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## The Value of NGOs in ESG

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We examine whether and how NGOs create value in the ESG space. Our laboratory are NGO allegations about misleading or false corporate E&S claims. NGO campaigns target large, visible firms in the consumer-facing or oil and gas industry. The campaigns predominantly aim at corporate statements on how firms impact climate change, consumer health, or waste. Stocks react with negative announcement returns to NGO campaigns, especially when the alleged behavior concerns financially-material topics; negative media reporting also rises. NGO campaigns have real effects: Firms criticized for climate-related claims reduce future carbon emissions, in part because the campaigns catalyze investor engagement.

Key words: NGOs; ESG; Sustainability; E&S-Washing; Carbon Emissions

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With ESG 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 ESG policies and firm valuations (Starks 2023). Relative to this body of evidence, our understanding of the role and effects of activism by Nongovernmental Organizations (NGOs) on ESG topics remains limited.

This dearth of evidence is surprising. In a global survey among sustainability experts, NGOs emerge as the single greatest contributors to sustainable development over the past decades, ahead of financial institutions, institutional investors, or governments (GlobeScan 2019). In the same survey, most experts cite stakeholder engagement and collaboration as the key drivers of NGO leadership. Moreover, financial market regulators in Europe use NGO reports as an information source to detect corporate greenwashing (ESMA 2024). There is also anecdotal evidence that NGO activism materially impacts firms by uncovering scandals and generating public pressure, thereby damaging corporate reputations and prompting changes in business practices. In 2021, the NGO Friends of the Earth won a lawsuit against Royal Dutch Shell, ordering the oil firm to reduce its CO<sub>2</sub> emissions by 45%. In 2023, Climate Action Germany engaged TotalEnergies over misleading claims related to “climate-neutral” heating oil; the oil firm subsequently adjusted its advertising.<sup>1</sup>

While it is unclear whether these pieces of evidence are representative, it appears important to provide a systematic analysis of the role of NGOs in ESG, shedding light on what they aim to achieve, whether their actions have financial implications, and whether they trigger changes in real firm 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 related to

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<sup>1</sup> 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).

environmental and social (E&S) topics (“E&S-washing”).<sup>2</sup> We use E&S-washing as an umbrella term to include misrepresentation of corporate E&S risks, practices, and impacts that has the goal of making them appear more favorable than they are.

Our focus on E&S-washing allegations has multiple motivations. First, investors, employees, and customers increasingly consider firms’ E&S characteristics when making investing, employment, or purchasing decisions (e.g., Balakrishnan et al. 2011, Hartzmark and Sussman 2019, Beyer et al. 2024, Meier et al. 2024); these decisions may be ill-informed if firms misrepresent their E&S qualities. Second, regulators, standard setters, and assurance providers only recently started to undertake actions aimed at detecting E&S-washing, which has left a regulatory vacuum for multiple years (SEC 2021, ESMA 2022, GRI 2022, or IAASB 2023). Third, unlike most regulators or assurance providers, NGOs have tracked firms’ ESG practices for a long time, having accumulated significant resources in scrutinizing E&S claims. For example, NGOs exposed Volkswagen’s fraudulent emissions reporting, ExxonMobil’s climate disinformation campaign, and Nestlé’s misleading claims about the health benefits of its baby milk.

Identifying corporate E&S-washing poses challenges for NGOs and researchers alike, given the myriad of sustainability claims that firms make across various communication channels. In this paper, we do *not* aim to verify whether the E&S-washing allegations—as made public by the NGOs—are justified; instead, we focus on the determinants and impacts of these allegations.<sup>3</sup> Our

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<sup>2</sup> 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). To the contrary, service NGOs address needs that are not fully met by the market or the government (e.g., counselling, food, shelter, or medical treatment). Service NGOs typically do not campaign against firms and do not appear in our analysis.

<sup>3</sup> To assess whether some accusations were false, we examined each allegation by hand—using web searchers, litigation databases, and contacts at NGOs—to identify cases where NGOs have been found wrong or were sued. We identified only one such 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.

analysis builds on novel data covering 1,212 E&S-washing allegations made by 329 NGOs against 287 publicly listed firms from 24 countries between 2011 and 2022.

In our first set of analyses, we provide a comprehensive anatomy of NGOs' allegations. More than 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% of all allegations), consumer health benefits (22%), and waste handling (11%). Forty-one allegations are over the emerging topic of biodiversity. Overall, about 41% of all allegations cover E&S-washing of business activities targeted at consumers. This number is important to document as the switch by consumers from less to more sustainable products is a critical market mechanism through which firms are incentivized to improve ESG quality (Bénabou and Tirole 2010); if consumers act on misrepresented information, this mechanism may not work.

According to the NGOs, firms misinform the public most frequently through misleading or outright false statements and actions that contradict previously made promises, such as financing a new coal-fired power plant after a net-zero pledge. The channels that NGOs most often identify as the source of the E&S-washing include product labels, advertising material, and public relations (PR) campaigns. Only 1% of all allegations refer to sustainability or financial reports.

NGOs are more likely to target firms that are visible to investors and the public, that is, firms that are larger, have higher valuations, exhibit greater press coverage, and are consumer-facing. They more frequently target firms whose environmental impact is salient, such as oil and gas companies (and high carbon emitters in general). This target selection could reflect NGOs' incentives to maximize public attention to their campaigns and that highly visible firms—and those with the largest E&S impacts—have stronger E&S-washing incentives (consistent with the latter motive, NGOs tend to target firms whose executive pay is tied to ESG metrics).

In the second set of analyses, we examine whether, and when, the NGO campaigns lead to stock market reactions. In these tests, we document negative abnormal returns to E&S-washing

allegations, which are particularly pronounced if NGOs allege the E&S-washing of financially-material issues.<sup>4</sup> Stock returns decline by a market-adjusted 34bp over the three-day window centered around the announcement of an E&S-washing allegation. This return reaction is 50bp more negative for financially-material allegations. The valuation declines may reflect investor concerns over future reputational and legal costs or that regulators take actions based on the allegations.<sup>5</sup> The market reactions are meaningful. They compare, for example, to market-adjusted returns of -1.58% around press releases indicating that firms were charged over violations of environmental regulations (Karpoff et al. 2005). NGO characteristics significantly affect the return response: we identify more negative returns for allegations by NGOs that are more influential, as reflected in greater geographic reach and more international operations. Consistent with the financial market reactions, we document an increase in *negative* media coverage after the allegations; these effects are also stronger if the allegations are over financially-material themes.

In the last set of analyses, we examine the corporate response to E&S-washing allegations. As a starting point, we consider the corporate press responses. It emerges that firms react to E&S-washing allegations in only 10% of the cases, consistent with a PR strategy to ignore allegations in public to not raise attention further. When firms respond, then conceding responses are less likely for accusations over material E&S dimensions. Finally, firms are more likely to issue a press response, and respond in a conceding way, if the accusing NGO is more influential.

We then turn to firms' operational responses, which are more challenging to examine as they require identifying actions related to the source of the allegations (e.g., it is hard to identify actions when claims are over animal welfare). We can conduct such an exercise when firms are criticized

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<sup>4</sup> Financially material are those E&S issues that likely affect future revenues, costs, or risk according to the industry-specific materiality map by the Sustainability Accounting Standards Board (Serafeim and Yoon 2022).

<sup>5</sup> 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 launching.

for E&S-washing their impacts on climate change (“climate-washing”). To this end, we examine whether firms reduce their carbon emissions after climate-washing allegations, potentially to better align their real activities with sustainability claims. Our estimates suggest that NGO campaigns have real corporate effects: carbon emissions decline by 5 to 7%, depending on the specification, after firms face climate-washing allegations (relative to firms without allegations).<sup>6</sup>

The corporate response we identify may arise—at least partially—because NGOs catalyze engagement by institutional investors. Climate-washing allegations may thereby trigger engagement action by institutional investors, stemming both from a direct investor response to the allegations and, more indirectly, from NGOs pressuring investors to address the allegations with their portfolio firms.<sup>7</sup> Consistent with this notion, we document that emission reductions are much stronger among firms with high ownership by climate-conscious institutions. Following Ilhan et al. (2023), we consider as climate-conscious those investors who are subject to stewardship codes in their home countries. Stewardship codes promote corporate sustainability, and institutions subject to them have been shown to exhibit more climate-related engagement (Ilhan et al. 2023).<sup>8</sup> While emission are unchanged after climate-washing allegations when stewardship ownership is low (at 10%), they decline by between 6 and 8% when stewardship ownership is high (at 90%).

Further corroborating the presence of a catalyst role by NGOs, we find that the negative return response to E&S-washing allegations is amplified among firms with high stewardship ownership. While the return reaction is insignificant at 10% stewardship ownership, it amounts to between -0.9 and -1% at 90% levels. Hence, some climate-sensitive institutions sell their shares in response

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<sup>6</sup> This response arises independently of whether the allegations are financially material.

<sup>7</sup> In 2022, over 100 NGOs have launched the “Vanguard SOS” campaign, which pressures asset managers to support climate action for investments in fossil fuels and related industries. NGOs and investor groups may also collaborate to engage firms (Reid and Toffel 2009).

<sup>8</sup> Our result also aligns with other work documenting the role of stewardship codes in promoting sustainability-related actions by institutional investors. 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 ESG performance of portfolio firms.

to the accusations. Overall, the evidence implies that the catalyst effects of NGO campaigns materialize along the “voice” (engagement) as well as “exit” (divestment) dimension.

We contribute to the literature on the forces that shape firms’ E&S practices and outcomes. Several 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 (e.g., Dyck et al. 2019), carbon emissions (Azar et al. 2021), or climate-related disclosures (e.g., Ilhan et al. 2023, Cohen et al. 2023). Our study adds to this work by proposing NGO campaigns as a source of information and catalyst for investor engagement.

We also contribute to the nascent but growing E&S-washing literature, which focuses mostly on a specific disclosure medium and examines a particular type of greenwashing. Hail et al. (2021), Chava et al. (2021), and Dzieliński et al. (2022) examine greenwashing in earnings calls. Marquis et al. (2016) and Grewal et al. (2023) show that firms selectively disclose smaller negative E impacts while omitting larger ones. Other studies focus on the S component by finding, for example, that U.S. firms use their diversity commitments opportunistically or incorrectly (Baker et al 2024, Bailey et al. 2024). Raghunandan and Rajgopal (2022) show that signatories of the Business Roundtable’s “Statement on the Purpose of a Corporation” do not engage in stakeholder-centric practices. We differ from this literature by providing—from the perspective of NGOs—an anatomy of the specific dimensions that firms E&S-wash, the disclosure outlets in which E&S-washing occurs, and the presentation or obfuscation styles through which firms E&S-wash. These details can rarely be illustrated in prior research given the settings and methodologies used.

Finally, we contribute to the literature on NGO activism. Using case studies, Doh and Guay (2006) find that NGOs can pressure firms to adopt more socially responsible practices by expressing societal views, shaping public policy, and directly targeting and pressuring firms through advocacy and activism. Dyreng et al. (2016) show that a campaign by ActionAid pressured FTSE 100 firms to comply with a tax rule requiring disclosure of subsidiary locations. We

contribute to this work by providing direct and detailed evidence in a large international sample on the anatomy of NGO campaigns and how they affect financial and real outcomes.

