i>}				0.000 (0.08)	0.001 (0.15)	0.000 (0.02)	0.000 (0.13)
Piggybacking _{<i>a,i,t</i>}				0.002 (0.58)	0.001 (0.25)	0.001 (0.41)	0.001 (0.50)
Ln(E&S Disclosure Score) _{<i>i,t-1</i>}						0.001 (0.16)	0.001 (0.16)
Prior E&S Negative News _{<i>a,i,t</i>}						-0.001 (-0.85)	-0.001 (-0.85)
E&S Comp _{<i>i,t-1</i>}						-0.002 (-1.61)	-0.002 (-1.60)
Constant	-0.001 (-0.96)	0.001 (0.73)	0.002 (1.04)	-0.003 (-0.13)	-0.003 (-0.10)	0.004 (0.17)	0.011 (0.41)
Observations	1,117	1,117	1,117	1,080	1,080	1,046	1,044
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	No	Yes
Adj. R ²	0.0357	0.0287	0.0385	0.0325	0.0358	0.0262	0.0355

Notes. This table presents analyses examining the stock market reaction in the days around E&S-washing allegations. Panel A shows a test of whether the average stock market reaction is statistically different from 0 (calculated from the day before to the day after the first publication of the NGO allegation). Panel B provides OLS regressions at the allegation level examining the determinants of the stock market reaction. We use the following dependent variable: *Stock Market Reaction* is the 3-day, buy-and-hold market-adjusted returns from the day before to the day after the first publication of an NGO allegation. The independent variables of interest are *Material E-Washing Allegation* (equals 1 if an NGO alleges E-washing of a financially material topic, and 0 otherwise) and *Material S-Washing Allegation* (defined accordingly for S-washing). We omit industry fixed effects in columns 1–6 because these would be collinear with *Material E-Washing Allegation* and *Material S-Washing Allegation* as SASB's definition of financial materiality is based on industry membership. The sample consists of 1,121 E&S-washing allegations in Panel A and up to 1,117 E&S-washing allegations in Panel B (due to missing values) between 2011 and 2022. *t*-statistics, in parentheses, are based on standard errors clustered by firm and year. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

Table 5. Media News Reaction to E&S-Washing Allegations

Panel A: Univariate Analysis of Δ Negative E&S News						
	Mean	Std. Error	Obs.	<i>t</i> -value	<i>p</i> -value	
	0.0525**	0.0255	1,182	2.06	0.040	
Panel B: Regression Analyses	Δ E&S Negative News _{<i>a,i,t</i>}		Δ E Negative News _{<i>a,i,t</i>}		Δ S Negative News _{<i>a,i,t</i>}	
	(1)	(2)	(3)	(4)	(5)	(6)
Material E-Washing Allegation _{<i>a,i,t</i>}	0.287*** (3.13)	0.227*** (3.52)	0.238*** (3.72)	0.199*** (3.27)		
Material S-Washing Allegation _{<i>a,i,t</i>}	0.208* (2.10)	0.196** (2.22)			0.089 (0.92)	0.092 (1.05)
Specialist NGO _{<i>a,i</i>}	-0.086 (-1.66)	-0.091 (-1.56)	-0.073* (-2.00)	-0.076 (-1.73)	-0.045 (-1.13)	-0.054 (-1.36)
NGO Influence _{<i>a,i</i>}	0.031 (0.69)	0.026 (0.53)	-0.021 (-1.08)	-0.028 (-1.00)	0.045 (1.01)	0.026 (0.61)
Prior E&S Negative News _{<i>a,i,t</i>}	-0.754*** (-16.17)	-0.820*** (-17.60)				
Prior E Negative News _{<i>a,i,t</i>}			-0.705*** (-13.88)	-0.729*** (-13.59)		
Prior S Negative News _{<i>a,i,t</i>}					-0.828*** (-18.88)	-0.912*** (-22.92)
IO _{<i>i,t-1</i>}		-0.260 (-1.26)		-0.103 (-0.85)		-0.287 (-1.34)
Stewardship IO _{<i>i,t-1</i>}		-0.274 (-1.36)		-0.092 (-0.62)		-0.325** (-2.30)
Ln(Assets) _{<i>i,t-1</i>}		0.126*** (3.71)		0.052* (2.02)		0.116*** (4.56)
Tobin's Q _{<i>i,t-1</i>}		0.080 (1.35)		-0.008 (-0.35)		0.100* (1.99)
ROA _{<i>i,t-1</i>}		0.309 (0.38)		0.390 (0.79)		-0.223 (-0.33)
Ln(1+News Articles) _{<i>i,t-1</i>}		0.011 (0.52)		-0.007 (-0.42)		0.021 (1.29)
GRI Standards _{<i>i,t-1</i>}		-0.113 (-0.85)		-0.038 (-0.35)		-0.092 (-1.08)
Assurance _{<i>i,t-1</i>}		-0.022 (-0.48)		0.001 (0.02)		-0.047 (-0.84)
Allegation Sentiment _{<i>a,i,t</i>}		-0.096** (-2.32)		-0.112*** (-3.28)		-0.072 (-1.66)
Piggybacking _{<i>a,i,t</i>}		0.342 (1.31)		0.115 (0.89)		0.297 (1.11)
E&S Comp _{<i>i,t-1</i>}		0.009 (0.15)		0.028 (0.87)		-0.016 (-0.34)
Ln(E&S Disclosure Score) _{<i>i,t-1</i>}		0.068 (0.74)				
Ln(E Disclosure Score) _{<i>i,t-1</i>}				0.034 (0.46)		
Ln(S Disclosure Score) _{<i>i,t-1</i>}						0.122 (1.43)
Constant	0.169*** (3.20)	-3.164*** (-3.34)	0.152*** (4.66)	-1.297* (-1.97)	0.192** (2.89)	-3.023*** (-4.19)
Observations	1,179	1,121	1,179	1,121	1,179	1,121
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	No
Adj. R ²	0.333	0.365	0.342	0.350	0.321	0.363

Table 5 (continued)

