

Does Money Talk? Market Discipline through Selloffs and Boycotts

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June 2020

Can market discipline affect corporate environmental and social (E&S) policies? Using novel international data on negative news coverage of corporate E&S risks, we show that E&S-conscious investors divest firms with heightened E&S risk. We also find that these firms' sales in E&S-conscious countries decrease. As a consequence of investors' and customers' reactions, firms with more E&S motivated investors and customers experience temporary declines in valuations and subsequently improve their E&S policies. Our results show that investors' divestitures and customers' reduced demand can trigger changes in corporate policies and decrease future negative E&S incidents.

Keywords. Corporate social responsibility; Real effects of financial markets; Institutional investors; Sustainability; Corporate governance; Culture

JEL Codes. G15, G23, G30, M14

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Policy discussions often consider market discipline as a way to achieve a more environmentally and socially sustainable economy. The argument goes as follows. Investors and customers alike are concerned with more than just stock returns and product quality or prices; they have ethical and social preferences and may be willing to pay for firms to meet their standards.¹ As a consequence, investors and customers are expected to vote with their wallets and to spurn firms that fall short of their expectations on environmental and social (E&S) norms. In turn, their behavior is expected to affect firms' cost of capital and ability to invest (Pastor, Stambaugh, and Taylor, 2019). If firms are able to learn from stock prices, they may react by improving their E&S policies to repair their reputations and to gain competitiveness.

However, market discipline is only effective if the combined impact of investors' and customers' actions is large enough to affect firms' valuations. In addition, even if firm valuations were temporarily affected, managers who are rewarded for long-term profitability may lack incentives to improve corporate E&S policies (Davies and Van Wesep, 2018). Instead, managers may rely on investors' limited attention or memory and expect them to quickly go back to demanding the firm's stock following a negative shock to its reputation on E&S policies. Customers may also quickly forget an E&S incident and go back to purchasing the firm's products. Thus, even a temporary backlash may not result in changes in firm policies, potentially limiting the effects of market discipline.

Apart from surveys and anecdotes, we lack large-scale evidence about whether shareholders and customers can exert market discipline and trigger changes in corporate behavior. Existing evidence shows that significant shareholders, typically large institutional investors, are

¹ For instance, in a 2018 investor survey, 43% of respondents incorporate ESG factors in their decision making, up from 22% in 2013 (see <https://www.callan.com/wp-content/uploads/2018/07/Callans-2018-ESG-Survey.pdf>). Similarly, numerous anecdotes about product boycotts suggest that customers care about firms' ESG standards.

able to negotiate improved E&S policies with management. Little is known about whether investors and customers can impose market discipline with their purchasing behavior.

This lack of evidence largely reflects the difficulties of capturing investors' and customers' discontent with firms' E&S policies and its consequences. We overcome this obstacle by using a novel dataset, which monitors environmental, social, and governance (ESG) business conduct risks and company-specific violations of internal policies and international standards for listed companies around the world. The data provider screens daily over 80,000 media, stakeholder, and third-party sources, including print and online media, NGOs, government bodies, regulators, think tanks, newsletters, social media (e.g., Twitter), blogs, etc. We thus capture changes in investor discontent using increased company-specific media coverage of violations of internal or external ESG standards and heightened ESG risks. Importantly, we are also able to isolate E&S risks from broader firm governance risks and to focus on the former.

We then explore how investors with different E&S preferences react to heightened E&S risks. We measure investors' preferences by either cultural attitudes towards E&S issues in the investors' countries of origin or their investment portfolios' sustainability ratings. We show that E&S-conscious investors tend to sell firms experiencing heightened E&S risks. Theoretically, different realizations of E&S risks can either provide information about the firm's fundamentals or reduce E&S-conscious investors' non-pecuniary benefits from holding the firm's stock. To isolate the effect of the latter, we explore how investors with different E&S concerns trade in the same company at a given point in time. We find that E&S-conscious investors decrease their shareholdings in firms experiencing heightened E&S risks to a larger extent than investors that are less concerned about E&S issues, suggesting that our results are not driven by firm-specific shocks. Ownership by non-E&S-conscious investors actually increases, thus confirming that E&S

preferences matter. We also find that the sales of firms experiencing heightened E&S risks decrease in countries with stronger pro-E&S attitudes. Our interpretation that changes in investor and customer behavior are largely driven by preferences is also confirmed by the finding that there is no significant decline in demand from either E&S-conscious investors or E&S-conscious customers following negative firm news unrelated to corporate E&S policies.