## **1. Hypotheses development**

### **1.1 Determinants of NGO E&S-washing allegation**

An NGO's decision to engage a firm over E&S-washing concerns depends on a variety of factors. A typical prerequisite is that some information emerges about potential wrongdoing from public sources, consumers, or whistleblowers. Additionally, NGOs may rely on laboratory tests of firms' products or undercover operations at corporate sites. Target selection might also be influenced by economic incentives because an NGO's reputation and visibility are essential for attracting financial donations and labor. How much attention a campaign raises depends on the visibility of the target, which should increase in firm size, market value, and media coverage. Visibility should also be greater if a target serves end customers (Servaes and Tamayo 2013) or operates in an industry with greater and more salient E&S impacts, such as oil and gas (Desai et al. 2023).<sup>9</sup> The most visible firms and those with the most adverse E&S impacts may also have the strongest incentives to E&S-wash. This leads to the following prediction:

*H1: NGOs are more likely to target visible firms.*

### **1.2 Stock market response to NGO E&S-washing allegations**

To the extent that NGO scrutiny of E&S claims is effective, financial markets should react to the allegations. Investor responses likely depend on the potential impact of the allegation on a

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<sup>9</sup> By targeting firms with large and visible E&S impacts, NGOs may direct their limited resources to areas where they can facilitate the largest societal benefits. NGO criticism of large firms' E&S claims may also incentivize smaller peers to improve their own practices (Rowley and Berman 2000).



firm's financial prospects and reputation. If the allegations shape the perceptions of customers or employees, future cash flows may be impaired, leading to a lower valuation. In addition, E&S-washing allegations can trigger regulatory actions or lawsuits that reduce cash flows and increase uncertainty.<sup>10</sup> This leads to the following prediction:

*H2a: The stock market reacts negatively to NGO E&S-washing allegations.*

NGO campaigns are likely more impactful if they address issues that are financially material to the target, that is, issues that significantly affect revenues, costs, or risk. Because they usually link to a firm's core activities, allegations related to financially-material issues should have a greater impact on the perceptions and actions of key stakeholders (e.g., customers and employees):

*H2b: The stock market decline after NGO E&S-washing allegations is stronger for financially-material allegations.*

Not all NGOs are equally influential with their campaigns. For example, the geographical reach, degree of international operations, and breadth of coalitions vary across NGOs. These dimensions of NGO influence should affect the success of NGO campaigns and, by anticipation, the stock market reaction. Indeed, research finds that geographical distance, national borders, or legal and language barriers contribute to the success of NGO campaigns (Hatte and Koenig 2020):

*H2c: The stock market decline after NGO E&S-washing allegations is stronger for allegations by influential NGOs.*

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<sup>10</sup> 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.

### **1.3 Media response to NGO E&S-washing allegations**

Reactions by the media, especially negative ones, are also important for the question of whether NGO scrutiny of E&S claims is effective. Media coverage can provide credibility to NGO allegations, and the media can help disseminate allegations. Media coverage of NGOs has also increased strongly (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). NGOs also constitute a news source for the media (Fenton 2009). Hence, we predict:

*H3a: The news media react negatively to NGO E&S-washing allegations.*

As with stock price reactions, NGO campaigns are likely to create more negative news if they allege misrepresentation of E&S issues that are financially material:

*H3b: The negative news media reaction to NGO E&S-washing allegations is stronger for financially-material allegations.*

NGO influence should not only affect return reactions but also how the media responds:

*H3c: The negative news media reaction to NGO E&S-washing allegations is stronger for allegations by influential NGOs.*

### **1.4 Corporate responses to NGO E&S-washing allegations**

The question of whether NGO scrutiny of E&S claims creates value also calls for an examination of corporate reactions. Targets may reply in a conceding or confrontational manner. Concessions may involve promises to eliminate E&S-washing or actions to improve E&S practices, especially when the allegations cover financially-material issues and are from influential

NGOs. Alternatively, targets may ignore the allegations altogether, to avoid attracting attention or signaling that the allegation is important (Brendel and Ryans 2021, Wu and Liu 2023).<sup>11</sup>

One form of corporate response is through a press release. Firms likely face greater pressure to respond if the allegation involves financially-material issues as investors and other stakeholders consider them as more fundamental. Additionally, an allegation will likely attract broader attention if it originates from an influential NGO, thereby further compelling firms to address them in a press release (if these determinants make a *concessionary* response more likely is unclear).

*H4a: The corporate press response to NGO E&S-washing allegations is stronger for financially-material allegations.*

*H4b: The corporate press response to NGO E&S-washing allegations is stronger for allegations by influential NGOs.*

A further response is that targets change their real operations to better align their business activities with the E&S claims. Examining real responses in our setting 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 still obtain insights into the real effects of NGO activism, we exploit that more than 350 allegations are over climate-washing. Such allegations relate to misleading or false claims over corporate actions concerning climate change, for example, emission pathways that are clearly inconsistent with carbon pledges. Focusing on such climate-washing allegations, we test whether carbon emissions decline after NGO allegations:

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<sup>11</sup> An example for a response was when in 2011 Greenpeace accused Adidas of E&S-washing regarding its commitment to detox the supply chain. The NGO claimed that Adidas failed to provide people with details about the uses and discharges of hazardous chemicals to the environment (at the facility-year level). Additionally, Greenpeace criticized the firm for committing to phasing out only one type of PFC by 2015. Adidas responded directly by acknowledging some of the concerns raised by Greenpeace. However, it disagreed with other claims and emphasized that it had been working for years to reduce and gradually eliminate hazardous chemicals from the supply chain.

*H5: Carbon emissions decline after climate-washing allegations by NGOs.*

### **1.5 Interplay between NGOs and institutional investors**

Institutional investors and NGOs may engage in intricate relationships, with NGOs advocating for responsible corporate practices and investors responding with “exit” or “voice” to the stated allegations. As institutional investors vary with their background and incentives, we expect that any corporate response is more likely when a firm’s shareholders have stronger E&S preferences. Following Ilhan et al. (2023), we measure such preferences by considering institutional investors that are subject to stewardship codes; such codes are designed to enhance corporate sustainability, and institutional investors bound by them should be more attentive to E&S issues at portfolio firms.

In terms of exit, a prediction is that investors subject to stewardship codes are more likely to divest from firms accused of E&S washing (e.g., as their E&S screens signal a selling decision):

*H6a: The stock market reaction to NGO E&S-washing allegations is stronger at firms with higher institutional ownership subject to stewardship codes.*

In terms of voice, those stewardship owners who remain invested (e.g., for indexing reasons) may leverage their influence to demand operational changes. To examine this possibility, we consider whether climate-washing allegations trigger second-round effects by institutional investors, whereby the NGO campaigns catalyze engagement by institutional investors. This effect can arise directly, whereby the attention over climate-washing triggers engagement action, or indirectly, with NGOs pressuring some investors to address climate-washing with their portfolio firms. NGOs and investor groups may also collaborate to engage firms. Hence, we predict:

*H6b: Carbon emissions decline more strongly after climate-washing allegations in firms with higher institutional ownership subject to stewardship codes.*

## 2. Data

### 2.1 NGO data

We obtain data on NGOs' E&S-washing allegations from SigWatch, a data analytics firm specialized in monitoring and analyzing NGO activism campaigns. SigWatch has built a unique dataset that covers about 11,000 activist groups worldwide in over 75,000 campaigns involving over 20,000 target firms since 2011. The data are sourced from a variety of public sources, including NGO websites, their press releases, and research reports. For each NGO campaign, the information that SigWatch provides includes characteristics of the NGO and the target firm, a summary of the allegations, and web links to the source documents. Clients of SigWatch include institutional investors interested in assessing their (or their portfolio firms') reputation risks related to NGO campaigns, but also audit and consulting firms, the OECD, and academics.<sup>12</sup>

We focus on NGO campaigns that allege E&S-washing, which we define as situations where—according to an NGO—a corporate statement or claim portrays a firm's E&S risk, practice, or impact more favorably than it is. To identify such allegations, we search the SigWatch database and read the reported information about the nature of all NGO campaigns. We then classify each identified E&S campaign according to the issue that is arguably E&S-washed.

To construct our sample, we require that the target firms of the campaigns are publicly listed, publish sustainability reports according to the Corporate Register database, and have nonmissing data on control variables in Worldscope. This provides us with 1,212 unique E&S-washing allegations against 287 firms between 2011 and 2022. Figure 1 plots the number of allegations over time. An interesting feature is that E-washing allegations strongly increased since 2018, whereas S-washing allegations declined.<sup>13</sup> Figure 2 reveals that 46% of the allegations target firms

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<sup>12</sup> Koenig (2017) provides a detailed description of the SigWatch data.

<sup>13</sup> The spike in 2015 is related to the firms' responses to the signing of the Paris Agreement and revelations that oil and gas companies knew about climate change much earlier than they admitted.

in the U.S., followed by France (12%), the UK (8%), Switzerland (7.5%), and Germany (5%). (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 include Nestlé (77 allegations or 6.4% of the sample), Coca-Cola (70 cases or 5.8%), and Mondelez (48 cases or 4%). While the top-3 contains only consumer goods firms, the top-10 includes multiple firms in oil and gas, such as ExxonMobil or BP. In Table 1, Panel B, we list NGOs that made at least ten allegations. The top-3 NGOs are Friends of the Earth (120 allegations), Greenpeace (93), and Foodwatch (79).

## 2.2 Other data sources

To identify financially-material allegations, we rely on the industry-specific materiality map developed by the Sustainability Accounting Standards Board (SASB) (Bochkay et al. 2021, Matsumura et al. 2022, Serafeim and Yoon 2022).<sup>14</sup> According to SASB, financially-material issues generate substantial interest from various user groups (e.g., shareholders) and impact a firm's revenues, costs, or risks. Using a dictionary that identifies material E&S topics by industry (Bochkay et al. 2021), we perform a fuzzy match between allegation topics and keywords of material SASB industry topics. *Material E-Washing Allegation* equals one if an NGO alleges E-washing of a material E topic, and zero otherwise. *Material S-Washing Allegation* is defined accordingly. Variables are defined in the Data Appendix.

Using data from RepRisk, we calculate 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 ( $\Delta$  *Negative E&S News*). We also use data from RepRisk on prior negative E&S news coverage (*Prior Negative*

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<sup>14</sup> The degree of materiality is assessed based on keyword searches of publicly available corporate documents, which reveals 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 analysts' and investors' valuations.

*E&S News*). We bifurcate these E&S measures into E and S dimensions. We proxy for general media coverage (*News Articles*) using data from Ravenpack. Data from SigWatch allows us to measure an NGO's reach and impact (*NGO Influence*), with higher values indicating more influence through greater and more international operations or coalitions (Hatte and Koenig 2020).

From SigWatch and Factiva, we collect data on target firms' PR responses. *Corporate Press Response* equals one for campaigns to which a target responds in the press (within two months), and zero otherwise. We split the measure according to the kind of media response, that is, whether the target denies the allegations (*Press Response Resistance*) or concedes partially (*Press Response Concession*). *Allegation Sentiment* reflects the sentiment of the allegations and is from SigWatch.

We compile data from Trucost on firms' carbon emissions (*Emissions*), the growth rate therein ( $\Delta$  *Emissions*), and whether emissions are reported or estimated (*Emissions Estimated*). Data on the fraction of shares held by institutional investors (*IO*) is from FactSet. Following Ilhan et al. (2023), *Stewardship IO* is the number of a firm's shares owned by institutional investors subject to stewardship codes, scaled by all shares held by institutional owners.

Measures of firm characteristics, such as firm size (*Assets*) or valuation (*Tobin's Q*), are from Worldscope. We identify firms' industries (*Consumer Goods, Consumer Services, Oil & Gas*) using Industry Classification Benchmark (ICB) codes. Based on data from Corporate Register, we identify whether firms follow Global Reporting Initiative (GRI) standards when preparing sustainability reports (*GRI Standards*), and whether these reports are externally assured (*Assurance*). From Bloomberg, we obtain data on the amount of E&S information that firms disclose (*E Disclosure Score* and *S Disclosure Score*). Using data from Refinitiv, we consider whether firms link executive pay to E&S dimensions (*E&S Comp*).

Summary statistics at the allegation level are reported in Table 2, Panel A.

## 2.3 Control group construction

Some of our tests make use of a control group of firms that are similar to the targets but were not engaged by an NGO (i.e., we create a sample of *potential* targets). The sample construction starts with all listed firms in Worldscope (we start in 2011, the first year with NGO data). We then restrict this universe to firms with sustainability reports in the Corporate Register database (to ensure that control firm provide a substantial amount of E&S information). Since NGOs tend to target large firms, we further restrict the sample to the largest firms in each country. To account for differences in NGO activity across countries, the number of firms selected per country is then determined based on the proportion of firms in a country targeted by NGOs for any kind of misconduct (whether E&S-washing or not; we use SigWatch data). This procedure leads to an unbalanced panel of 11,020 firm-years from 2011 to 2022 of which 664 (10,356) firm-years are subject (not subject) to E&S-washing allegations. The number of unique firms in this sample is 1,653, of which 287 firms (17.4%) are exposed to E&S-washing allegations.<sup>15</sup>

In Table 2, Panel B, we provide statistics at the firm-year level for target and control firms.<sup>16</sup>

## 3. Anatomy of NGOs' E&S-washing allegations

### 3.1 E&S issues that NGOs criticize as E&S-washing

We list in Table 3 the E&S issues that NGOs claim are E&S-washed, and how many of those are classified as financially material. The 1,212 campaigns in the sample are split evenly between E (49.2%) and S (50.8%) issues. On the E side, firms are most frequently criticized for E&S-

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<sup>15</sup> Sample sizes in the analyses below are smaller than 11,020 due to nonoverlapping samples across different analyses.