Notes. This table presents analyses examining the media reaction in the days around E&S-washing allegations. Panel A shows a test of whether the average change in the number of negative E&S news articles in the three days around E&S-washing allegations is statistically different from 0 (calculated from three days before to three days after the publication of the NGO allegation). Panel B presents OLS regressions at the allegation level examining the determinants of media reaction. We use the following dependent variables: Δ *Negative E&S News* is the growth rate in the number of *negative* E and S news articles about a target from three days before to three days after an allegation. Δ *Negative E News* and Δ *Negative S News* are defined accordingly for E and S allegations. The independent variables of interest are *Material E-Washing Allegation* (equals 1 if an NGO alleges E-washing of a financially material topic, and 0 otherwise) and *Material S-Washing Allegation* (defined accordingly for S-washing). We omit industry fixed effects in columns 1–6 because these would be collinear with *Material E-Washing Allegation* and *Material S-Washing Allegation* (SASB’s definition of financial materiality is based on industry membership). The sample consists of 1,182 E&S-washing allegations in Panel A and up to 1,179 E&S-washing allegations in Panel B (due to missing values) between 2011 and 2022. *t*-statistics, in parentheses, are based on standard errors clustered by firm and year. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

Table 6. Climate-Washing Allegations and Carbon Emissions

	Matched Sample		Matched, High-Quality Emissions Data Sample					
					Stewardship IO High		Stewardship IO Low	
	<i>Ln(S1</i>	<i>Ln(S2</i>	<i>Ln(S1</i>	<i>Ln(S2</i>	<i>Ln(S1</i>	<i>Ln(S2</i>	<i>Ln(S1</i>	<i>Ln(S2</i>
	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}	<i>Intensity)</i> _{i,t}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Treat Climate</i> _i × <i>Post</i> _t	-0.094*	-0.098**	-0.076*	-0.113***	-0.100*	-0.126**	-0.062	-0.071
	(-1.93)	(-2.09)	(-1.75)	(-2.94)	(-1.99)	(-2.30)	(-0.84)	(-1.07)
<i>IO</i> _{i,t-1}	0.001	0.002	0.002	-0.006*	-0.001	-0.006	0.002	-0.002
	(0.16)	(0.41)	(0.60)	(-1.98)	(-0.23)	(-1.24)	(0.78)	(-0.53)
<i>Stewardship IO</i> _{i,t-1}	-0.024	-0.228	0.321**	0.063	-0.177	0.907	0.401*	0.319
	(-0.30)	(-1.09)	(2.51)	(0.39)	(-0.28)	(1.22)	(1.84)	(1.15)
<i>Ln(Assets)</i> _{i,t-1}	-0.012	-0.045	0.184	0.238**	-0.062	0.072	0.483**	0.364***
	(-0.13)	(-0.37)	(1.13)	(2.27)	(-0.35)	(0.40)	(2.69)	(3.51)
<i>Tobin's Q</i> _{i,t-1}	-0.161**	-0.068	-0.086	-0.083	-0.145	-0.023	-0.041	-0.045
	(-2.67)	(-1.19)	(-1.30)	(-1.34)	(-1.48)	(-0.30)	(-0.45)	(-0.47)
<i>ROA</i> _{i,t-1}	-0.461	0.084	-1.443***	-1.425**	-0.838	-1.655	-1.939***	-2.310***
	(-1.23)	(0.19)	(-3.53)	(-2.45)	(-1.12)	(-1.39)	(-3.91)	(-3.19)
<i>Ln(1+News Articles)</i> _{i,t-1}	-0.003	0.020	0.014	0.004	0.014	0.014	-0.020	0.005
	(-0.22)	(0.94)	(0.53)	(0.17)	(0.42)	(0.43)	(-0.46)	(0.17)
<i>Emission Target</i> _{i,t-1}	-0.003	-0.014	0.005	0.052	-0.218	0.076	0.131*	0.086
	(-0.07)	(-0.25)	(0.06)	(0.78)	(-1.20)	(0.87)	(1.69)	(0.99)
<i>Constant</i>	3.636	3.715	-1.956	-3.144	4.473	0.098	-8.909*	-6.462**
	(1.58)	(1.19)	(-0.48)	(-1.19)	(1.05)	(0.02)	(-1.92)	(-2.44)
Observations	2,122	2,122	1,549	1,549	753	754	738	737
Year × Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm × Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emission Data Quality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.984	0.911	0.986	0.932	0.981	0.930	0.992	0.934
# Treated Firms	119	119	97	97	52	52	53	53
# Control Firms	217	217	159	159	109	109	83	83

Notes. This table presents stacked DiD regressions at the firm-year level examining carbon emission intensities around climate-washing allegations. We use the following dependent variables: *S1 Intensity* is a firm's Scope 1 emissions scaled by revenues. *S2 Intensity* is defined accordingly for Scope 2 emissions. The independent variables of interest are *Treat Climate* (equals 1 for firms targeted by climate-washing allegations, and 0 otherwise) and *Post* (equals 1 in the climate-allegation year and the subsequent two years, and 0 otherwise). Columns 1–2 report estimates for a propensity-score-matched sample, in which each treated firm facing a climate-washing allegation is matched to up to three control firms, based on size, industry, and carbon intensities (Scope 1, 2, and 3 upstream) one year before the allegation. Columns 3–4 report estimates for the matched subsample with high-quality emissions data. Columns 5–8 report estimates for the subsample with high-quality emissions data using a sample split into firm-years with high- and low-stewardship ownership based on lagged values of *Stewardship IO* (number of the firm's outstanding shares owned by institutional investors subject to stewardship codes in their home countries scaled by the firm's total number of outstanding shares held by institutional owners). The sum of treated and control firms across the high- and low-stewardship ownership samples is larger than in columns 3 or 4, as for some firms, the values of *Stewardship IO* are below the median in some years and above the median in others. Cohorts refer to calendar-time-specific treatment cohorts. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. Firms that never experience climate-washing allegations during the sample period serve as the control group. The sample consists of climate-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). *t*-statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