Having established that investors and customers with different E&S preferences react in different ways to heightened E&S risk, we ask whether firms whose investor and customer bases have stronger pro-E&S attitudes also respond differently. We show that negative realizations of E&S risks trigger larger negative abnormal returns in firms with more E&S-conscious investors and customers. However, the drop in valuations is temporary and firms' investment does not decrease.

We provide evidence that following an increase in their E&S risk, firms with more E&S-conscious investors and customers improve their E&S policies, as captured by future negative E&S incidents, ESG ratings, carbon intensity, and employee controversies. Notably, the effects on the firms' E&S policies appear to be largely driven by investors rather than customers, suggesting that the demand for a firm's stock is the primary driver of market discipline. We also show that our results are not simply due to the presence of E&S-conscious blockholders, who engage with firms to improve their E&S policies. Through their purchasing decisions, even smaller investors can affect companies' behavior. Overall, our results suggest that market discipline is effective and that enhanced disclosure of E&S risks can improve the E&S policies of companies with more E&S-motivated investors and customers.

This paper contributes to a growing literature exploring how institutional investors affect firms' E&S policies. Existing work highlights that large blockholders can engage with companies'

management and pressure for changes in corporate ESG policies (e.g., Dimson et al., 2015 and 2018; Starks et al., 2018; Krueger, Starks, and Sautner, 2019; Chen, Dong, and Lin, 2019; Naaraayanan, Sachdeva, and Sharma, 2020). E&S-conscious investors also select companies with higher E&S ratings (Dyck et al., 2019), suggesting that there is positive screening. We ask whether investor discontent translates into market discipline. Specifically, we show that agents' purchasing and selling decisions can also have social impact. To the best of our knowledge, we are the first to document that investors' exits can affect corporate E&S policies. Our results show that secondary financial markets have real effects not only on investment policies, as shown by a growing literature (Bond, Goldstein, and Edmans, 2012), but also on E&S policies. In particular, firms appear to learn from stock prices about their investors' preferences and adjust their policies accordingly.

We also contribute to a strand of the literature exploring how investor preferences affect stock prices. Theoretically, Heinkel, Kraus, and Zechner (2001), Pastor, Stambaugh, and Taylor (2019), and Pedersen, Fitzgibbons, and Pomorski (2019) study how firms' ESG standards are related to stock returns when investors have heterogeneous E&S preferences. Theory suggests that if investors have strong E&S preferences, companies with weak E&S policies should have a higher cost of capital. The empirical evidence is, however, mixed. On the one hand, Edmans (2011) and Albuquerque, Koskinen, and Zhang (2019) show that strong E&S policies increase profitability and stock returns. On the other hand, Hong and Kacperczyk (2009) and Bolton and Kacperczyk (2019) show that companies that violate E&S norms have to provide investors with higher returns and that the effects are more pronounced in countries with stronger E&S norms, where investors underweight these stocks. Consistent with this evidence, institutional investors with stronger pro-E&S motives have been shown to have lower risk-adjusted performance (Riedl and Smeets, 2017;

Barber, Morse, and Yasuda, 2018). While it demonstrates that investors' E&S preferences matter, this work is silent on whether investors can affect corporate policies. We explore how investors' and customers' reactions to heightened E&S risks impact corporate valuations and policies.

Finally, a more recent strand of the literature considers the effects of E&S motivated customers. Dai, Liang, and Ng (2019) show that customers engage with their suppliers to improve their ESG policies. Aghion, Benabou, Martin, and Roulet (2020) show that in competitive markets, firms attempt to attract customers with stronger E&S concerns by adopting greener technologies. We explore how firms' sales in countries with different E&S norms change following negative E&S risk and how these are related to subsequent changes in corporate policies.

1. Data and Descriptive Statistics

1.1 Measuring E&S Risk

RepRisk is a leading business research provider, specializing in measuring ESG-related business conduct risks. RepRisk serves the world's largest investors and provides its clients with intelligence on any adverse information about companies' business conduct regarding environmental degradation, child labor, corruption, and other similar risks.