<sup>16</sup> Many variables have different averages for firm-years with and without allegations, which is why we use a long list of control variables in the firm-year analyses. On the right side of Table 2, Panel B, the mean values for *E-Washing* and *S-Washing* do not sum to one because a firm can be subject to different NGO campaigns in the same year. *Climate-Washing* is a subset of *E-Washing*.



washing their risks, practices, or impacts concerning climate change (30.2% of all allegations); most of these allegations cover financially-material topics. Climate-washing allegations are followed by allegations over waste-related (11.2%) and biodiversity (3.4%) issues. On the S side, allegations are often related to consumer health (22%), but they also cover animal welfare (4.1%) or employee rights and safety (3.6%). Overall, a high number of allegations can be directly or indirectly linked to consumers (about 40%), which indicates that E&S-washing may be aimed at undermining consumer switches from less to more sustainable firms. As argued by Bénabou and Tirole (2010), the sensitivity of consumers to a firm's E&S practices and impacts is a key channel through which E&S practices create financial materiality and influence financial performance.

### **3.2 Presentation or obfuscation tactics that NGOs criticize as E&S-washing**

We construct measures of the obfuscation styles through which firms allegedly E&S-wash. Table 4, Panel A, shows that 36.4% of the 1,212 NGO campaigns allege that firms make claims that obfuscate their E&S risks, practices, or impacts. An E-related example is an energy firm claiming to focus on renewable sources while 95% of its investments are in oil and gas exploration, or a bank arguing it provides “sustainable financing” while instead financing many fossil fuel projects. An S-related example is a firm prominently featuring a fruit on the label of a product that hardly contains any fruit. The second-most prominent style is “talk vs. action,” which are situations where firms' practices are arguably inconsistent with public pledges (13.8% of the allegations). This includes, for example, a bank with a carbon pledge that keeps financing fossil fuel projects at large scale, or a firm failing to realize promised improvements in supply chain labor conditions. Next, in 13.4% of the campaigns, NGOs allege that firms make outright false statements, with about half of these cases being E-related (e.g., firms denying climate change). The next most frequent style relates to NGOs criticizing firms for advertising the usage of what the NGO thinks are false solutions (7.7%); an example is a firm's claim to reduce its carbon footprint by merely using offsets. In 7.2% of the cases, NGOs allege that firms hide relevant information, and in 6.6%, NGOs criticize firms for omitting relevant information from statements or claims.

### **3.3 Communication outlets that NGOs scrutinize for E&S-washing**

We hand-collect information on the communication outlets implicated in E&S-washing (we identify such outlets for 1,079 of the 1,212 allegations). Table 4, Panel B, shows that in 25.3% of the campaigns, the product label or packaging is identified as the E&S-washing outlet. Cases related to E claims include misleading information about energy consumption presented on the packaging of light bulbs. A similar category is E&S-washing of product information (13.3%), most of which relate to S issues. Two related categories are advertising (23.1%) and PR campaigns (13.3%). E&S-washing through advertising most frequently occurs with S issues, such as when Nestlé advertised in Africa that its baby formula was healthier than breast milk. Cases of PR campaigns typically relate to E issues (76.9%); for example, oil companies trying to convince politicians or regulators that fossil fuels are not harming the environment. In 7.9% of the campaigns, the disclosure outlet is the revelation of a sponsorship (e.g., an oil firm sponsoring, and possibly interfering in, a UN Climate Conference). In 8.4% of the cases, the outlet is an E commitment, such as a carbon pledge, and in another 2.9% it is a more general CSR commitment. In 3.6% of the campaigns the allegation is that firms obtain product certifications that use weak E&S standards or have poor mechanisms for enforcing compliance. Corporate websites, sustainability and financial reports, or project impact assessments each contain a maximum of ten E&S-washing allegations. These small numbers highlight the importance of considering disclosure outlets beyond those that directly target investors when scrutinizing sustainability claims.<sup>17</sup>

### **3.4 Determinants of NGOs' E&S-washing allegations**

To understand how NGOs select targets, we estimate regressions that identify the antecedents of NGOs' E&S-washing allegations. This allows us to test the prediction that NGOs are more

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<sup>17</sup> We do not rule out the possibility that the E&S claims made by firms on product labels, in advertising material, or through net zero pledges are replicated in their sustainability reports.

likely to target visible firms (H1). We estimate variants of the following OLS models for firm  $i$  in year  $t$  among the set of treatment and control group firms:

$$Allegation_{i,t} = \Phi Industry_i + \beta Ln(Assets)_{i,t-1} + \eta Tobin's Q_{i,t-1} + \theta Ln(News Articles)_{i,t-1} + \Omega Controls_{i,t-1} + \alpha_{Country} + \alpha_t + \varepsilon_{i,t} \quad (1)$$

where *Allegation* is an indicator of the different types of E&S-washing allegations. Our baseline specification uses *E&S-Washing*, which equals one if a firm experiences any E&S-washing allegation in year  $t$  (treatment group), and zero otherwise (control group). In other specifications, we use variables indicating whether the allegations are related to *E-Washing*, *S-Washing*, or *Climate-Washing*. To test H1, we include a series of variables in Eq. (1). *Industry* is a vector of three indicators that each equal one if a firm operates in consumer goods, consumer services, or oil and gas, respectively.  $Ln(Assets)$ , *Tobin's Q*, and  $Ln(News Articles)$  reflect a firm's size, equity valuation, and media prominence. *Controls* is a vector of control variables at the firm-year level.  $\alpha_{Country}$  and  $\alpha_t$  represent country and time fixed effects. We do not include industry fixed effects because they are collinear with *Industry*. Standard errors are clustered at the firm level.

Estimation results are reported in Table 5. Overall, there is support for H1: the likelihood of E&S-washing allegations is higher for more visible firms, that is, for firms that are consumer-facing (*Consumer Goods*; *Consumer Services*), in oil and gas (*Oil & Gas*), larger ( $Ln(Assets)$ ), more valuable (*Tobin's Q*), and covered by more media news ( $Ln(News Article)$ ). Specifically, in columns 1–2, firms in *Consumer Goods* have a 10pp higher E&S-washing allegations rate, which originates from 4pp more E (columns 3–4) and 8pp more S (columns 5–6) allegations. *Consumer Services* firms, likewise, face 5pp to 6pp more E&S-washing allegations (columns 1–2). While *Consumer Goods* firms see more climate-related allegations, this is not the case for *Consumer Services* firms, presumably because they have a smaller carbon footprint (columns 7–8). In columns 1–2, *Oil & Gas* firms face 7pp to 8pp more E&S-washing allegations, originating—as would be expected from the sector's large carbon footprint—from more climate allegations (columns 7–8). Larger firms and firms with more news face more allegation across all E&S-

washing types. A doubling in the number of news articles leads to a 1.2pp increase in the likelihood of an E&S-washing allegation (column 1). Finally, firms with higher valuations are more likely to receive most types of E&S-washing allegations, with the exception of climate-related ones.

Turning to the control variables, E&S-washing allegations are less likely in firms with higher ownership by investors subject to stewardship codes, with the effect originating mostly from fewer S allegations.<sup>18</sup> Preparing sustainability reports following the GRI standards, or purchasing assurance for these reports, is unrelated to allegations; this is unsurprising given that NGOs do not focus on such reports (Table 4).<sup>19</sup> In columns 2, 4, 6, and 8, which include additional controls that reduce the sample size, the usage of E&S metrics in executive pay is associated with a 3.5pp increase in the allegation rate.<sup>20</sup> S-washing allegations are *more* common among firms disclosing more S information, and climate-washing allegations are more likely among high-carbon emitters.

## **4. Stock market and media reactions to NGO's E&S-washing allegations**

### **4.1 Stock market reaction to NGOs' E&S-washing allegations**

H2a predicts that stock markets react negatively to NGO E&S-washing allegations. To test this prediction, Table 6, Panel A, reports three-day, buy-and-hold market-adjusted returns from the day before to the day after the publication of an NGO allegation (*Stock Market Reaction*). In

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<sup>18</sup> This relation may result from a selection or influence effect. According to the former effects, institutions that are required to address ESG issues to fulfil their commitments from stewardship codes avoid investing in firms prone to potential E&S-washing. According to the latter effect, such institutions may monitor firms to prevent E&S-washing.

<sup>19</sup> That said, the nonresult indicates that the potential benefits from adhering to GRI standards and purchasing assurance may not spill over from sustainability reports to firms' other E&S communications. In addition, it is inconsistent with the notion that NGOs perceive sustainability report assurance as a credible signal of firms' commitment to transparent E&S reporting (Simnett et al. 2009).

<sup>20</sup> This result is inconsistent with E&S-based executive pay acting as a credible signal of firms' commitment to their E&S promises (Cohen et al. 2023). We relate *E&S Comp* to *E&S-Washing* but not to *E-Washing*, *S-Washing*, or *Climate-Washing* because we are unable to tell which firms use E or S metrics (or both).

support of H2a, we observe a negative unconditional return of -0.34% over the three-day window centered on the E&S-washing allegation date ( $t$ -statistic of 3.82).

While this result supports H2a, the magnitude of the response is modest, possibly masking variation across allegations. We therefore test whether the return reaction is stronger for financially-material allegations (H2b), more influential NGOs (H2c), and firms with higher stewardship ownership (H7a). Thus, we estimate regressions for allegation  $a$  at firm  $i$  in year  $t$ :

$$\begin{aligned} \text{Stock Market Reaction}_{a,i,t} = & \beta_1 \text{Material E-Washing Allegation}_{a,i,t} + \beta_2 \text{Material S-} & (2) \\ & \text{Washing Allegation}_{a,i,t} + \beta_3 \text{NGO Influence}_{a,i,t} + \beta_4 \text{Stewardship IO}_{i,t-1} + \\ & \Omega \text{Controls}_{a,i,t-1} + \alpha_{\text{Country}} + \alpha_t + \varepsilon_{a,i,t} \end{aligned}$$

where *Stock Market Reaction* is defined as just explained. *Material E-Washing Allegation* equals one if an NGO alleges E-washing of a financially-material topic, and zero otherwise. *Material S-Washing Allegation* is defined accordingly. *NGO Influence* captures an NGO's reach and impact through international operations and coalitions. *Stewardship IO* is the number of a firm's shares owned by institutional investors subject to stewardship codes, scaled by the outstanding shares held by institutional owners. *Controls* represents control variables at the firm-year or allegation level. We do not control for industry fixed effects because the SASB's definition of financial materiality is based on industry membership. Standard errors are clustered at the firm level.

Supporting H2b, Table 6, Panel B, shows that the return reaction is significantly more negative (about 50bp larger) for financially-material allegations, but *only* if the allegations concern E topics. Together with the observation that about 38% of all E-washing allegations are material (Table 2, Panel A), this suggests that NGO scrutiny of E&S claims is important to investors. *NGO Influence* is also negatively associated with the return response, implying that allegations voiced by more influential NGOs are taken more seriously by investors and lead to more negative market reactions (H2c). Further, the market reaction is more negative when stewardship ownership is higher, presumably because investors subject to stewardship codes are more E&S-sensitive and divest

after the allegations, putting pressure on the stock price (H7a). While the return reaction is insignificant when *Stewardship IO* equals 10%, it is between -0.9% and -1% when it is 90%.