Table 7. E&S Allegations and Other Firm Outcomes

	<i>Ln(Hazardous Waste)_{i,t}</i>	<i>Waste Reduction Initiative_{i,t}</i>	<i>Biodiversity Impact Reduction_{i,t}</i>	<i>Consumer Health Policy_{i,t}</i>	<i>Fair Competition Policy_{i,t}</i>
	(1)	(2)	(3)	(4)	(5)
<i>Treat Waste_i × Post_t</i>	-0.246 (-1.52)	0.033* (1.79)			
<i>Treat Biodiversity_i × Post_t</i>			0.080** (2.02)		
<i>Treat Consumer Health_i × Post_t</i>				0.028 (1.35)	
<i>Treat Transparent Pricing_i × Post_t</i>					0.049** (2.26)
<i>IO_{i,t-1}</i>	-0.006 (-0.49)	-0.001 (-1.41)	0.003** (2.27)	0.000 (0.27)	-0.002 (-0.64)
<i>Stewardship IO_{i,t-1}</i>	-0.089 (-0.18)	0.071 (1.65)	0.201 (1.31)	0.066 (1.05)	-0.001 (-0.01)
<i>Ln(Assets)_{i,t-1}</i>	-0.049 (-0.08)	0.067 (1.41)	0.290*** (3.35)	0.047 (0.79)	0.075 (1.38)
<i>Tobin's Q_{i,t-1}</i>	-0.018 (-0.14)	0.020 (1.34)	0.061 (1.59)	0.027 (1.42)	0.081** (2.03)
<i>ROA_{i,t-1}</i>	0.787 (0.62)	0.007 (0.05)	-0.393 (-1.07)	-0.131 (-0.85)	-0.874* (-1.76)
<i>Ln(1+News Articles)_{i,t-1}</i>	-0.140 (-0.92)	0.005 (0.58)	0.031** (2.34)	0.003 (0.38)	0.013 (1.29)
<i>Constant</i>	12.697 (0.87)	-0.714 (-0.60)	-6.762*** (-3.15)	-0.280 (-0.19)	-1.133 (-0.81)
Observations	509	1,183	530	829	717
Year × Cohort FE	Yes	Yes	Yes	Yes	Yes
Firm × Cohort FE	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.877	0.449	0.832	0.716	0.844
# Treated Firms	27	61	29	43	38
# Control Firms	71	142	67	82	77

Notes. This table presents firm-year-level stacked DiD regressions examining E&S outcomes around various E&S-washing allegations. We use the following dependent variables: *Hazardous Waste* (amount of hazardous waste), *Waste Reduction Initiative* (equals 1 if a firm reports on waste reduction, and 0 otherwise), *Biodiversity Impact Reduction* (equals 1 if a firm reports on biodiversity impact reduction, and 0 otherwise), *Consumer Health Policy* (equals 1 if a firm has a policy to protect customer health and safety, and 0 otherwise), and *Fair Competition Policy* (equals 1 if a firm discloses that it strives to be a fair competitor, and 0 otherwise). The independent variables of interest are, depending on the outcome variable, *Treat Waste* (equals 1 for firms targeted by waste-related allegations, and 0 otherwise), as well as *Treat Biodiversity*, *Treat Consumer Health*, and *Treat Transparent Pricing* (defined accordingly for the respective allegation topics), and *Post* (equals 1 in the specific allegation year and the subsequent two years, and 0 otherwise). We report estimates for a propensity-score-matched sample, in which each treated firm facing a specific allegation is matched to up to three control firms, based on size, industry, and the relevant outcome variable one year before the allegation. Cohorts refer to calendar-time-specific treatment cohorts. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. Firms that never experience E&S-washing allegations during the sample period serve as the control group. The sample consists of various topic-specific E&S-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). *t*-statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

Table 8. E&S Allegations and Shareholder Proposals

	$\ln(1+\# E$ $Proposals)_{i,t}$	$\ln(1+\# S$ $Proposals)_{i,t}$
	(1)	(2)
<i>Treat E&S-Washing_i × Post_t</i>	0.068*** (3.84)	0.072*** (4.03)
<i>IO_{i,t-1}</i>	0.000 (0.06)	0.000 (0.21)
<i>Stewardship IO_{i,t-1}</i>	-0.164*** (-4.04)	-0.160** (-3.28)
<i>Ln(Assets)_{i,t-1}</i>	0.062* (2.34)	0.064* (2.31)
<i>Tobin's Q_{i,t-1}</i>	0.001 (0.03)	0.010 (0.46)
<i>ROA_{i,t-1}</i>	-0.171 (-1.47)	-0.158 (-1.13)
<i>Ln(1+News Articles)_{i,t-1}</i>	-0.012 (-1.62)	-0.011 (-1.47)
<i>Emission Target_{i,t-1}</i>	-0.025 (-1.45)	-0.025 (-1.43)
<i>Constant</i>	-1.183 (-1.79)	-1.244 (-1.81)
Observations	3,945	3,945
Year × Cohort FE	Yes	Yes
Firm × Cohort FE	Yes	Yes
Adj. R ²	0.596	0.607
# Treated Firms	230	258
# Control Firms	414	511

Notes. This table presents stacked DiD regressions at the firm-year level examining E&S shareholder proposals around E&S-washing allegations. We use the following dependent variables: E-Proposals is the number of environment-related shareholder proposals and S-Proposals is defined accordingly for social proposals. The independent variables of interest are *Treat E&S-Washing* (equals 1 for firms targeted by E&S-washing allegations, and 0 otherwise) and *Post* (equals 1 in the E&S-allegation year and the subsequent two years, and 0 otherwise). We report estimates for a propensity-score-matched sample, in which each treated firm facing an E&S-washing allegation is matched to up to three control firms, based on size, industry, and the relevant outcome variable one year before the allegation. Cohorts refer to calendar-time-specific treatment cohorts. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. Firms that never experience E&S-washing allegations during the sample period serve as the control group. The sample consists of E&S-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). *t*-statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at 10%, 5%, and 1%, respectively.

Internet Appendix

for

The Value of NGO Activism

IA Table 1. Allegation Level Summary Statistics

	Mean	SD	P25	Median	P75	Obs.
<i>Stock Market Reaction</i> _{a,i,t}	0.00	0.03	-0.02	0.00	0.01	1,121
Δ <i>Negative E&S News</i> _{a,i,t}	0.05	0.88	0.00	0.00	0.00	1,182
Δ <i>Negative E News</i> _{a,i,t}	0.01	0.66	0.00	0.00	0.00	1,182
Δ <i>Negative S News</i> _{a,i,t}	0.05	0.75	0.00	0.00	0.00	1,182
<i>Material E-Washing Allegation</i> _{a,i,t}	0.38	0.49	0.00	0.00	1.00	1,211
<i>Material S-Washing Allegation</i> _{a,i,t}	0.15	0.35	0.00	0.00	0.00	1,211
<i>Stewardship IO</i> _{i,t-1}	0.56	0.34	0.18	0.60	0.92	1,199
<i>IO</i> _{i,t-1}	0.50	0.23	0.30	0.51	0.70	1,209
<i>Assets</i> _{i,t-1} (in \$ millions)	162,890	232,620	31,459	79,804	176,280	1,211
<i>Tobin's Q</i> _{i,t-1}	1.58	1.21	0.72	1.29	2.11	1,210
<i>ROA</i> _{i,t-1}	0.09	0.07	0.04	0.09	0.12	1,211
<i>News Articles</i> _{i,t-1}	646.86	695.42	148.00	384.00	826.00	1,211
<i>GRI Standards</i> _{i,t-1}	0.81	0.40	1.00	1.00	1.00	1,179
<i>Assurance</i> _{i,t-1}	0.85	0.36	1.00	1.00	1.00	1,188
<i>E&S Disclosure Score</i> _{i,t}	39.26	12.44	30.61	39.86	47.68	1,189
<i>E Disclosure Score</i> _{i,t}	44.47	16.46	34.73	43.25	57.14	1,189
<i>S Disclosure Score</i> _{i,t}	34.05	12.08	24.97	33.71	43.08	1,189
<i>NGO Influence</i> _{a,i,t}	1.36	0.57	1.00	1.00	1.50	1,211
<i>Specialty NGO</i> _{a,i,t}	0.44	0.50	0.00	0.00	1.00	1,211
<i>Allegation Sentiment</i> _{a,i,t}	-1.64	0.48	-2.00	-2.00	-1.00	1,211
<i>Piggybacking</i> _{a,i,t}	0.01	0.09	0.00	0.00	0.00	1,211
<i>Prior Negative E&S News</i> _{a,i,t}	0.35	0.69	0.00	0.00	0.00	1,182
<i>Prior Negative E News</i> _{a,i,t}	0.24	0.57	0.00	0.00	0.00	1,182
<i>Prior Negative S News</i> _{a,i,t}	0.23	0.53	0.00	0.00	0.00	1,182
<i>E&S Comp</i> _{i,t-1}	0.68	0.47	0.00	1.00	1.00	1,207