RepRisk screens daily over 80,000 media, stakeholders, and third-party sources, including print and online media, NGOs, government bodies, regulators, think tanks, newsletters, social media (e.g., Twitter), blogs, etc., for news related to firms' ESG practices. Starting from 2007, RepRisk compiles daily updates of negative news counts of company-specific issues. A given incident is counted only once, and its reach is classified based on the most influential source in

which it appears. News may capture actual violations or enhanced risk of potential future violations.² For simplicity, we refer to such news as risks.

Based on primary ISINs, RepRisk covers 10,171 (non-financial) firms around the world. News is classified into 28 distinct issues, including pollution, poor employment conditions, discrimination, child labor, supply chain, etc. These issues are further subdivided into 45 topics such as asbestos, land grabbing, forest burning, negligence, coal-fired power plants, etc. In addition, news is designated as high, medium and low severity, as well as high, medium and low reach, based on whether it has been distributed in specialized blogs, national or international media outlets. The classification into issues and topics is performed following a proprietary methodology that combines artificial intelligence and human analysis in 15 different languages.

RepRisk provides information on firms' ESG risks in several different ways. First, it aggregates news by type for each firm over each month. Since most of our other data sources have quarterly or annual frequency, we use this file in most of our tests. Second, RepRisk also provides daily news about firms' ESG risks, which we exploit to verify that the news is consequential for firm valuations. Finally, using a moving average of past news, RepRisk computes a RepRisk index that captures the extent to which a company is exposed to ESG risk. The index uses a proprietary algorithm, ranges between 0 and 100, and takes into account news involving ESG risks over a maximum of two years.

Panel A of Table 1 provides summary statistics for our measures of E&S risk based on counts of different categories of RepRisk news. In the empirical analysis, we separate E&S from governance news and control for past governance news to focus explicitly on firms' E&S risk exposure. Since institutional investors' shareholdings are available at the quarterly frequency, we

² Capturing risk and uncertainty with textual analysis is a well-established practice. See, for instance, Baker, Bloom, and Davis (2016) and Hassan, Hollander, van Lent, and Tahoun (2019).

count the E&S news released over a quarter. Severe and high reach news is fairly infrequent, with over 90% of quarterly firm observations without such risk coverage. Negative coverage of firms' social policies appears to be more intense than negative coverage of their environmental and governance issues.

Table A1 in the Appendix shows the frequency of the issues and topics of the news covered by RepRisk. This news is seldom about dramatic events, such as the BP Gulf of Mexico oil spill, which are infrequent by their very nature. Rather, RepRisk news captures violations of national regulations or international standards, poor employment conditions and discrimination, tax evasion, etc. This negative news can be an early warning for investors and customers.

Interestingly, similar to the political risk indicator constructed by Hassan, Hollander, van Lent, and Tahoun (2019), the ESG risks captured by RepRisk primarily reflect idiosyncratic firm shocks. If we regress the natural log of the number of firm-level monthly news on interactions of country and time, time and industry, or even interactions of country, industry and time fixed effects, the R-squared remains less than 10 percent. Country factors, with an R-squared of 3 percent, appear somewhat more relevant in explaining RepRisk news realizations than industry factors (whose R-squared is 2 percent).

1.2 Ownership Data and the Classification of Institutional Investors

We obtain ownership data from FactSet LionShares. The pressure on institutional investors to take into account E&S issues varies with the ESG preferences of their clients and beneficiaries. Since these are largely in the institutions' home countries, the domestic E&S norms should be reflected in the investors' preferences. For this reason, we classify institutional investors using the cultural values in their countries of origin, which we obtain from the World Value Survey (WVS).

The WVS is a unique data source for analyzing trends in social, political, and cultural values around the world. The survey currently covers about 80 countries and is updated every five years. It consists of a detailed questionnaire (of about 250 questions) administered in face-to-face interviews; the average number of respondents is 1,400 per country. Importantly for our purposes, individuals are surveyed about their attitudes towards the environment and their willingness to do volunteer work, make donations, and participate in demonstrations in support of E&S causes.