#### 4.2 Media reactions to NGOs' E&S-washing allegations

We next shed light on how the media responds to the allegation news. Table 7, Panel A, shows a 0.053 increase in the number of negative E&S news articles over the three-day window around an E&S-washing allegation, or 14.6% relative to the average article number in the three days before the allegation. This finding supports H3a. We explore variation in the media response by estimating a regression for allegation  $a$  at firm  $i$  in year  $t$ :

$$\Delta \text{Negative News}_{a,i,t} = \beta_1 \text{Material E-Washing Allegation}_{a,i,t} + \beta_2 \text{Material S-Washing Allegation}_{a,i,t} + \beta_3 \text{NGO Influence}_{a,i,t} + \Omega \text{Controls}_{a,i,t-1} + \alpha_{\text{Country}} + \alpha_t + \varepsilon_{a,i,t} \quad (3)$$

where  $\Delta \text{Negative News}$  is one of three variables reflecting the percentage change in negative E&S-related news ( $\Delta \text{Negative E\&S News}$ ,  $\Delta \text{Negative E News}$ , or  $\Delta \text{Negative S News}$ ). Variables of interest are again *Material E-Washing Allegation*, *Material S-Washing Allegation*, and *NGO Influence*. We include the Eq. (2) controls and add some media-related variables (e.g., past news).

Results are reported in Table 7, 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 0.20 to 0.28 (0.20 to 0.21), relative to the days before and 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 0.17 and 0.23 (this is large relative to the average pre-event E news coverage of 0.24 articles). In columns 5–6, we do not obtain similar effects for S allegations. Overall, the support for H3b is mixed. Turning to H3c, we do not detect stronger media reactions for allegations from more influential NGOs.

## 5. Corporate reactions to NGOs' E&S-washing allegations

### 5.1 Press responses following E&S-washing allegations

We start the analysis of the corporate response to the NGO campaigns by evaluating whether (and which) targets neglect the allegations or comment on them in a conceding or resisting way. In Table 2, Panel A, we observe direct press reactions (*Corporate Press Response*) in just 10% of the allegations, typically arising when a journalist asks the target for comments on an article. Six percent of the allegations are cases where the press response contains a resisting statement (*Press Response Resistance*), and 4% have a conceding statement (*Press Response Concession*). To explore variation in the response type, we estimate for allegation  $a$  at firm  $i$  in year  $t$ :

$$PR Response_{a,i,t} = \beta_1 Material E-Washing Allegation_{a,i,t} + \beta_2 Material S-Washing Allegation_{a,i,t} + \beta_3 NGO Influence_{a,i,t} + \Omega Controls_{a,i,t-1} + \alpha_{Country} + \alpha_t + \varepsilon_{a,i,t}, \quad (4)$$

where *PR Response* is one of three indicators, each measured over the two months after an allegation: *Corporate Press Response*, *Press Response Resistance*, or *Press Response Concession*. Other variables are defined as above. The control variables follow the earlier specifications, except that we additionally control in some tests for the stock price and media reaction (the PR response may depend on how the market and media react to an allegation).

Results are reported in Table 8. In column 1–2, the probability of any direct PR response is not higher for material allegations. Similarly, in columns 3–4, there are no significant associations between *Material Allegation* and *Press Response Resistance*. In column 5, a *Press Response Concession* is significantly less likely for material E-washing allegations. Hence, firms are more reluctant to admit to E-washing when it concerns material issues, potentially because an admission would have worse reputational or financial consequences. While the effect size is unchanged in column 6, it is noisier with the additional controls. Overall, there is little support for H4a.

However, we find that more influential NGOs generate a higher overall likelihood of a corporate press response, in support of H4b. In columns 2 and 6, an increase in NGO influence

from the 25<sup>th</sup> to 75<sup>th</sup> percentile is associated with a 2.5pp increase in the likelihood of a corporate press response, and a 1.8pp increase in obtaining a concession in the press response.

## 5.2 Carbon emissions following NGOs' climate-washing allegations

We next examine whether E&S-washing allegations are followed by real changes in firms' operations. We test for such substantive reactions by investigating whether targets reduce their carbon emissions after being subject to allegations of climate-washing. We estimate the following two models on firm  $i$  and year  $t$  among firms in the treatment and control group:

$$\Delta Emissions_{i,t} = \beta_1 Climate-Washing_{i,t-1} + \Omega Controls_{i,t-1} + \alpha_{ICB} + \alpha_{Country} + \alpha_t + \varepsilon_{i,t}, \quad (5)$$

$$\Delta Emissions_{i,t} = \beta_1 Material\ Climate-Wash_{i,t-1} + \Omega Controls_{i,t-1} + \alpha_{ICB} + \alpha_{Country} + \alpha_t + \varepsilon_{i,t}, \quad (6)$$

where  $\Delta Emissions$  is the change in Scope 1 carbon emissions from year  $t-1$  to year  $t$ , scaled by emissions in  $t-1$ . We focus on Scope 1 emissions because NGO typically target the direct business activities of a firm, and Scope 1 emissions are emitted by the firm itself rather than in its supply or value chain (this follows, e.g., Cohen et al. 2023). In addition, Scope 1 emissions are measured much more accurately than Scope 2 and 3 emissions. We cannot use firm fixed effects due to limited variation in *Climate-Washing* and *Material Climate-Washing*. However, the scaled change in emissions, which follows Bolton and Kacperczyk (2021, 2023), reduces concerns about correlated time-invariant omitted variables. *Climate-Washing* in Eq. (5) equals one for firms that are subject to climate-washing allegations, and *Material Climate-Washing* in Eq. (6) is one for those climate-washing allegations that are financially material.<sup>21</sup> *Controls* include firms' financial fundamentals, their past news coverage, measures of ESG disclosure and performance (*GRI*

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<sup>21</sup> Out of 134 firm-years with climate-washing allegations in the regression sample, 116 are financially material. The firm-years with climate-washing allegations are lower than the number in Table 3 because there the unit of observation is an NGO allegation (firms are often subject to several climate-washing allegations in the same year). In addition, the number of climate-washing allegations in Table 9 is lower because of missing  $\Delta Emissions$  values.



*Standards, Assurance, E&S Comp, Ln(E Disclosure Score)*), *Emissions Estimated*, and past emissions ( $\text{Ln}(\text{Emissions})$ ). As before,  $\alpha_{\text{Country}}$  and  $\alpha_t$  are country and time fixed effects, and  $\alpha_{\text{ICB}}$  represent industry fixed effects.<sup>22</sup>

The results are reported in Table 9. In all specifications, we find significant negative associations between *Climate-Washing (Material Climate-Washing)* and  $\Delta \text{Emissions}$ , supporting H5. Specifically, columns 1–3 indicate a 5pp to 7pp decline in emissions for firms facing climate-washing allegations (relative to the control group). In columns 4–6, the estimates are similar if we identify effects from financially-material climate-washing allegations. The similar effect sizes across columns 1–6 suggest that even firms for which climate issues are not financially material decide to respond to the NGO allegations by lower emissions; this may reflect the importance of the topic of climate change in the public debate. In terms of the control variables, firms with lower emissions, and those with vendor-estimated emissions, exhibit higher emission growth rates.

Overall, it appears that firms are making real changes following climate-washing allegations. While our analyses cannot speak to corporate real activities beyond those related to climate impacts, they indicate that NGO scrutiny of corporate sustainability claims has corporate effects.

### **5.3 Role of institutional investors for NGOs' climate-washing allegations**

Finally, we turn to the question of whether some of the results in Table 9 originate from second-round effects generated by investors who use NGO allegations as a trigger for their own engagement. To test for such catalyst effects, we estimate the following variants of Eq. (5) and (6) for firm  $i$  and year  $t$  among firms in the treatment and control group:

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<sup>22</sup> We can control for industry fixed effects ( $\alpha_{\text{ICB}}$ ) because whether *Climate-Washing* or *Material Climate-Washing* equals zero or one depends on two conditions: (i) whether there is an allegation of climate-washing against a firm; and (ii) whether this allegation is financially significant in the firm's industry? Industry fixed effects are collinear only with the second condition. In contrast, in Tables 6–8, *Material E-Washing Allegation* and *Material S-Washing Allegation* are determined solely by the second condition, meaning that industry fixed effects cannot be applied.

$$\Delta Emissions_{i,t} = \beta_1 Climate-Washing_{i,t-1} \times Stewardship IO_{i,t-1} + \beta_2 Climate-Washing_{i,t-1} + \beta_2 Stewardship IO_{i,t-1} + \Omega Controls_{i,t-1} + \alpha_{ICB} + \alpha_{Country} + \alpha_t + \varepsilon_{i,t}, \quad (7)$$

$$\Delta Emissions_{i,t} = \beta_1 Material Climate-Washing_{i,t-1} \times Stewardship IO_{i,t-1} + \beta_2 Material Climate-Washing_{i,t-1} + \beta_2 Stewardship IO_{i,t-1} + \Omega Controls_{i,t-1} + \alpha_{ICB} + \alpha_{Country} + \alpha_t + \varepsilon_{i,t}, \quad (8)$$

where *Stewardship IO* is number of a firm's shares owned by institutional investors subject to stewardship codes, scaled by the outstanding shares held by institutional owners. Other variables are defined as in Eq. (5) and (6).

The regression estimates in Table 10 show that the decline in emissions after climate-washing allegations is particularly strong among firms owned by many institutions that are subject to stewardship codes, supporting H6b. These results hold independently of whether we consider effects from all climate-washing allegations or focus only on those that are financially material to the firm. In terms of magnitudes, we can calculate for the results in columns 4–6, which represent estimates of Eq. (8), that emission reductions following NGO climate-washing allegations are statistically insignificant when stewardship ownership is low (*Stewardship IO* equals 10%). To the contrary, this effect increases substantially to between -5.8% and -7.6% when stewardship ownership is high (*Stewardship IO* is 90%). These results support an interpretation whereby NGOs act as catalysts for institutional investors, who engage portfolio firms in response to the allegations.

## 6. Conclusion

We use novel data on NGO activism campaigns to examine whether these campaigns can facilitate scrutiny of corporate E&S claims. Our analysis allows us to shed light on the value of NGOs in ESG. Our results suggest that NGO scrutiny of corporate E&S claims has financial and real effects as reflected in stock market and media reactions as well as changes in real corporate activities. NGO campaign seems to work as catalysts for voice (engagement) and exit (divestment) by institutional investors. These results are important given the dearth of research on whether and

how NGOs create value in ESG. Beyond providing an anatomy of NGO activism and the associated value implications, our findings have implications for regulatory efforts to detect and prevent E&S-washing. First, NGOs appear to be effective in identifying and raising attention to corporate E&S-washing, in turn offering a useful source of information for regulators. Second, NGO scrutiny seems to be complementary to current regulatory efforts, because we find that NGOs scrutinize a broader range of disclosure outlets than what regulators or standard setters consider.