Notes. This table provides summary statistics at the firm-year level. The sample consists of 1,211 E&S-washing allegations between 2011 and 2022. Variables are defined in Appendix A.

IA Table 2. Determinants of E&S-Washing Allegation Intensities

	<i>E&S-Washing Intensity_{i,t}</i>				<i>E-Washing Intensity_{i,t}</i>		<i>S-Washing Intensity_{i,t}</i>		<i>Climate-Washing Intensity_{i,t}</i>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Oil & Gas_{i,t}</i>	0.0030 (1.57)				0.0033 (1.77)		-0.0003 (-1.62)		0.0017 (1.33)	
<i>Consumer Goods_{i,t}</i>	0.0052*** (3.71)				0.0014** (2.25)		0.0038** (3.10)		-0.0001 (-1.05)	
<i>Consumer Services_{i,t}</i>	0.0039 (1.59)				0.0001 (0.11)		0.0038* (1.90)		-0.0004 (-0.88)	
<i>Ln(Assets)_{i,t-1}</i>	0.0004** (2.96)	0.0004** (3.09)	0.0004** (2.59)	0.0002 (0.27)	0.0002 (1.69)	0.0002* (1.86)	0.0002** (2.77)	0.0002** (2.55)	0.0003*** (3.52)	0.0002** (2.99)
<i>Tobin's Q_{i,t-1}</i>	0.0004*** (3.17)	0.0003** (2.73)	0.0004** (2.86)	0.0003 (0.56)	0.0002** (3.05)	0.0002** (3.06)	0.0002 (1.66)	0.0001 (1.12)	0.0001** (2.55)	0.0002** (2.65)
<i>Ln(1+News Articles)_{i,t-1}</i>	0.0006*** (3.21)	0.0006*** (3.78)	0.0007*** (4.18)	0.0002 (0.77)	0.0004*** (3.36)	0.0004*** (3.60)	0.0002 (1.74)	0.0002* (2.08)	0.0002 (1.73)	0.0002* (1.82)
<i>Ln(1+Scope 1 Intensity)_{i,t-1}</i>										0.0001** (1.58)
<i>IO_{i,t-1}</i>	-0.0007 (-0.60)	0.0002 (0.14)	-0.0001 (-0.05)	0.0029 (0.87)	0.0011 (1.29)	0.0013 (1.72)	-0.0018** (-2.31)	-0.0011 (-1.50)	0.0008 (0.83)	0.0009 (0.88)
<i>Stewardship IO_{i,t-1}</i>	-0.0020** (-2.31)	-0.0020** (-2.50)	-0.0021** (-2.40)	-0.0028 (-1.30)	-0.0005 (-0.86)	-0.0006 (-1.10)	-0.0014** (-2.72)	-0.0013** (-2.60)	-0.0006 (-0.97)	-0.0008 (-1.43)
<i>ROA_{i,t-1}</i>	-0.0072* (-2.10)	-0.0073** (-2.27)	-0.0080** (-2.32)	-0.0194** (-2.78)	-0.0060* (-2.18)	-0.0057* (-2.17)	-0.0011 (-0.48)	-0.0016 (-0.76)	-0.0041** (-2.30)	-0.0032** (-2.38)
<i>E&S Comp_{i,t-1}</i>			0.0006 (1.16)	-0.0006 (-1.02)						
<i>Constant</i>	-0.0087** (-2.95)	-0.0084** (-2.85)	-0.0079** (-2.49)	-0.0023 (-0.11)	-0.0049* (-1.98)	-0.0048* (-2.11)	-0.0038* (-2.19)	-0.0036* (-1.83)	-0.0063*** (-3.59)	-0.0053** (-2.88)
Observations	37,249	37,249	34,685	33,622	37,249	37,249	37,249	37,249	35,611	35,611
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes
Firm FE	No	No	No	Yes	No	No	No	No	No	No
Adj. R ²	0.007	0.011	0.011	0.074	0.003	0.003	0.012	0.019	0.003	0.003

Notes. This table presents OLS regressions at the firm-year level examining the determinants of the intensity of E&S-washing allegations. We use the following dependent variables: *E&S-Washing Intensity* (column 1–4) is the number of E&S-washing allegations in a year scaled by sales of firm *i* in year *t*, and 0 otherwise. *E-Washing Intensity* (column 5–6), *S-Washing Intensity* (columns 7–8), and *Climate-Washing Intensity* (columns 9–10) are defined analogously for the respective topic-specific allegations. The independent variables of interest are *Oil & Gas*, *Consumer Goods*, and *Consumer Services* (indicators that equal one if a firm operates in consumer goods, consumer services, or oil & gas, respectively, and 0 otherwise), as well as *Ln(Assets)*, *Tobin's Q*, *Ln(1+News Articles)*, and *Ln(Scope 1 Intensity)*, measuring a firm's size, equity valuation, media prominence, and Scope 1 emissions over revenues. The sample consists of an unbalanced panel of 6,666 firms between 2011 and 2022. *t*-statistics, in parentheses, are based on standard errors clustered by firm and year. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

IA Table 3. Stock Market Reaction to E&S-Washing Allegations: Excluding Overlapping Allegations