While not all questions are asked in each country in all survey rounds, answers to survey questions tend to cluster in a coherent pattern (Inglehart, 1997; Inglehart and Baker, 2000). Attitudes towards E&S issues are effectively summarized by the survival/self-expression factor. Survival values are prevalent in societies that do not support gender equality, human rights, and environmental protection. The opposite is true in countries that value self-expression. We surmise that investors in countries that value self-expression care more about E&S policies.

We consider institutional investors from countries with a WVS survival/self-expression factor in the top tercile as having strong preferences in favor of E&S issues. We refer to these investors as E&S-conscious (High ENV). We view investors from other countries as less concerned about E&S issues (Low ENV). Table A2 lists the self-expression scores of the countries in our sample and our classification of investors as E&S-conscious.

Panel B of Table 1 describes institutional ownership in our sample of firms. Ownership by institutions in High ENV countries appears to be much larger than ownership by institutions in Low ENV countries. Put differently, most institutional investors appear to be E&S-conscious. This is expected because affluent countries care more about E&S issues. Thus, countries with highly developed asset management industries and more institutional owners are more likely to be classified as High ENV.

For this reason, we evaluate the robustness of our results to the use of an alternative classification of institutional investors based on the sustainability of their portfolio holdings. We use a methodology inspired by Morningstar's sustainability ratings. First, we consider funds that over the past two years, have held at least 50 percent of their portfolio value in firms with Thomson Reuters' ASSET4 ESG ratings. Approximately 80% of the institutional investors in our sample fit this description. For these funds, we average the ESG ratings of the rated companies held over the previous two years. We set the average ESG rating equal to zero for the remaining funds. According to this alternative definition, we define funds with average portfolio ESG ratings in the top tercile as E&S-conscious (*High Rating IO%*) and the remaining funds as non-E&S-conscious (*Low Rating IO%*). As is evident from Panel B of Table 1, this classification has not only more variation but also a low correlation with the first definition based on country culture. Thus, the two definitions capture independent variations in E&S preferences.

1.3 Customer Sales Distribution

We also consider how sales to customers with different social preferences are affected by E&S risk. We use FactSet Revere data on firms' geographical composition of sales. We define sales to countries with high and low sensitivity to E&S issues using the World Value Survey, following the same approach we use to classify institutional ownership. Panel C of Table 1 describes the sales to High ENV and Low ENV countries.

Sales are more homogenously distributed between High ENV and Low ENV countries than institutional ownership. Also, confirming that the geography of institutional ownership and the market for a firm's products do not fully overlap, the correlation between High (Low) ENV institutional ownership and High (Low) ENV sales is 54% (46%).

1.4 Other Data

We use several data sources to evaluate firms' outcomes. First, we obtain stock prices and other financial data from Datastream/Worldscope. Second, we evaluate changes in firms' E&S policies using annual Thomson Reuters' ASSET4 ESG ratings. Analysts at Thomson Reuters evaluate firms' environmental policies in three subcategories: Emission Reduction, Product Innovation, and Resource Reduction. Social performance is assessed in seven subcategories: Community, Diversity & Opportunity, Employment Quality, Health & Safety, Human Rights, Product Responsibility, and Training & Development. Within each subcategory, ASSET4 analysts consider specific items, such as "Does the company set specific objectives to be achieved on emission reduction?". Based on the responses, for each covered firm, ASSET4 constructs a proprietary annual score ranging from 0 to 100 for each of the ten subcategories listed above.

Third, we obtain ratings on carbon intensity trends and employee-related controversies/incidents from Sustainalytics. Finally, we use Ravenpack to explore how institutions react to general negative media coverage. We exclude news on ESG policies³ and count firm-specific negative news, which we define as news with Ravenpack event sentiment score below 25, i.e., extremely negative sentiment. The correlation between negative news from Ravenpack and E&S News (or Total News) from RepRisk is only 16%. Panel D of Table 1 summarizes the main variables from Datastream, Ravenpack, Sustainalytics, and Thomson Reuters ESG.