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## Data Appendix Variable Definitions

Variable Name	Definition	Source
<i>Allegation Level Variables</i>		
<i>Stock Market Reaction</i> <sub>a,i,t</sub>	Three-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.	Worldscope
$\Delta$ <i>Negative E&amp;S News</i> <sub>a,i,t</sub>	Change in the number of <i>negative</i> environmental- and social-related news articles from the three days before to the three days after the NGO allegation.	RepRisk
<i>Prior Negative E&amp;S News</i> <sub>a,i,t</sub>	Number of <i>negative</i> environmental- and social-related news articles over the three days leading up to the NGO allegation.	RepRisk
$\Delta$ <i>Negative E News</i> <sub>a,i,t</sub>	Change in the number of <i>negative</i> environmental-related news articles from the three days before to three days after the NGO allegation.	RepRisk
<i>Prior Negative E News</i> <sub>a,i,t</sub>	Number of <i>negative</i> environmental-related news articles over the three days leading up to the NGO allegation.	RepRisk
$\Delta$ <i>Negative S News</i> <sub>a,i,t</sub>	Change in the number of <i>negative</i> social-related news articles from three days before to three days after the NGO allegation.	RepRisk
<i>Prior Negative S News</i> <sub>a,i,t</sub>	Number of social-related <i>negative</i> news articles over the three days leading up to the NGO allegation.	RepRisk
<i>Corporate Press Response</i> <sub>a,i,t</sub>	Indicator equal to 1 for campaigns that the firm responds to in the press within two months, equal to 0 for other campaigns.	SigWatch, Factiva
<i>Press Response Resistance</i> <sub>a,i,t</sub>	Indicator equal to 1 for campaigns that the firm responds in the press within two months by denying or resisting the NGO's allegations, equal to 0 for other campaigns.	SigWatch, Factiva
<i>Press Response Concession</i> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns that the firm responds in the press within two months by conceding or admitting to (some of) the NGO's allegations, and 0 for other campaigns.	SigWatch, Factiva
<i>Material E-Washing Allegation</i> <sub>a,i,t</sub>	Indicator that equals 1 if the environmental topic that the E-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 3, we use disaggregated information on the specific environmental topic that the allegation relates to.	SigWatch, SASB, hand collection
<i>Material S-Washing Allegation</i> <sub>a,i,t</sub>	Indicator that equals 1 if the social topic that the S-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 3, we use disaggregated information on the specific social topic that the allegation relates to.	SigWatch, SASB, hand collection
<i>Allegation Sentiment</i> <sub>a,i,t</sub>	Categorical variable for how negative the NGO's comments about the target firm are. A value of -2 (-1) implies strong (mild) criticism.	SigWatch
<i>NGO Influence</i> <sub>a,i,t</sub>	Categorical variable for an NGO's reach and influence estimated by SigWatch. Values for this variable range between 0.5 (for	SigWatch

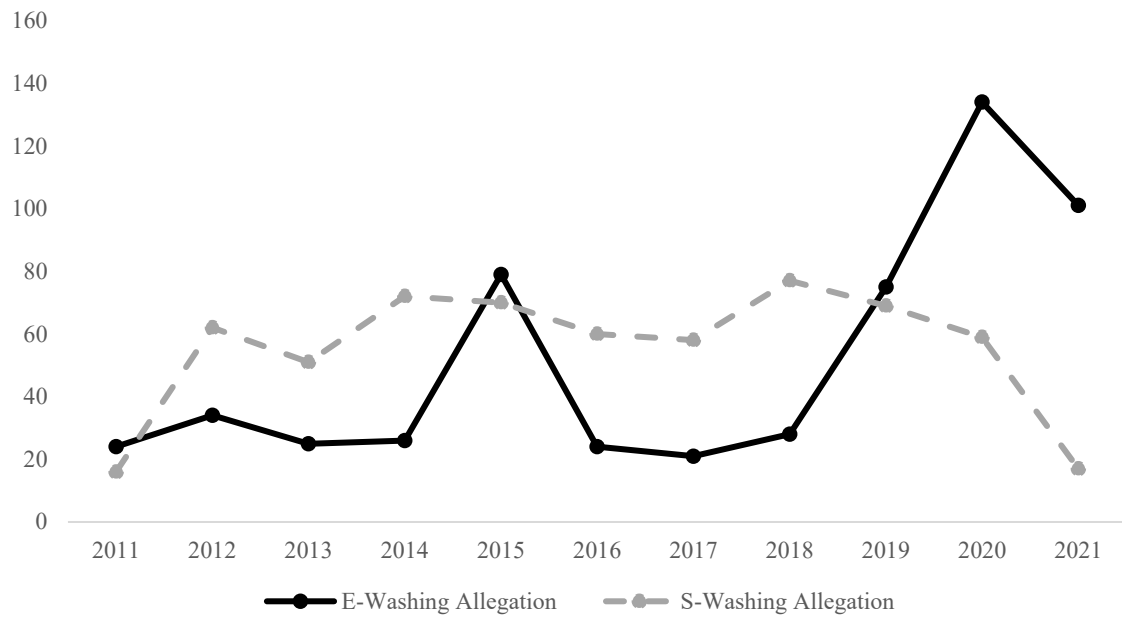


	local NGOs) and 2.75 (for global coalitions), with higher values indicating broader geographic reach and influence (from local, national, world regional, to global) through greater and more international operations and coalitions.	
<i>Piggybacking</i> <sub>a,i,t</sub>	Indicator equal to 1 if the NGO's allegation was previously already voiced by another party such as a media outlet, equal to 0 otherwise.	Hand collection
<i>Misleading Claim</i> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns alleging that the firm made a claim or statement about its environmental or social practices or outcomes that is not necessarily incorrect but creates the wrong impression among the audience, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>False Claim</i> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns alleging that the 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> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns alleging that firms' 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> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns alleging that the 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> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns alleging that the firm was hiding information about its ESG activities, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>Information Omitted</i> <sub>a,i,t</sub>	Indicator that equals 1 for campaigns alleging that the firm was omitting information about its ESG activities, and 0 for campaigns with other allegations.	SigWatch, hand collection
<i>Other Style</i> <sub>a,i,t</sub>	Indicator that equals 1 for all remaining campaigns alleging that could not be allocated to <i>Misleading Claim</i> , <i>False Claim</i> , <i>Talk vs. Action</i> , <i>False Solution</i> , <i>Information Hidden</i> , or <i>Information Omitted</i> , and 0 otherwise.	SigWatch, hand collection
<i>Firm-Year Level Variables</i>		
<i>E&amp;S-Washing</i> <sub>i,t</sub>	Indicator that equals 1 for firm-years with E&S-washing allegations, and 0 otherwise.	SigWatch
<i>E-Washing</i> <sub>i,t</sub>	Indicator that equals 1 for firm-years with E-washing allegations, and 0 otherwise.	SigWatch
<i>Climate-Washing</i> <sub>i,t</sub>	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>Material Climate-Washing</i> <sub>i,t</sub>	Indicator that equals 1 for firm-years with a climate-washing allegation for which climate risk is financially-material given a firm's industry, and 0 otherwise. Financial materiality is identified using the SASB materiality map.	SigWatch, SASB, hand collection
<i>S-Washing</i> <sub>i,t</sub>	Indicator that equals 1 for firm-years with S-washing allegations, and 0 otherwise.	SigWatch
<i>Assurance</i> <sub>i,t</sub>	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> <sub>i,t</sub>	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> <sub><i>i,t</i></sub>	Bloomberg's environmental disclosure score, 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> <sub><i>i,t</i></sub>	Bloomberg's social disclosure score 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&amp;S Disclosure Score</i> <sub><i>i,t</i></sub>	The average of <i>E Disclosure Score</i> and <i>S Disclosure Score</i> from Bloomberg. See above.	Bloomberg
<i>Emissions</i> <sub><i>i,t</i></sub>	Amount of Scope 1 CO <sub>2</sub> and CO <sub>2</sub> -equivalent emissions (in million tons).	Trucost
$\Delta$ <i>Emissions</i> <sub><i>i,t</i></sub>	Change in Scope 1 CO <sub>2</sub> and CO <sub>2</sub> -equivalent emissions from year <i>t-1</i> to year <i>t-1</i> scaled by emissions in year <i>t-1</i> .	Trucost
<i>Emissions Estimated</i> <sub><i>i,t</i></sub>	Indicator equal to 1 if Trucost indicates that it estimated the Scope 1 greenhouse gas emissions, equal 0 if the emission number was obtained from firm disclosures	Trucost
<i>Consumer Goods</i> <sub><i>i,t</i></sub>	Indicator that equals 1 for firms in the ICB consumer goods industry, and 0 otherwise.	Corporate Register
<i>Consumer Services</i> <sub><i>i,t</i></sub>	Indicator that equals 1 for firms in the ICB consumer services industry, and 0 otherwise.	Corporate Register
<i>Oil &amp; Gas</i> <sub><i>i,t</i></sub>	Indicator that equals 1 for firms in the ICB oil and gas industry, and 0 otherwise.	Corporate Register
<i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	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
<i>IO</i> <sub><i>i,t-1</i></sub>	Ratio of the firm's shares owned by institutional owners to total shares outstanding.	FactSet
<i>Assets</i> <sub><i>i,t-1</i></sub>	Book value of total assets (WC02999).	Worldscope
<i>Tobin's Q</i> <sub><i>i,t-1</i></sub>	Ratio of total debt (WC03255) and the market value of equity (WC08001) to the book value of total assets (WC02999).	Worldscope
<i>ROA</i> <sub><i>i,t-1</i></sub>	Earnings before interest and taxes (WC18191) scaled by lagged total assets (WC02999).	Worldscope
<i>News Articles</i> <sub><i>i,t-1</i></sub>	Number of news articles related to the firm during the year.	Ravenpack
<i>E&amp;S Comp</i> <sub><i>i,t-1</i></sub>	Indicator that equals 1 for firm-years in which executive compensation is partly dependent on environmental or social metrics, and 0 otherwise.	Refinitiv ESG

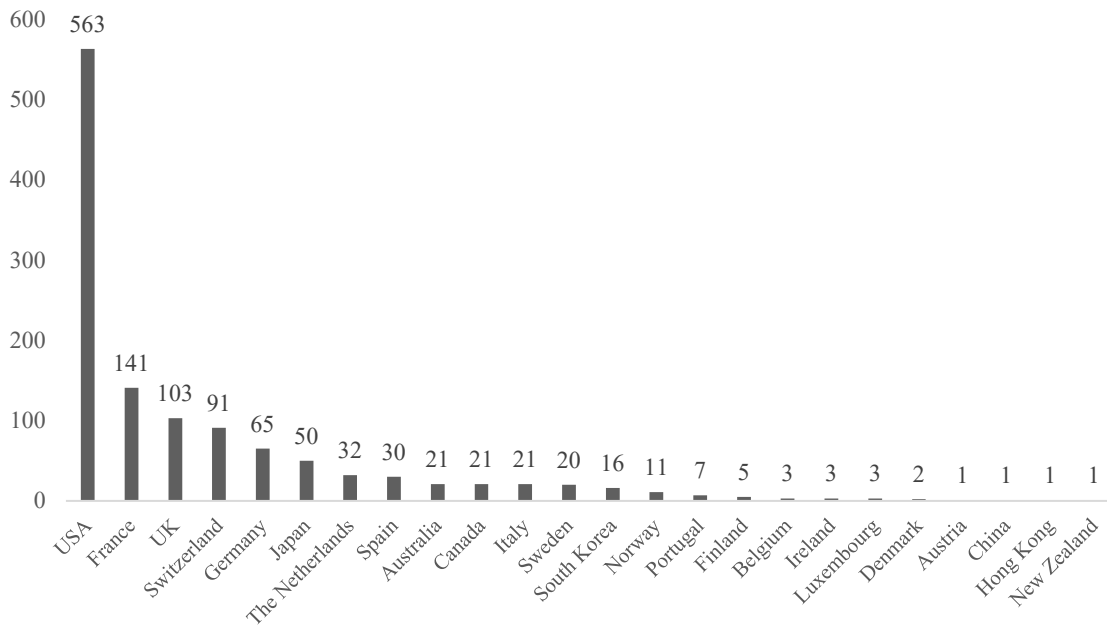
This Appendix provides variable definitions and sources. Continuous variables (except stock returns) are winsorized at 1<sup>st</sup> and 99<sup>th</sup> percentiles.

**Figure 1**  
**Time-Series of E&S-Washing Allegation**



This figure plots the number of E-washing allegations (solid line) and S-washing allegations (dashed line) over time. We omit the year 2022 for which we only have data for the beginning of the year.

**Figure 2**  
**E&S-Washing Allegations across Countries**



This figure presents the number of NGO E&S-washing campaigns by country of the targeted firms. The total number of campaigns is 1,212.

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

<b>Panel A. E&amp;S-Washing Allegations by Firm</b>					
Firm	#	%	Firm	#	%
Nestlé	77	6.4	Engie	15	1.2
Coca Cola	70	5.8	Total Energies	14	1.2
Mondelez	48	4.0	Volkswagen	14	1.2
Danone	36	3.0	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'Oreal	11	0.9
Chevron	28	2.3	Equinor	10	0.8
Procter & Gamble	26	2.1	H&M	10	0.8
BP	24	2.0	Tyson Foods	10	0.8
Ahold Delhaize	21	1.7	Others	591	48.8
Walmart	21	1.7	Total	1,212	100
General Mills	19	1.6			
McDonalds	19	1.6			
BNP Paribas	16	1.3			
<b>Panel B. E&amp;S-Washing Allegations by NGO</b>					
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	4.3	BEUC	19	1.0
Corporate Europe Observ.	54	3.0	Clean Clothes Campaign Int.	17	0.9
Verbraucherzentrale	49	2.7	Divest Invest Protect	16	0.9
Which?	49	2.7	Recycling Network	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	2.0	Environmental Working Group	14	0.8
Observatoire des Multinationales	35	1.9	Proteste Brasil	14	0.8
Corporate Accountability International	34	1.9	Consumentenbond	12	0.7
Konsument.at	34	1.9	DECO Proteste	12	0.7
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	1,818	100.0

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 (1,818) is higher than the total number of NGO campaigns (1,212) because several NGOs can be involved in / cooperate on the same campaign.