	<i>Stock Market Reaction_{a,i,t}</i>						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Material E-Washing Allegation_{a,i,t}</i>	-0.008*** (-3.89)		-0.007*** (-4.13)	-0.006** (-2.67)	-0.006** (-2.50)	-0.006** (-2.57)	
<i>Material S-Washing Allegation_{a,i,t}</i>	0.001 (0.33)		0.001 (0.34)	0.001 (0.22)	0.001 (0.25)	0.001 (0.22)	
<i>Specialist NGO_{a,i}</i>		-0.004** (-3.01)	-0.004*** (-3.27)		-0.004** (-2.60)	-0.004* (-2.15)	-0.004* (-2.13)
<i>NGO Influence_{a,i}</i>		-0.002 (-1.48)	-0.001 (-0.86)	-0.002 (-1.25)	-0.002 (-1.24)	-0.002 (-1.12)	-0.003 (-1.43)
<i>IO_{i,t-1}</i>				0.002 (0.29)	0.002 (0.36)	-0.000 (-0.02)	0.003 (0.45)
<i>Stewardship IO_{i,t-1}</i>				-0.016 (-1.30)	-0.017 (-1.35)	-0.015 (-1.18)	-0.014 (-1.10)
<i>Ln(Assets)_{i,t-1}</i>				0.000 (0.38)	0.000 (0.45)	0.000 (0.22)	-0.000 (-0.16)
<i>Tobin's Q_{i,t-1}</i>				0.002 (1.00)	0.002 (1.05)	0.001 (0.64)	0.001 (0.50)
<i>ROA_{i,t-1}</i>				-0.010 (-0.28)	-0.009 (-0.27)	-0.010 (-0.25)	0.011 (0.28)
<i>Ln(1+News Articles)_{i,t-1}</i>				-0.000 (-0.51)	-0.001 (-0.64)	-0.000 (-0.40)	-0.000 (-0.14)
<i>GRI Standards_{i,t-1}</i>				-0.000 (-0.25)	-0.000 (-0.13)	0.000 (0.12)	0.001 (0.43)
<i>Assurance_{i,t-1}</i>				-0.002 (-0.73)	-0.002 (-0.70)	-0.002 (-0.64)	-0.002 (-0.53)
<i>Allegation Sentiment_{a,i,t}</i>				0.000 (0.11)	0.001 (0.17)	0.000 (0.09)	0.001 (0.20)
<i>Piggybacking_{a,i,t}</i>				0.002 (0.64)	0.001 (0.35)	0.002 (0.53)	0.002 (0.57)
<i>Ln(E&S Disclosure Score)_{i,t-1}</i>						0.001 (0.21)	0.001 (0.15)
<i>Prior E&S Negative News_{a,i,t}</i>						-0.001 (-1.01)	-0.002 (-1.07)
<i>E&S Comp_{i,t-1}</i>						-0.002 (-1.48)	-0.002 (-1.59)
<i>Constant</i>	-0.001 (-1.00)	0.001 (0.65)	0.002 (1.01)	0.002 (0.11)	0.003 (0.12)	0.007 (0.30)	0.012 (0.44)
Observations	1,077	1,077	1,077	1,040	1,040	1,008	1,006
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	No	Yes
Adj. R ²	0.0351	0.0267	0.0377	0.0294	0.0325	0.025	0.0339

Notes. This table presents analyses examining the stock market reaction in the days around E&S-washing allegations after excluding allegations that are close to each other (within ten days). Panel A shows a test of whether the average stock market reaction is statistically different from 0 (calculated from the day before to the day after the first publication of the NGO allegation). Panel B provides OLS regressions at the allegation level examining the determinants of the stock market reaction. We use the following dependent variable: *Stock Market Reaction* is the 3-day, buy-and-hold market-adjusted returns from the day before to the day after the first publication of an NGO allegation. The independent variables of interest are *Material E-Washing Allegation* (equals 1 if an NGO alleges E-washing of a financially material topic, and 0 otherwise) and *Material S-Washing Allegation* (defined accordingly for S-washing). We omit industry fixed effects in columns 1–6 because these would be collinear with *Material E-Washing Allegation* and *Material S-Washing Allegation*, as SASB's definition of financial materiality is based on industry membership. The sample consists of up to 1,077 E&S-washing allegations. *t*-statistics, in parentheses, are based on standard errors clustered by firm and year. Variables are defined in Appendix A. *, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

IA Table 4. Operating Performance Response to E&S-Washing Allegations

	E Allegations		S Allegations	
	<i>ROA_{i,t}</i>	<i>Sales/Assets_{i,t}</i>	<i>ROA_{i,t}</i>	<i>Sales/Assets_{i,t}</i>
	(1)	(2)	(3)	(4)
<i>Treat E-Washing_i × Post_t</i>	-0.005** (-2.43)	-0.012* (-1.88)		
<i>Treat S-Washing_i × Post_t</i>			-0.004 (-1.56)	-0.035** (-2.19)
<i>IO_{i,t-1}</i>	-0.000 (-0.10)	-0.000 (-0.47)	-0.000 (-0.56)	0.000 (0.26)
<i>Stewardship IO_{i,t-1}</i>	0.005 (0.71)	-0.041 (-1.37)	0.010 (1.40)	0.027 (0.61)
<i>Ln(Assets)_{i,t-1}</i>	-0.048*** (-5.60)	-0.070*** (-3.15)	-0.046*** (-7.77)	-0.079 (-1.42)
<i>Tobin's Q_{i,t-1}</i>	0.027*** (6.77)	0.026** (2.01)	0.017*** (5.75)	-0.010 (-0.39)
<i>ROA_{i,t-1}</i>	0.310*** (5.96)	0.561*** (4.28)	0.336*** (8.02)	0.331** (2.08)
<i>Ln(1+News Articles)_{i,t-1}</i>	-0.000 (-0.46)	-0.009** (-2.38)	-0.001 (-1.23)	-0.005 (-0.88)
<i>Constant</i>	1.129*** (5.66)	2.248*** (4.35)	1.160*** (7.98)	2.773** (2.02)
Observations	3,312	3,312	2,014	2,014
R-squared	0.876	0.973	0.923	0.970
Year × Cohort FE	Yes	Yes	Yes	Yes
Firm × Cohort FE	Yes	Yes	Yes	Yes
Adj. R ²	0.844	0.966	0.900	0.962
# Treated Firms	190	190	104	104
# Control Firms	311	311	197	197