1.5 Characteristics of Firms with More RepRisk News Coverage

Our final dataset covers 6,919 firms in 33 countries from 2007 to 2016. In this subsection, we explore the characteristics of firms for which we observe more frequent negative realizations

³ Ravenpack offers limited coverage of corporate social responsibility news (e.g., only 459 companies have such coverage).

of E&S risk. On the one hand, these could be firms with worse E&S policies, which are more likely to experience incidents, and therefore, negative media coverage. On the other hand, media coverage tends to cater to the interests of readers (Mullainathan and Shleifer, 2005). Since the processing of information about E&S issues is known to be ideologically motivated (Kahan, 2013), it would not be too surprising if firms with more E&S-conscious shareholders and customers experienced more E&S news coverage in RepRisk.

Table 2 shows that firms with more E&S-conscious institutional ownership and higher sales to E&S-conscious countries have higher RepRisk news counts. Also, consistent with the idea that the E&S policies of some firms attract more attention, firms with higher Thomson Reuters' ASSET4 ESG ratings during the previous year have more news coverage in RepRisk. Thus, firms experiencing heightened E&S risk in our sample do not have worse E&S policies. Rather, investors' and customers' interest in firms' E&S policies generates higher news coverage in RepRisk.

This interpretation is also supported by the observation that while firms with higher Thomson Reuters' ASSET4 ESG ratings are more likely to be covered in RepRisk, they do not have a higher proportion of severe E&S news. Ownership by E&S-conscious investors is unrelated to the severity of the news, whereas the percentage of sales to E&S-conscious countries is positively but only marginally related to severe E&S news.

We also find that firms with more frequent E&S news coverage are larger and have more tangible assets, but lower profitability (ROA). In what follows, we control for these and other firm characteristics and explore cross-sectional differences in the effects of E&S risk on firms whose investors and customers have different preferences for E&S policies.

2. Empirical Strategy

Our objective is to establish whether E&S preferences affect investors' and customers' behavior and whether their behavior in turn influences firms' policies. In this section, we present a roadmap of the hypotheses we test to answer these questions. We defer the discussion of the empirical models and methodological challenges to later sections in which we present the empirical evidence.

Negative realizations of E&S risk can affect firms' fundamentals not least because – as we also posit – E&S risk can hurt firms' product market. Hence, E&S risk may matter for investment decisions independently from the investors' non-pecuniary preferences. Any effects of E&S risk through firms' fundamentals should affect investors similarly, irrespective of their preferences. If E&S preferences indeed affect shareholders' non-pecuniary benefits, we should observe a disproportionate decrease in the holdings of E&S-conscious investors in a given firm following negative realizations of E&S risk. Thus, in the first part of our analysis, we compare investor behavior in the same firm, which helps us to evaluate whether non-pecuniary preferences indeed matter. We also investigate whether following negative realizations of E&S risk, firms experience a larger decline in sales to countries with stronger E&S preferences, suggesting consumer backlash.

In the second part of the analysis, we aim to evaluate whether investors' and customers' actions affect firms in a way that is consistent with market discipline. For this to be the case, we should observe that the behavior of E&S-conscious investors and customers magnifies the effects of negative realizations of E&S risk on firms' valuations and that firms change their policies to avoid more dire consequences. Thus, holding constant the intensity of the negative realizations of E&S risk, we test whether firms that suffer larger decreases in the demand for their stock by E&S-

conscious investors experience more negative abnormal returns when news about E&S risk is reported. We also test whether this is the case for firms with ex-ante more sales to E&S-conscious countries.

In the final part of our analysis, we explore whether firms that are more exposed to E&S risk realizations due to a particularly E&S-conscious investor or customer base change their E&S corporate practices. On the one hand, the behavior of E&S-conscious investors and customers may serve as an early warning and motivate firms to improve their E&S policies in order to re-establish their reputations to avoid even worse consequences in the future. On the other hand, managers may rely on customers' and investors' limited attention or memory and just wait to 'get out of the storm' without improving their E&S policies. Thus, to evaluate empirically whether investors' and customers' reactions discipline firms, we explore how the policies of firms with more E&S-conscious investors and customers vary with negative realizations of E&S risk, holding the intensity of the latter constant.