**Table 2**  
**Summary Statistics**

<b>Panel A. Allegation Level Statistics</b>						
	Mean	SD	P25	Median	P75	Obs.
<i>Stock Market Reaction</i> <sub>a,i,t</sub>	0.00	0.03	-0.02	0.00	0.01	1,122
$\Delta$ <i>Negative E&amp;S News</i> <sub>a,i,t</sub>	0.05	0.88	0.00	0.00	0.00	1,182
$\Delta$ <i>Negative E News</i> <sub>a,i,t</sub>	0.01	0.66	0.00	0.00	0.00	1,182
$\Delta$ <i>Negative S News</i> <sub>a,i,t</sub>	0.05	0.75	0.00	0.00	0.00	1,182
<i>Corporate Press Response</i> <sub>a,i,t</sub>	0.10					1,212
<i>Press Response Resistance</i> <sub>a,i,t</sub>	0.06					1,212
<i>Press Response Concession</i> <sub>a,i,t</sub>	0.03					1,212
<i>Material E-Washing Allegation</i> <sub>a,i,t</sub>	0.38					1,212
<i>Material S-Washing Allegation</i> <sub>a,i,t</sub>	0.15					1,212
<i>Stewardship IO</i> <sub>i,t-1</sub>	0.56	0.34	0.18	0.60	0.92	1,199
<i>IO</i> <sub>i,t-1</sub>	0.49	0.23	0.30	0.45	0.70	1,186
<i>Assets</i> <sub>i,t-1</sub> (in \$ millions)	210,725	401,989	31,524	80,549	176,112	1,212
<i>Tobin's Q</i> <sub>i,t-1</sub>	1.61	1.23	0.73	1.28	2.12	1,209
<i>ROA</i> <sub>i,t-1</sub>	0.09	0.08	0.04	0.09	0.13	1,208
<i>News Articles</i> <sub>i,t-1</sub>	10,984	14,405	2,510	5,438	12,254	1,212
<i>GRI Standards</i> <sub>i,t-1</sub>	0.70	0.46	0.00	1.00	1.00	1,153
<i>Assurance</i> <sub>i,t-1</sub>	0.58	0.49	0.00	1.00	1.00	1,153
<i>E&amp;S Disclosure Score</i> <sub>i,t</sub>	39.20	12.40	30.61	39.86	47.68	1,190
<i>E Disclosure Score</i> <sub>i,t</sub>	44.44	16.46	34.73	43.17	57.14	1,190
<i>S Disclosure Score</i> <sub>i,t</sub>	33.94	11.91	24.97	33.68	43.08	1,190
<i>NGO Influence</i> <sub>a,i,t</sub>	1.36	0.57	1.00	1.00	1.50	1,212
<i>Allegation Sentiment</i> <sub>a,i,t</sub>	-1.64	0.48	-2.00	-2.00	-1.00	1,212
<i>Piggybacking</i> <sub>a,i,t</sub>	0.01	0.09	0.00	0.00	0.00	1,212
<i>Prior Negative E&amp;S News</i> <sub>a,i,t</sub>	0.35	0.69	0.00	0.00	0.00	1,182
<i>Prior Negative E News</i> <sub>a,i,t</sub>	0.24	0.57	0.00	0.00	0.00	1,182
<i>Prior Negative S News</i> <sub>a,i,t</sub>	0.23	0.53	0.00	0.00	0.00	1,182

**Table 2 (continued)**

	No E&S-Washing Allegations						E&S-Washing Allegations						<i>Diff. in means p-value</i>
	Mean	SD	P25	Median	P75	Obs.	Mean	SD	P25	Median	P75	Obs.	
<i>E-Washing</i> <sub><i>i,t</i></sub>	0.00					10,356	0.61					664	-
<i>S-Washing</i> <sub><i>i,t</i></sub>	0.00					10,356	0.50					664	-
<i>Climate-Washing</i> <sub><i>i,t</i></sub>	0.00					10,356	0.38					664	-
<i>Material Climate-Washing</i> <sub><i>i,t-1</i></sub>	0.01					9,692	0.10					637	0.00
$\Delta$ <i>Emissions</i> <sub><i>i,t</i></sub>	0.04	0.46	-0.11	-0.01	0.09	9,102	0.01	0.33	-0.10	-0.02	0.06	552	0.04
<i>Emissions</i> <sub><i>i,t-1</i></sub> (in tCO <sub>2</sub> e millions)	3.37	10.70	0.02	0.12	0.77	9,122	8.54	18.78	0.08	0.73	4.00	552	0.00
<i>Emissions Estimated</i> <sub><i>i,t</i></sub>	0.14					9,290	0.04					564	0.00
<i>Consumer Goods</i> <sub><i>i,t</i></sub>	0.15					10,356	0.33					664	0.00
<i>Consumer Services</i> <sub><i>i,t</i></sub>	0.11					10,356	0.18					664	0.00
<i>Oil &amp; Gas</i> <sub><i>i,t</i></sub>	0.04					10,356	0.09					664	0.00
<i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	0.57	0.32	0.27	0.60	0.89	10,356	0.57	0.33	0.19	0.62	0.91	652	0.80
<i>IO</i> <sub><i>i,t-1</i></sub>	0.42	0.28	0.19	0.33	0.66	10,356	0.47	0.24	0.26	0.42	0.70	648	0.00
<i>Assets</i> <sub><i>i,t-1</i></sub> (in \$ millions)	72,214	214,272	4,589	12,893	39,739	10,356	224,991	429,480	18,617	62,711	171,596	664	0.00
<i>Tobin's Q</i> <sub><i>i,t-1</i></sub>	1.35	1.16	0.67	0.99	1.63	10,356	1.48	1.28	0.67	1.06	1.92	661	0.01
<i>ROA</i> <sub><i>i,t-1</i></sub>	0.08	0.08	0.03	0.07	0.12	10,356	0.08	0.08	0.03	0.07	0.13	662	0.34
<i>News Articles</i> <sub><i>i,t-1</i></sub>	2702	6175	353	912	2332	10,356	9956	13435	1871	4214	11437	664	0.00
<i>GRI Standards</i> <sub><i>i,t-1</i></sub>	0.54					10,356	0.70					625	0.00
<i>Assurance</i> <sub><i>i,t-1</i></sub>	0.37					10,356	0.54					625	0.00
<i>E&amp;S Disclosure Score</i> <sub><i>i,t-1</i></sub>	31.41	13.78	21.69	31.32	40.79	9,625	38.20	13.08	29.46	38.74	46.49	651	0.00
<i>E Disclosure Score</i> <sub><i>i,t-1</i></sub>	35.05	18.50	21.38	35.61	48.14	9,625	42.84	16.82	33.28	42.34	55.12	651	0.00
<i>S Disclosure Score</i> <sub><i>i,t-1</i></sub>	27.77	12.66	17.71	26.48	36.40	9,625	33.56	12.63	23.88	33.43	42.99	651	0.00
<i>E&amp;S Comp</i> <sub><i>i,t-1</i></sub>	0.40					9,058	0.60					610	0.00

This table provides summary statistics at the firm-year (Panel A) and allegation (Panel B) level. All variables are defined in the Data Appendix.

**Table 3**  
**E&S-Washing Allegations by E&S Topic**

E&S Topics	# E&S- Washing Allegations	% Total	# Fin. Mat. E&S Topics	% Total
<i>E-Washing Allegations</i>				
Climate Change	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	22.0	100	15.7
Transparent Pricing	102	8.4	14	2.2
Other Product Quality	71	5.9	0.0	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	1,212	100.0	638	100.0

This table presents NGO E&S-washing allegations broken down by the environmental and social (E&S) topics that the allegation refers to and by financial materiality. The unit of observation is an NGO allegation.



**Table 4**  
**E&S-Washing Allegations by Presentation or Obfuscation Style and Disclosure Outlet**

<b>Panel A. E&amp;S-Washing Allegations by Presentation or Obfuscation Style</b>						
Style	# E&S-Washing Allegations	% Total	# E-Washing Allegations	% E-Washing Allegations	# S-Washing Allegations	% S-Washing Allegations
<i>Misleading Claim</i> <sub>a,i,t</sub>	441	36.4	118	26.8	323	73.2
<i>Talk vs Action</i> <sub>a,i,t</sub>	167	13.8	135	80.8	32	19.2
<i>False Claim</i> <sub>a,i,t</sub>	163	13.4	76	46.6	87	53.4
<i>False Solution</i> <sub>a,i,t</sub>	93	7.7	80	86	13	14
<i>Information Hidden</i> <sub>a,i,t</sub>	87	7.2	0	0	87	100
<i>Information Omitted</i> <sub>a,i,t</sub>	80	6.6	41	51.3	39	48.8
<i>Other</i> <sub>a,i,t</sub>	181	14.9	146	80.7	35	19.3
<b>Total</b>	<b>1,212</b>	<b>100</b>	<b>596</b>	<b>49.2</b>	<b>616</b>	<b>50.8</b>
<b>Panel B. E&amp;S-Washing Allegations by Disclosure Outlet</b>						
Disclosure Outlet	# E&S-Washing Allegations	% Total	# E-Washing Allegations	% E-Washing Allegations	# S-Washing Allegations	% S-Washing Allegations
<i>Label or Packaging</i> <sub>a,i,t</sub>	273	25.3	33	12.1	240	87.9
<i>Advertising</i> <sub>a,i,t</sub>	249	23.1	96	38.6	153	61.4
<i>PR Campaign</i> <sub>a,i,t</sub>	143	13.3	110	76.9	33	23.1
<i>Product Information</i> <sub>a,i,t</sub>	143	13.3	16	11.2	127	88.8
<i>Env. Commitment</i> <sub>a,i,t</sub>	91	8.4	91	100.0	0	0.0
<i>Sponsorship</i> <sub>a,i,t</sub>	85	7.9	74	87.1	11	12.9
<i>Certification</i> <sub>a,i,t</sub>	39	3.6	24	61.5	15	38.5
<i>CSR Commitment</i> <sub>a,i,t</sub>	31	2.9	17	54.8	14	45.2
<i>Corporate Website</i> <sub>a,i,t</sub>	10	0.9	4	40.0	6	60.0
<i>Fin. Report/Present.</i> <sub>a,i,t</sub>	6	0.6	6	100.0	0	0.0
<i>Sustainability Report</i> <sub>a,i,t</sub>	5	0.5	2	40.0	3	60.0
<i>Impact Assessment</i> <sub>a,i,t</sub>	4	0.4	3	75.0	1	25.0
<b>Total</b>	<b>1,079</b>	<b>100</b>	<b>476</b>	<b>44.1</b>	<b>603</b>	<b>55.9</b>

Panel A presents NGO E&S-washing allegations broken down by the presentation or obfuscation style through which the firm is E&S-washing according to the NGO and by the environmental and social (E&S) dimensions. The unit of observation is an allegation. Panel B presents NGO E&S-washing allegations broken down by the disclosure outlet in which the firm is E&S-washing and by the environmental and social (E&S) dimensions. The unit of observation is an NGO allegation but the number of cases is less than the total number of E&S-washing allegations in the sample (1,212) because information on the disclosure outlet is not always available.