Notes. This table presents stacked DiD regressions at the firm-year level examining operating performance around E&S-washing allegations. We use the following dependent variables: *ROA* (EBIT over sales) and *Sales/Assets* (Sales over assets). The independent variables of interest are *Treat E-Washing* (equals 1 for firms targeted by E-washing allegations, and 0 otherwise), and *Treat S-Washing* (defined accordingly). We report estimates for a propensity-score-matched sample, in which each treated firm facing an E&S-washing allegation is matched to up to three control firms, based on size, industry, and one year before the allegation. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. The control group consists of firms matched to treated firms in the same year and industry. The sample consists of E&S-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). *t*-statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

IA Table 5. Media Reaction to E&S-Washing Allegations: Excluding Overlapping Allegations

	$\Delta E\&S\ Negative\ News_{a,i,t}$		$\Delta E\ Negative\ News_{a,i,t}$		$\Delta S\ Negative\ News_{a,i,t}$	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Material E-Washing Allegation</i> _{a,i,t}	0.255** (2.66)	0.197** (2.78)	0.205*** (3.29)	0.160** (2.72)		
<i>Material S-Washing Allegation</i> _{a,i,t}	0.229** (2.37)	0.223** (2.76)			0.109 (1.16)	0.114 (1.38)
<i>Specialist NGO</i> _{a,i}	-0.079 (-1.27)	-0.092 (-1.34)	-0.070 (-1.61)	-0.076 (-1.47)	-0.039 (-0.86)	-0.053 (-1.14)
<i>NGO Influence</i> _{a,i}	0.060 (1.39)	0.054 (1.04)	-0.001 (-0.06)	-0.007 (-0.21)	0.075* (1.87)	0.057 (1.35)
<i>Prior E&S Negative News</i> _{a,i,t}	-0.782*** (-13.38)	-0.842*** (-13.94)				
<i>Prior E Negative News</i> _{a,i,t}			-0.736*** (-11.45)	-0.759*** (-11.24)		
<i>Prior S Negative News</i> _{a,i,t}					-0.821*** (-18.50)	-0.897*** (-20.42)
<i>IO</i> _{i,t-1}		-0.213 (-1.15)		-0.079 (-0.76)		-0.232 (-1.05)
<i>Stewardship IO</i> _{i,t-1}		-0.267 (-1.29)		-0.071 (-0.47)		-0.330** (-2.37)
<i>Ln(Assets)</i> _{i,t-1}		0.129*** (4.07)		0.055** (2.35)		0.113*** (4.89)
<i>Tobin's Q</i> _{i,t-1}		0.068 (1.11)		-0.011 (-0.38)		0.085 (1.68)
<i>ROA</i> _{i,t-1}		0.656 (0.81)		0.472 (0.95)		0.125 (0.19)
<i>Ln(1+News Articles)</i> _{i,t-1}		0.009 (0.45)		-0.007 (-0.47)		0.015 (0.95)
<i>GRI Standards</i> _{i,t-1}		-0.098 (-0.75)		-0.035 (-0.34)		-0.083 (-1.03)
<i>Assurance</i> _{i,t-1}		0.002 (0.04)		0.017 (0.35)		-0.028 (-0.46)
<i>Allegation Sentiment</i> _{a,i,t}		-0.095* (-2.12)		-0.113*** (-3.24)		-0.075 (-1.48)
<i>Piggybacking</i> _{a,i,t}		0.335 (1.25)		0.124 (0.95)		0.294 (1.08)
<i>E&S Comp</i> _{i,t-1}		-0.002 (-0.04)		0.026 (0.68)		-0.027 (-0.55)
<i>Ln(E&S Disclosure Score)</i> _{i,t-1}		0.020 (0.22)				
<i>Ln(E Disclosure Score)</i> _{i,t-1}				0.017 (0.25)		
<i>Ln(S Disclosure Score)</i> _{i,t-1}						0.089 (0.97)
<i>Constant</i>	0.119** (2.70)	-3.168*** (-3.46)	0.124*** (3.74)	-1.389** (-2.21)	0.127** (2.43)	-2.912*** (-4.17)
Observations	1,091	1,038	1,091	1,038	1,091	1,038
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	No
Adj. R ²	0.334	0.366	0.344	0.353	0.312	0.349

IA Table 5 (continued)

Notes. This table presents analyses examining the media reaction in the days around E&S-washing allegations after excluding allegations that are close to each other (within ten days). Panel A shows a test of whether the average change in the number of negative E&S news articles in the three days around E&S-washing allegations is statistically different from 0 (calculated from three days before to three days after the publication of the NGO allegation). Panel B presents OLS regressions at the allegation level examining the determinants of media reaction. We use the following dependent variables: Δ *Negative E&S News* is the growth rate in the number of *negative* E and S news articles about a target from three days before to three days after an allegation. Δ *Negative E News* and Δ *Negative S News* are defined accordingly for E and S allegations. The independent variables of interest are *Material E-Washing Allegation* (equals 1 if an NGO alleges E-washing of a financially material topic, and 0 otherwise) and *Material S-Washing Allegation* (defined accordingly for S-washing). We omit industry fixed effects in columns 1–6 because these would be collinear with *Material E-Washing Allegation* and *Material S-Washing Allegation* (SASB’s definition of financial materiality is based on industry membership). The sample consists of up to 1,091 E&S-washing allegations. *t*-statistics, in parentheses, are based on standard errors clustered by firm and year. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

IA Table 6. Summary Statistics for Outcome Variables in the DiD Analysis

	Mean	SD	P25	Median	P75	Obs.
$\ln(S1 \text{ Intensity})_{i,t}$	3.15	2.96	0.5	2.64	5.67	2,122
$\ln(S2 \text{ Intensity})_{i,t}$	2.54	1.49	1.64	2.50	3.53	2,122
$\ln(S3 \text{ Intensity})_{i,t}$	4.62	1.07	3.36	4.78	5.54	2,122
$\ln(\text{Hazardous Waste})_{i,t}$	10.56	3.00	8.54	10.69	12.51	509
$\text{Waste Reduction Initiative}_{i,t}$	0.97	0.17	1.00	1.00	1.00	1,183
$\text{Biodiversity Impact Reduction}_{i,t}$	0.67	0.47	0.00	1.00	1.00	530
$\text{Consumer Health Policy}_{i,t}$	0.93	0.25	1.00	1.00	1.00	829
$\text{Fair Competition Policy}_{i,t}$	0.77	0.42	1.00	1.00	1.00	717
$\ln(1 + \# E \text{ Proposals})_{i,t}$	0.18	0.33	0.00	0.00	0.00	3,945
$\ln(1 + \# S \text{ Proposals})_{i,t}$	0.19	0.35	0.00	0.00	0.00	3,945
$\text{Stewardship IO}_{i,t}$	0.59	0.32	0.28	0.66	0.90	3,971

Notes. This table provides summary statistics at the firm-year level for the outcome variables used in the stacked DiD sample. The sample consists of treatment firms with NGO allegations and matched control firms. Variables are defined in Appendix A.