3. Do Investors and Customers React to Environmental and Social Risk?

3.1 Institutional Ownership

We explore how the composition of institutional ownership is affected by news uncovering negative developments about a firm's E&S policies. We perform two types of tests. First, we regress the percentage of shares owned by institutions with different E&S preferences in firm f at the end of quarter t on the (natural log) of the number of news about E&S risk issues:

$$IO_{ft}^{type} = \alpha + \beta \times E\&S\ Risk_{ft} + \gamma \mathbf{X}_{ft} + \delta_f + \xi_t + \varepsilon_{ft},$$

where *type* refers to our different definitions of E&S-conscious and other investors. In all regressions, we include firm (δ_f) and time (ξ_t) fixed effects, and a host of firm controls (\mathbf{X}_{ft}),

including market value, cash holdings, dividend yield, asset tangibility, return on assets, leverage, average return over the previous year, concentration of institutional ownership, Thompson Reuters ESG rating, and an indicator variable for whether the firm has such a rating.

Thus, a negative coefficient on $E\&S\ Risk_{ft}$ captures whether in quarter t , in which a firm experiences more negative E&S coverage, ownership by E&S-conscious or other investors is below the firm's average institutional ownership over the sample period. This timing implicitly assumes that investors' sales occur in the same quarter as the negative news coverage. Such an assumption is supported by the evidence in Panel A of Figure 1, which shows that E&S-conscious investors dramatically decrease their holdings following negative realizations of E&S risk.

In Table 3, we separately consider the ownership of institutional investors from countries designated as having high versus low E&S concerns. In Panel A, the dependent variable is the percentage of shares outstanding held by institutional investors from E&S-conscious countries – *High ENV IO%*. The percentage of institutional ownership by E&S-conscious investors in a firm decreases in quarters in which there is more negative news coverage of its E&S related activities.⁴ The effects are robust when we use different proxies, such as *Total News*, *High Reach News*, and *Severe News*, and when we concentrate separately on E&S risk, controlling for past news about the firm's governance. Thus, the effect of E&S risk on institutional ownership does not appear to be driven by negative governance news. This effect is not only statistically but also highly economically significant. For example, in column 1, an average number of news is associated with a drop in ownership by E&S-conscious investors of 12.5%, relative to the within-firm standard deviation of *High ENV IO%*.⁵

⁴ The effect of negative E&S risk realizations on overall institutional ownership mirrors the results we present on *High ENV IO%*. This effect does not appear to be reversed in the subsequent quarter (see Table A3).

⁵ The economic magnitude is calculated as $-0.095 \cdot \ln(1+45)/2.9$, where the average (quarterly) number of news for firms with non-zero news is 45 and the within-firm standard deviation of *High ENV IO%* is 2.9.

To be able to properly interpret the results in Panel A, we need to consider that negative coverage of firms' ESG policies may be capturing fundamentals, rather than an increase in the discontent of E&S-conscious investors. Panel B shows that investors from countries that favor E&S policies to a lesser extent – labeled as *Low ENV IO%* – increase their shareholdings in companies experiencing heightened E&S risk.⁶ This evidence indicates that fundamentals are unlikely to explain the changes in ownership we observe. Using our alternative classification of E&S-conscious investors below, we further confirm this interpretation.

Table 4 repeats the tests in Table 3 using the second definition of E&S-conscious investors based on the sustainability ratings of the investors' portfolio holdings (*High Rating IO%*). Consistent with our earlier results, Panel A shows that investors that hold portfolios with high sustainability ratings react to heightened E&S risk by reducing their shareholdings. This effect is highly significant, both statistically and economically. In column 1, an average number of news is associated with a drop in institutional ownership by E&S-conscious investors of 22.3%, relative to the within-firm standard deviation of *High Rating IO%* (4.7).

The opposite is true in Panel B for investors whose portfolios have low or no sustainability ratings. Thus, non-E&S-conscious investors increase their holdings in firms that experience higher E&S risk, partially offsetting the decrease in institutional ownership by investors with high ESG-rated portfolios. The differential effects of E&S risk on investors with different E&S preferences suggest that divestitures are driven by discontent with firms' E&S policies, rather than negative expectations about the firms' future performance.

⁶ Note that this effect is not mechanical because firms' shares are also held by other shareholders that we do not observe. Thus, a negative realization of E&S risk results in an overall drop in institutional ownership, which is only partially offset by the increase in the ownership of non-E&S-conscious investors.