**Table 5**  
**Determinants of E&S-Washing Allegations**

	<i>E&amp;S Washing</i> <sub><i>i,t</i></sub>		<i>E-Washing</i> <sub><i>i,t</i></sub>		<i>S-Washing</i> <sub><i>i,t</i></sub>		<i>Climate-Washing</i> <sub><i>i,t</i></sub>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Consumer Goods</i> <sub><i>i,t</i></sub>	0.094*** (6.02)	0.101*** (5.72)	0.036*** (4.39)	0.040*** (4.76)	0.079*** (5.29)	0.085*** (5.29)	0.007* (1.76)	0.010** (2.40)
<i>Consumer Services</i> <sub><i>i,t</i></sub>	0.056*** (4.11)	0.060*** (4.01)	0.019*** (2.92)	0.022*** (3.19)	0.047*** (3.99)	0.051*** (4.15)	0.005 (1.11)	0.006 (1.41)
<i>Oil &amp; Gas</i> <sub><i>i,t</i></sub>	0.076*** (3.21)	0.073*** (3.01)	0.077*** (3.26)	0.081*** (3.36)	0.010 (1.29)	0.008 (0.96)	0.070*** (3.08)	0.065*** (3.13)
$\ln(\text{Assets})_{i,t-1}$	0.029*** (10.76)	0.029*** (9.78)	0.020*** (9.57)	-0.009 (-0.79)	0.013*** (6.71)	-0.033*** (-2.81)	0.015*** (8.48)	0.011*** (5.93)
<i>Tobin's Q</i> <sub><i>i,t-1</i></sub>	0.015*** (4.23)	0.015*** (4.16)	0.006*** (2.70)	-0.040** (-2.32)	0.013*** (4.43)	-0.081*** (-3.27)	0.000 (0.30)	-0.001 (-0.53)
$\ln(\text{News Articles})_{i,t-1}$	0.012*** (4.51)	0.013*** (4.29)	0.008*** (3.85)	0.021*** (9.35)	0.007*** (3.59)	0.013*** (6.16)	0.005*** (2.81)	0.009*** (4.53)
<i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	-0.037*** (-2.70)	-0.031** (-2.01)	-0.004 (-0.37)	0.006*** (2.71)	-0.029*** (-2.78)	0.014*** (4.34)	-0.011 (-1.25)	-0.012 (-1.61)
<i>IO</i> <sub><i>i,t-1</i></sub>	-0.101*** (-3.68)	-0.116*** (-3.90)	-0.042** (-2.52)	-0.016 (-0.50)	-0.079*** (-3.33)	0.027 (0.73)	-0.023* (-1.85)	-0.006 (-0.46)
<i>ROA</i> <sub><i>i,t-1</i></sub>	0.019 (0.44)	0.032 (0.67)	-0.014 (-0.44)	0.009*** (3.73)	0.021 (0.59)	0.006*** (3.29)	-0.018 (-0.76)	0.009 (0.46)
<i>GRI Standards</i> <sub><i>i,t-1</i></sub>	0.008 (1.11)	0.010 (1.43)	0.002 (0.52)	0.004 (0.68)	0.004 (0.67)	0.001 (0.09)	0.001 (0.17)	0.001 (0.15)
<i>Assurance</i> <sub><i>i,t-1</i></sub>	0.009 (1.11)	0.002 (0.23)	0.010* (1.76)	0.012** (1.96)	0.001 (0.21)	-0.000 (-0.06)	0.004 (0.95)	-0.000 (-0.07)
<i>E&amp;S Comp</i> <sub><i>i,t-1</i></sub>		0.035*** (4.01)						
$\ln(\text{E Disclosure Score})_{i,t-1}$				-0.002 (-0.85)				
$\ln(\text{S Disclosure Score})_{i,t-1}$						0.014** (2.26)		
$\ln(\text{Emissions})_{i,t-1}$								0.010*** (3.20)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	10,957	9,612	10,957	10,218	10,957	10,218	10,957	9,635
Adj. <i>R</i> <sup>2</sup>	0.109	0.116	0.080	0.080	0.079	0.082	0.070	0.074

This table presents OLS regressions at the firm-year level examining the determinants of firms being subject to an E&S-washing allegation. Variables with the subscript *t-1* are measured in the year prior to the dependent variable. We include *E&S Comp* only when the dependent variable is *E&S-Washing* because we cannot separate between E and S compensation metrics. *t*-statistics, reported in parentheses, are based on standard errors clustered by firm. Variables are defined in the Data Appendix. \*, \*\*, \*\*\* indicate statistical significance at the 10, 5, 1% level, respectively.

**Table 6**  
**Stock Market Reaction to E&S-Washing Allegations**

<b>Panel A. Univariate Analysis of Stock Market Reaction</b>							
	Mean	Std. Error	Obs.	<i>t</i> -value	<i>p</i> -value		
	-0.0034***	0.0009	1,122	-3.818	0.000		
<b>Panel B. Regression Analyses</b>							
	<i>Stock Market Reaction<sub>a,i,t</sub></i>						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Material E-Washing Allegation<sub>a,i,t</sub></i>	-0.008*** (-3.77)			-0.005** (-2.36)	-0.005** (-2.43)	-0.005** (-2.30)	-0.006** (-2.46)
<i>Material S-Washing Allegation<sub>a,i,t</sub></i>	0.001 (0.34)			0.000 (0.19)	0.001 (0.22)	0.001 (0.20)	-0.001 (-0.38)
<i>NGO Influence<sub>a,i,t</sub></i>		-0.003* (-1.89)		-0.003* (-1.72)	-0.002* (-1.65)	-0.002* (-1.69)	-0.003* (-1.77)
<i>Stewardship IO<sub>i,t-1</sub></i>			-0.017** (-2.10)	-0.016* (-1.87)	-0.017* (-1.97)	-0.015* (-1.74)	-0.016 (-1.64)
<i>IO<sub>i,t-1</sub></i>				0.006 (0.88)	0.007 (0.92)	0.006 (0.87)	0.008 (0.95)
<i>Ln(Assets)<sub>i,t-1</sub></i>				-0.000 (-0.10)	-0.000 (-0.09)	-0.000 (-0.44)	0.000 (0.08)
<i>Tobin's Q<sub>i,t-1</sub></i>				0.001 (0.66)	0.001 (0.66)	0.001 (0.58)	0.001 (0.37)
<i>ROA<sub>i,t-1</sub></i>				0.003 (0.13)	0.002 (0.09)	0.002 (0.08)	0.001 (0.05)
<i>Ln(News Articles)<sub>i,t-1</sub></i>				0.000 (0.42)	0.000 (0.38)	0.001 (0.78)	0.000 (0.32)
<i>GRI Standards<sub>i,t-1</sub></i>				-0.004* (-1.97)	-0.005** (-2.03)	-0.004* (-1.81)	-0.006** (-2.24)
<i>Assurance<sub>i,t-1</sub></i>				-0.002 (-1.03)	-0.002 (-1.04)	-0.002 (-1.08)	-0.001 (-0.66)
<i>Allegation Sentiment<sub>a,i,t</sub></i>				0.001 (0.27)	0.000 (0.22)	0.001 (0.24)	0.000 (0.09)
<i>Piggybacking<sub>a,i,t</sub></i>				0.002 (0.75)	0.002 (0.84)	0.002 (0.71)	0.003 (0.90)
<i>Ln(E&amp;S Disclosure Score)<sub>i,t-1</sub></i>					0.002 (0.58)		
<i>Prior Negative E&amp;S News<sub>a,i,t</sub></i>						0.000 (0.40)	
<i>E&amp;S Comp<sub>i,t-1</sub></i>							0.000 (0.20)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,118	1,118	1,105	1,040	1,032	1,023	941
Adj. <i>R</i> <sup>2</sup>	0.036	0.025	0.024	0.037	0.036	0.032	0.030

Panel A shows a test of whether the average stock market reaction in the three days around the E&S-washing allegations is different from 0 (calculated from the day before to the day after the publication of the NGO allegation). Panel B provides OLS regressions at the allegation level examining the determinants of the stock market reaction. Variables with the subscript *t-1* are measured in the year prior to the dependent variable. Variables with the subscript *t* are measured contemporaneously with the dependent variable because these are allegation-specific. *t*-statistics, reported in parentheses, are based on standard errors clustered by firm. Variables are defined in the Data Appendix. \*, \*\*, \*\*\* indicate statistical significance at the 10, 5, 1% level, respectively.

**Table 7**  
**Negative News Reaction to E&S-Washing Allegations**

<b>Panel A. Univariate Analysis of <math>\Delta</math> Negative E&amp;S News</b>						
	Mean	Std. Error	Obs.	<i>t</i> -value	<i>p</i> -value	
	0.0525**	0.0255	1,182	2.056	0.040	
<b>Panel B. Regression Analyses</b>						
	$\Delta$ Negative E&S News <sub><i>a,i,t</i></sub>		$\Delta$ Negative E News <sub><i>a,i,t</i></sub>		$\Delta$ Negative S News <sub><i>a,i,t</i></sub>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Material E-Washing Allegation</i> <sub><i>a,i,t</i></sub>	0.279*** (4.05)	0.198*** (3.01)	0.233*** (5.32)	0.174*** (3.74)		
<i>Material S-Washing Allegation</i> <sub><i>a,i,t</i></sub>	0.206** (2.40)	0.210** (2.14)			0.087 (1.12)	0.100 (1.12)
<i>NGO Influence</i> <sub><i>a,i,t</i></sub>	0.026 (0.61)	0.026 (0.59)	-0.025 (-1.01)	-0.022 (-0.79)	0.041 (1.07)	0.017 (0.40)
<i>Prior Negative E&amp;S News</i> <sub><i>a,i,t</i></sub>	-0.748*** (-15.54)	-0.837*** (-17.16)				
<i>Prior Negative E News</i> <sub><i>a,i,t</i></sub>			-0.703*** (-16.22)	-0.760*** (-16.17)		
<i>Prior Negative S News</i> <sub><i>a,i,t</i></sub>					-0.822*** (-16.94)	-0.919*** (-18.41)
<i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	-0.116 (-0.53)	-0.308 (-1.33)	-0.027 (-0.18)	-0.161 (-1.04)	-0.146 (-0.83)	-0.347* (-1.89)
<i>IO</i> <sub><i>i,t-1</i></sub>		-0.249 (-1.24)		-0.002 (-0.01)		-0.350** (-2.00)
<i>Ln(Assets)</i> <sub><i>i,t-1</i></sub>		0.111*** (4.05)		0.045** (2.54)		0.101*** (4.29)
<i>Tobin's Q</i> <sub><i>i,t-1</i></sub>		0.068 (1.49)		0.003 (0.14)		0.074* (1.85)
<i>ROA</i> <sub><i>i,t-1</i></sub>		0.322 (0.53)		0.002 (0.01)		0.015 (0.03)
<i>Ln(News Articles)</i> <sub><i>i,t-1</i></sub>		0.008 (0.32)		-0.003 (-0.18)		0.016 (0.71)
<i>GRI Standards</i> <sub><i>i,t-1</i></sub>		-0.098 (-1.10)		-0.045 (-0.82)		-0.101 (-1.47)
<i>Assurance</i> <sub><i>i,t-1</i></sub>		0.082 (1.27)		0.033 (0.71)		0.082 (1.53)
<i>Allegation Sentiment</i> <sub><i>a,i,t</i></sub>		-0.117** (-2.13)		-0.136*** (-3.93)		-0.074 (-1.51)
<i>Piggybacking</i> <sub><i>a,i,t</i></sub>		0.373* (1.94)		0.148 (0.94)		0.296* (1.77)
<i>E&amp;S Comp</i> <sub><i>i,t-1</i></sub>		0.019 (0.30)		0.040 (0.79)		-0.023 (-0.40)
<i>Ln(E&amp;S Disclosure Score)</i> <sub><i>i,t-1</i></sub>		-0.022 (-0.21)				
<i>Ln(E Disclosure Score)</i> <sub><i>i,t-1</i></sub>				0.012 (0.28)		
<i>Ln(S Disclosure Score)</i> <sub><i>i,t-1</i></sub>						0.088 (0.86)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,170	981	1,170	981	1,170	981
Adj. <i>R</i> <sup>2</sup>	0.326	0.371	0.335	0.364	0.317	0.361

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 positive and statistically different from 0 (calculated from the day before to the day after the publication of the NGO allegation). Panel B presents OLS regression at the allegation level examining the determinants of the change in the number of E&S news articles. Variables with the subscript *t-1* are measured in the year prior to the dependent variable. Variables with the subscript *t* are measured contemporaneously with the dependent variable because these are allegation-specific. *t*-statistics, reported in parentheses, are based on standard errors clustered by firm. Variables are defined in the Data Appendix. \*, \*\*, \*\*\* indicate statistical significance at the 10, 5, 1% level, respectively.