IA Table 7. Climate-Washing Allegations and Scope 3 Carbon Emissions

	Matched Sample	Matched, High-Quality Emissions Data Sample
	$\ln(S3\ Up\ Intensity)_{i,t}$	$\ln(S3\ Up\ Intensity)_{i,t}$
	(1)	(2)
$Treat\ Climate\ Change_i \times Post_t$	0.019 (1.44)	0.014 (0.93)
$IO_{i,t-1}$	0.001 (0.93)	-0.001 (-1.24)
$Stewardship\ IO_{i,t-1}$	0.167** (2.02)	0.174* (1.75)
$\ln(Assets)_{i,t-1}$	0.029 (0.86)	0.036 (0.60)
$Tobin's\ Q_{i,t-1}$	0.005 (0.19)	0.013 (0.44)
$ROA_{i,t-1}$	-0.482*** (-2.79)	-0.311* (-1.73)
$\ln(1+News\ Articles)_{i,t-1}$	-0.005 (-0.81)	-0.005 (-0.57)
$Emission\ Target_{i,t-1}$	-0.001 (-0.10)	0.012 (0.58)
<i>Constant</i>	3.802*** (4.26)	3.585** (2.27)
Observations	2,122	1,549
Year $\times$ Cohort FE	Yes	Yes
Firm $\times$ Cohort FE	Yes	Yes
Emission Data Quality FE	Yes	Yes
Adj. R ²	0.985	0.986
# Treated Firms	119	97
# Control Firms	217	159

Notes. This table presents stacked DiD regressions at the firm-year level examining Scope 3 carbon emission intensities around climate-washing allegations. We use the following dependent variable: $S3\ Up\ Intensity$ is a firm's Scope 3 upstream emissions scaled by revenues. The independent variables of interest are $Treat\ Climate$ (equals 1 for firms targeted by climate-washing allegations, and 0 otherwise) and $Post$ (equals 1 in the climate-allegation year and the subsequent two years, and 0 otherwise). We report estimates for a propensity-score-matched sample, in which each treated firm facing a climate-washing allegation is matched to up to three control firms, based on size, industry, and carbon intensities (Scope 1, 2, and 3 upstream). Cohorts refer to calendar-time-specific treatment cohorts. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. Firms that never experience climate-washing allegations during the sample period serve as the control group. The sample consists of climate-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). t -statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

IA Table 8. Characteristics of Treatment and Control Firms before Treatment

Panel A: Balance before Treatment (Matched Sample)					
	Obs.		Means		<i>p</i> -value
	Control	Treated	Control	Treated	(two-tailed)
Matching Variables					
$\ln(Assets)_{i,t}$	333	119	25.26	25.47	19%
$\ln(S1\ Intensity)_{i,t}$	333	119	3.23	3.04	55%
$\ln(S2\ Intensity)_{i,t}$	333	119	2.58	2.61	85%
$\ln(S3Up\ Intensity)_{i,t}$	333	119	0.06	0.09	89%
Other Variables					
$IO_{i,t}$	333	119	36.56	43.81	1%
Stewardship $IO_{i,t}$	333	119	0.57	0.61	27%
Tobin's $Q_{i,t}$	333	119	0.81	0.92	19%
$ROA_{i,t}$	333	119	0.06	0.05	93%
$\ln(1+News\ Articles)_{i,t}$	333	119	4.62	5.68	0%
Emission Target $_{i,t}$	333	119	0.69	0.90	0%
Panel B: Balance before Treatment (Matched, High Emissions Data Quality Sample)					
	Obs.		Means		<i>p</i> -value
	Control	Treated	Control	Treated	(two-tailed)
Matching Variables					
$\ln(Assets)_{i,t}$	242	97	25.24	25.50	16%
$\ln(S1\ Intensity)_{i,t}$	242	97	3.00	2.91	79%
$\ln(S2\ Intensity)_{i,t}$	242	97	2.62	2.70	68%
$\ln(S3Up\ Intensity)_{i,t}$	242	97	4.62	4.59	81%
Other Variables					
$IO_{i,t}$	242	97	40.71	44.03	25%
Stewardship $IO_{i,t}$	242	97	0.65	0.64	30%
Tobin's $Q_{i,t}$	242	97	0.80	0.96	8%
$ROA_{i,t}$	242	97	0.06	0.06	58%
$\ln(1+News\ Articles)_{i,t}$	242	97	4.85	5.67	0%
Emission Target $_{i,t}$	242	97	0.83	0.93	2%

Notes. This table evaluates whether key pre-allegation characteristics are balanced between treated and control firms. We report characteristics for a sample of propensity-score-matched firms, in which each treated firm facing a climate-washing allegation is matched to up to three control firms, based on size, industry, and carbon intensities (Scope 1, 2, and 3 upstream) one year before the allegation. The sample consists of climate-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table).

IA Table 9. Climate-Washing Allegations: Robustness Checks and Alternative Interpretations