**Table 8**  
**Corporate Media Responses to E&S-Washing Allegations**

	<i>Corporate Press</i>		<i>Press Response</i>		<i>Press Response</i>	
	<i>Response<sub>a,i,t</sub></i>		<i>Resistance<sub>a,i,t</sub></i>		<i>Concession<sub>a,i,t</sub></i>	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Material E-Washing Allegation<sub>a,i,t</sub></i>	-0.032 (-1.28)	-0.030 (-1.12)	-0.011 (-0.48)	-0.010 (-0.44)	-0.021* (-1.67)	-0.020 (-1.37)
<i>Material S-Washing Allegation<sub>a,i,t</sub></i>	-0.014 (-0.54)	0.025 (0.82)	-0.005 (-0.21)	0.023 (0.91)	-0.009 (-0.51)	0.001 (0.07)
<i>NGO Influence<sub>a,i,t</sub></i>	0.066*** (3.40)	0.050** (2.38)	0.026 (1.61)	0.013 (0.77)	0.040*** (2.99)	0.037** (2.54)
<i>Stewardship IO<sub>i,t-1</sub></i>	-0.050 (-0.62)	-0.017 (-0.18)	-0.038 (-0.63)	-0.046 (-0.68)	-0.012 (-0.21)	0.030 (0.46)
<i>IO<sub>i,t-1</sub></i>	-0.086 (-1.14)	-0.129 (-1.36)	-0.030 (-0.40)	-0.064 (-0.76)	-0.057* (-1.93)	-0.065* (-1.82)
<i>Ln(Assets)<sub>i,t-1</sub></i>	-0.013 (-1.46)	-0.022** (-2.02)	-0.010 (-1.14)	-0.019* (-1.80)	-0.003 (-0.58)	-0.003 (-0.43)
<i>Tobin's Q<sub>i,t-1</sub></i>	0.030** (2.12)	0.020 (1.39)	0.014 (1.20)	0.009 (0.82)	0.016** (2.16)	0.011 (1.45)
<i>ROA<sub>i,t-1</sub></i>	-0.371* (-1.93)	-0.338* (-1.70)	-0.269 (-1.50)	-0.310* (-1.82)	-0.102 (-1.04)	-0.027 (-0.27)
<i>Ln(News Articles)<sub>i,t-1</sub></i>	0.012* (1.79)	0.022** (2.37)	0.008 (1.12)	0.017* (1.95)	0.005* (1.82)	0.005 (1.36)
<i>GRI Standards<sub>i,t-1</sub></i>	-0.012 (-0.65)	-0.028 (-1.36)	-0.006 (-0.37)	-0.017 (-0.93)	-0.006 (-0.71)	-0.011 (-1.11)
<i>Assurance<sub>i,t-1</sub></i>	0.007 (0.39)	0.018 (0.88)	-0.008 (-0.52)	-0.001 (-0.07)	0.016 (1.56)	0.019* (1.67)
<i>Allegation Sentiment<sub>a,i,t</sub></i>	0.008 (0.42)	0.015 (0.76)	-0.048*** (-3.58)	-0.048*** (-3.40)	0.055*** (4.04)	0.064*** (4.31)
<i>Piggybacking<sub>a,i,t</sub></i>	-0.124*** (-3.87)	-0.134*** (-4.05)	-0.050** (-2.13)	-0.047* (-1.71)	-0.075*** (-3.05)	-0.087*** (-3.51)
<i>Stock Market Reaction<sub>a,i,t</sub></i>		0.393 (0.93)		0.649 (1.60)		-0.256 (-1.60)
$\Delta$ <i>Negative E News<sub>a,i,t</sub></i>		-0.012 (-0.52)		0.002 (0.07)		-0.014 (-0.91)
$\Delta$ <i>S Negative News<sub>a,i,t</sub></i>		-0.010 (-0.61)		-0.024** (-2.03)		0.014 (1.21)
<i>E&amp;S Comp<sub>i,t-1</sub></i>		0.010 (0.44)		-0.007 (-0.38)		0.017* (1.71)
<i>Ln(E&amp;S Disclosure Score)<sub>i,t-1</sub></i>		0.030 (0.87)		0.051* (1.69)		-0.022 (-1.21)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,115	919	1,115	919	1,115	919
Adj. R <sup>2</sup>	0.037	0.052	0.032	0.063	0.038	0.031

This table presents OLS regressions at the allegation level examining target firm PR responses in the two months following E&S-washing allegations. Variables with the subscript t-1 are measured in the year prior to the dependent variable. Variables with the subscript t are measured contemporaneously with the dependent variable because these are allegation-specific. *t*-statistics, reported in parentheses, are based on standard errors clustered by firm. Variables are defined in the Data Appendix. \*, \*\*, \*\*\* indicate statistical significance at the 10, 5, 1% level, respectively.

**Table 9**  
**Climate-Washing Allegations and Future Carbon Emissions**

	$\Delta Emissions_{i,t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Climate-Washing</i> <sub><i>i,t-1</i></sub>	-0.071*** (-3.04)	-0.055** (-2.25)	-0.054** (-2.12)			
<i>Material Climate-Washing</i> <sub><i>i,t-1</i></sub>				-0.066*** (-2.61)	-0.048* (-1.81)	-0.046* (-1.65)
$\ln(Assets)_{i,t-1}$	-0.004 (-0.84)	0.005 (1.01)	0.007 (1.19)	-0.004 (-0.87)	0.005 (0.98)	0.007 (1.16)
<i>Tobin's Q</i> <sub><i>i,t-1</i></sub>	0.011 (1.46)	0.008 (1.15)	0.008 (1.06)	0.011 (1.45)	0.008 (1.14)	0.008 (1.06)
<i>ROA</i> <sub><i>i,t-1</i></sub>	-0.034 (-0.31)	-0.021 (-0.19)	-0.052 (-0.43)	-0.033 (-0.30)	-0.021 (-0.19)	-0.051 (-0.43)
<i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	0.015 (0.47)	0.018 (0.56)	0.033 (0.95)	0.015 (0.48)	0.018 (0.57)	0.033 (0.96)
<i>IO</i> <sub><i>i,t-1</i></sub>	-0.047 (-1.23)	-0.059 (-1.55)	-0.061 (-1.47)	-0.046 (-1.22)	-0.059 (-1.55)	-0.061 (-1.46)
$\ln(News\ Articles)_{i,t-1}$	-0.003 (-0.70)	-0.002 (-0.55)	-0.002 (-0.50)	-0.003 (-0.71)	-0.002 (-0.56)	-0.002 (-0.51)
<i>GRI Standards</i> <sub><i>i,t-1</i></sub>	-0.002 (-0.22)	-0.002 (-0.15)	-0.001 (-0.10)	-0.002 (-0.21)	-0.002 (-0.14)	-0.001 (-0.09)
<i>Assurance</i> <sub><i>i,t-1</i></sub>	-0.032*** (-2.97)	-0.028*** (-2.60)	-0.024** (-2.10)	-0.032*** (-2.97)	-0.028*** (-2.60)	-0.024** (-2.11)
<i>Emissions Estimated</i> <sub><i>i,t</i></sub>	0.046*** (2.76)	0.045*** (2.71)	0.043* (1.87)	0.046*** (2.77)	0.046*** (2.71)	0.043* (1.87)
$\ln(Emissions)_{i,t-1}$		-0.047*** (-7.55)	-0.047*** (-7.22)		-0.047*** (-7.56)	-0.047*** (-7.24)
$\ln(E\ Disclosure\ Score)_{i,t-1}$			-0.013 (-1.40)			-0.013 (-1.39)
<i>E&amp;S Comp</i> <sub><i>i,t-1</i></sub>			-0.016 (-1.43)			-0.016 (-1.43)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9,016	9,016	7,653	9,016	9,016	7,653
Adj. $R^2$	0.009	0.014	0.016	0.009	0.014	0.016

This table presents OLS regressions at the firm-year level examining the relation between climate-washing allegations and carbon emission reductions. Variables with the subscript  $t-1$  are measured in the year prior to the dependent variable.  $t$ -statistics, reported in parentheses, are based on standard errors clustered by firm. Variables are defined in the Data Appendix. \*, \*\*, \*\*\* indicate statistical significance at the 10, 5, 1% level, respectively.

**Table 10**  
**E&S-Washing Allegations as Catalysts for Institutional Investors**

	$\Delta Emissions_{i,t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Climate-Washing</i> <sub><i>i,t-1</i></sub>	0.010 (0.20)	0.031 (0.59)	0.030 (0.55)			
<i>Climate-Washing</i> <sub><i>i,t-1</i></sub> × <i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	-0.158** (-2.36)	-0.169** (-2.43)	-0.166** (-2.32)			
<i>Material Climate-Washing</i> <sub><i>i,t-1</i></sub>				0.022 (0.38)	0.047 (0.78)	0.047 (0.75)
<i>Material Climate-Washing</i> <sub><i>i,t-1</i></sub> × <i>Stewardship IO</i> <sub><i>i,t-1</i></sub>				-0.163** (-2.18)	-0.177** (-2.28)	-0.175** (-2.18)
$\ln(\text{Assets})_{i,t-1}$	-0.004 (-0.84)	0.005 (1.02)	0.007 (1.20)	-0.004 (-0.87)	0.005 (1.00)	0.007 (1.18)
<i>Tobin's Q</i> <sub><i>i,t-1</i></sub>	0.011 (1.44)	0.008 (1.13)	0.008 (1.04)	0.011 (1.44)	0.008 (1.13)	0.008 (1.04)
<i>ROA</i> <sub><i>i,t-1</i></sub>	-0.033 (-0.30)	-0.020 (-0.19)	-0.051 (-0.42)	-0.032 (-0.30)	-0.020 (-0.18)	-0.050 (-0.42)
<i>Stewardship IO</i> <sub><i>i,t-1</i></sub>	0.016 (0.52)	0.019 (0.61)	0.034 (1.00)	0.016 (0.52)	0.019 (0.62)	0.034 (1.00)
<i>IO</i> <sub><i>i,t-1</i></sub>	-0.047 (-1.23)	-0.059 (-1.56)	-0.061 (-1.48)	-0.046 (-1.22)	-0.059 (-1.55)	-0.061 (-1.47)
$\ln(\text{News Articles})_{i,t-1}$	-0.003 (-0.68)	-0.002 (-0.52)	-0.002 (-0.47)	-0.003 (-0.70)	-0.002 (-0.55)	-0.002 (-0.50)
<i>GRI Standards</i> <sub><i>i,t-1</i></sub>	-0.002 (-0.18)	-0.001 (-0.12)	-0.001 (-0.06)	-0.002 (-0.18)	-0.001 (-0.11)	-0.001 (-0.06)
<i>Assurance</i> <sub><i>i,t-1</i></sub>	-0.032*** (-2.98)	-0.028*** (-2.61)	-0.024** (-2.12)	-0.032*** (-2.98)	-0.028*** (-2.61)	-0.025** (-2.12)
<i>Emissions Estimated</i> <sub><i>i,t</i></sub>	0.046*** (2.77)	0.046*** (2.72)	0.043* (1.88)	0.046*** (2.77)	0.046*** (2.72)	0.043* (1.88)
$\ln(\text{Emissions})_{i,t-1}$		-0.047*** (-7.57)	-0.047*** (-7.25)		-0.047*** (-7.59)	-0.047*** (-7.27)
$\ln(\text{E Disclosure Score})_{i,t-1}$			-0.013 (-1.40)			-0.013 (-1.40)
<i>E&amp;S Comp</i> <sub><i>i,t-1</i></sub>			-0.016 (-1.40)			-0.016 (-1.42)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9,016	9,016	7,653	9,016	9,016	7,653
Adj. <i>R</i> <sup>2</sup>	0.009	0.014	0.016	0.009	0.014	0.016

This table presents OLS regressions at the firm-year level examining whether the relation between climate-washing allegations and carbon emission reductions is stronger when holdings by stewardship institutional investors are greater. Variables with the subscript *t-1* are measured in the year prior to the dependent variable. *t*-statistics, reported in parentheses, are based on standard errors clustered by firm. Variables are defined in the Data Appendix. \*, \*\*, \*\*\* indicate statistical significance at the 10, 5, 1% level, respectively.

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