	High-Quality Emissions Data Sample					
	Full Sample, No PSM		Only Firms without Asset Reductions		Accounting for Decarbonization Program	
	$Ln(S1 Intensity)_{i,t}$	$Ln(S2 Intensity)_{i,t}$	$Ln(S1 Intensity)_{i,t}$	$Ln(S2 Intensity)_{i,t}$	$Ln(S1 Intensity)_{i,t}$	$Ln(S2 Intensity)_{i,t}$
	(1)	(2)	(3)	(4)	(5)	(6)
$Treat Climate Change_i \times Post_t$	-0.102*** (-2.76)	-0.095** (-2.12)	-0.117** (-2.01)	-0.119** (-2.10)		
$Treat Climate Change^{Unconfounded}_i \times Post_t$					-0.083* (-1.74)	-0.083** (-2.01)
$Treat Climate Change^{Confounded}_i \times Post_t$					-0.036 (-0.46)	-0.271*** (-3.56)
$IO_{i,t-1}$	0.001 (1.34)	-0.000 (-0.12)	0.005 (1.06)	-0.007 (-1.42)	0.002 (0.55)	-0.006* (-1.98)
$Stewardship IO_{i,t-1}$	-0.117*** (-2.97)	-0.005 (-0.08)	0.433* (1.73)	0.078 (0.32)	0.317** (2.48)	0.064 (0.40)
$Ln(Assets)_{i,t-1}$	-0.145*** (-4.42)	-0.136*** (-3.25)	0.306 (1.21)	0.419** (2.23)	0.182 (1.12)	0.244** (2.34)
$Tobin's Q_{i,t-1}$	-0.049*** (-4.98)	-0.030*** (-2.78)	-0.128 (-1.61)	-0.064 (-0.82)	-0.086 (-1.30)	-0.082 (-1.32)
$ROA_{i,t-1}$	-1.230*** (-6.38)	-1.378*** (-7.60)	-1.486*** (-3.12)	-1.798* (-1.92)	-1.429*** (-3.55)	-1.467** (-2.57)
$Ln(1+News Articles)_{i,t-1}$	0.002 (0.37)	0.011* (1.68)	-0.012 (-0.36)	0.041 (1.19)	0.013 (0.52)	0.005 (0.22)
$Emission Target_{i,t-1}$	0.005 (0.28)	-0.017 (-0.82)	0.090 (1.50)	0.087 (1.08)	0.006 (0.06)	0.049 (0.74)
<i>Constant</i>	5.565*** (7.11)	5.670*** (5.88)	-5.068 (-0.81)	-7.831 (-1.65)	0.002 (0.55)	-0.006* (-1.98)
Observations	73,299	73,299	897	898	1,549	1,549
Year $\times$ Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm $\times$ Cohort FE	Yes	Yes	Yes	Yes	Yes	Yes
Emission Data Quality FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.973	0.942	0.990	0.933	0.986	0.932
# Treated Firms	97	97	76	75	97	97
# Control Firms	2,626	2,626	140	141	159	159

Notes. This table presents stacked DiD regressions at the firm-year level examining carbon emission intensities around climate-washing allegations. We use the following dependent variables: *S1 Intensity* is a firm's Scope 1 emissions scaled by revenues. *S2 Intensity* is defined accordingly for Scope 2 emissions. The independent variables of interest are *Treat Climate* (equals 1 for firms targeted by climate-washing allegations, and 0 otherwise) and *Post* (equals 1 in the climate-allegation year and the subsequent two years, and 0 otherwise). Unless reported differently, we report estimates for a propensity-score-matched sample, in which each treated firm facing a climate-washing allegation is matched to up to three control firms, based on size, industry, and carbon intensities (Scope 1, 2, and 3 upstream) one year before the allegation. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. Firms that never experience climate-washing allegations during the sample period serve as the control group. All columns report estimates for subsample with high-quality carbon emissions data. The sample consists of climate-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). In columns 1–2, we do not apply propensity score matching. In columns 3–4, we consider only the subsample of firms where assets did *not* decline from year $t-1$ to year t . In columns 5–6, we split treatment into two subgroups: firms where treatment was likely not confounded by the launch of decarbonization/net-zero program and those where it potentially was. We consider the treatment to be possibly confounded if the program launch is in the allegation year. t -statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

IA Table 10. E&S-Washing Allegations and Exit by Stewardship Ownership Investors

	<i>Stewardship IO_{i,t}</i>		
	(1)	(2)	(3)
<i>Treat E&S Washing_i × Post_t</i>	0.009 (0.98)		
<i>Treat E-Washing_i × Post_t</i>		0.011 (1.65)	
<i>Treat S-Washing_i × Post_t</i>			-0.003 (-0.34)
<i>IO_{i,t-1}</i>	-0.007 (-0.24)	0.013 (0.26)	-0.031 (-0.52)
<i>Stewardship IO_{i,t-1}</i>	0.371** (3.34)	0.340** (3.10)	0.373** (3.29)
<i>Ln(Assets)_{i,t-1}</i>	0.011 (0.51)	0.009 (0.44)	0.002 (0.10)
<i>Tobin's Q_{i,t-1}</i>	-0.005 (-0.65)	0.006 (0.66)	-0.010 (-1.31)
<i>ROA_{i,t-1}</i>	0.103 (1.37)	0.014 (0.16)	0.128 (1.71)
<i>Ln(1+News Articles)_{i,t-1}</i>	-0.003 (-1.17)	-0.003 (-1.22)	-0.003 (-0.82)
<i>Constant</i>	0.144 (0.28)	0.219 (0.43)	0.310 (0.55)
Observations	3,971	3,314	1,900
Year × Cohort FE	Yes	Yes	Yes
Firm × Cohort FE	Yes	Yes	Yes
Adj. R ²	0.947	0.944	0.947
# Treated Firms	267	211	127
# Control Firms	463	401	229

Notes. This table presents stacked DiD regressions at the firm-year level examining stewardship ownership around E&S-washing allegations. We use the following dependent variables: *Stewardship IO* is the number of the firm's outstanding shares owned by institutional investors subject to stewardship codes in their home countries, scaled by the firm's total number of outstanding shares held by institutional owners in the year of the allegation, *t*. The independent variables of interest are *Treat E&S-Washing* (equals 1 for firms targeted by E&S-washing allegations, and 0 otherwise), *Treat E-Washing* (defined accordingly), *Treat S-Washing* (defined accordingly), and *Post* (equals 1 in the two years after the allegation year, and 0 otherwise). We report estimates for a propensity-score-matched sample, in which each treated firm facing an E&S-washing allegation is matched to up to three control firms, based on size, industry, and *Stewardship IO* one year before the allegation. Each treatment cohort includes observations from allegation targets from two years before the allegation year through two years after the allegation, including the allegation year itself. The control group consists of firms matched to treated firms in the same year and industry. The sample consists of E&S-washing allegations between 2011 and 2022 (we list the number of treated and control firms in the table). *t*-statistics, in parentheses, are based on standard errors clustered at the year-cohort level. Variables are defined in Appendix A.

*, **, *** indicate statistical significance at the 10, 5, 1% level, respectively.

About ECGI

ECGI is an international non-profit membership organisation that provides a platform for debate and dialogue among academics, policymakers, and business leaders, with a focus on major corporate governance, ESG, and stewardship issues.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

ECGI Working Paper Series in Finance

Editorial Board

Editor

Nadya Malenko, Professor of Finance, Boston College

Consulting Editors

Renée Adams, Professor of Finance, University of Oxford

Franklin Allen, Professor of Finance and Economics, Imperial London

Julian Franks, Professor of Finance, London Business School

Mireia Giné, Professor of Finance, IESE Business School

Marco Pagano, Professor of Economics, Facoltà di Economia Università di Napoli
Federico II

Series Manager

Asif Malik, ECGI Working Paper Series Manager

<https://www.ecgi.global/publications/working-papers>