To validate this interpretation of the empirical evidence, in Panel A of Table 5, we consider how investors trade around negative realizations of E&S risk. Importantly, we include interactions of firm and quarter fixed effects to absorb firm-specific shocks. We find that investors with high ESG-rated portfolios systematically decrease their holdings in companies experiencing negative E&S risk realizations, relative to investors with low ESG-rated portfolios. This demonstrates that our results are not driven by firm-specific shocks. Rather, the evidence suggests that negative E&S risk realizations differentially affect the non-pecuniary benefits of investors with different preferences, leading to the observed portfolio reallocations.⁷ Interestingly, as we show in Table A4, we observe no differences in trading between domestic and foreign investors, conditional on their E&S preferences. This suggests that our results are not due to investors' being over-exposed to news coverage of domestic companies.

We also consider whether our classification of E&S-conscious investors may be reflecting differences in trading styles. If we were just capturing that some investors are more responsive to negative news, we should observe that institutions with strong preferences towards E&S issues react more to all news, not only to news related to E&S risks. On the contrary, Panel B of Table 5 shows that general negative news coverage of a company is associated with an increase in the shareholdings of institutions from E&S-conscious countries, probably because stock prices over-react and managers purchase underpriced stocks. Also, investors with sustainable portfolios and other investors appear to have opposite reactions to general news, compared to their reactions to news on enhanced E&S risk. Thus, the patterns in institutional ownership we highlight are unlikely

⁷ In unreported specifications, we also include dummies for the investor's country of origin interacted with quarter fixed effects. The robustness of our results confirms that differences in trading behavior are not driven by country-level attributes (e.g., macro-economic conditions) other than the investors' E&S preferences.

to be driven by investors' general reactions to negative news coverage and more likely to capture investor preferences on E&S issues.

3.2 Sales Composition

E&S-conscious customers are also likely to care about the policies of the firms that produce the goods they purchase. This behavior can affect not only firms that sell final products but also firms selling intermediate goods because companies in E&S-conscious countries are likely to have more E&S-conscious investors and customers.⁸ Since ESG ratings, and more generally, a firm's reputation are affected by the E&S policies of the firm's suppliers, customers in E&S-conscious countries may reduce their dependence on suppliers with higher E&S risk.

For this reason, we explore how a firm's sales in countries with different E&S preferences vary with negative news coverage of the firm's E&S policies, using an empirical model analogous to the one we use to study changes in institutional ownership. The plot in Panel B of Figure 1 supports the timing of the effects; sales in E&S-conscious countries evolve similarly across firms until the negative realization of E&S risk, but then drop dramatically for the firms that experience such heightened E&S risk.

Panel A of Table 6 shows that (the natural log of) sales to E&S-conscious countries decrease(s) in years with more negative E&S news.⁹ This effect is economically significant; in column 1, an average number of news is associated with a drop in firm sales to E&S-conscious countries of 3.3%, relative to the within-firm standard deviation of Ln Sales from High ENV

⁸ Local biases shape the geography of investment and sales (Bernard, Moxnes, and Saito, 2019).

⁹ The unit of observation in these specifications is firm-year.

Countries.¹⁰ Consistent with the conjecture that customers' preferences matter, in Panel B, we do not find any effect of changes in E&S risk on firm sales to less E&S-conscious countries.

Table 7 performs a placebo test. It explores how the proportion of sales to E&S-conscious countries varies with general negative news about a firm. To the extent that E&S-conscious countries are wealthier, customers in these countries may be more concerned about product quality. Thus, their demand may drop to a larger extent if concerns about a firm's reputation arise, regardless of whether these concerns are due to E&S issues. In column 1, we do not find any evidence that E&S-conscious customers respond differently to firms' general negative news coverage. While the proportion of sales to High ENV countries is unaffected, in column 2, we observe a drop in the sales of firms with negative news coverage. Thus, all customers appear to be concerned about firms' reputational risk, but only E&S-conscious customers react to heightened E&S risk, confirming our conjecture that their preferences on E&S issues matter.

Overall, these results indicate that consumers and investors vote with their wallets in an attempt to impose their social preferences on the firms they transact with. In what follows, we ask whether the reactions of E&S-conscious investors and customers are large enough to affect firm valuations and discipline corporate policies

4. Do E&S-conscious Investors and Customers Affect Stock Prices?

Firms' cost of capital as well as managers' compensation and job security depend on corporate valuations. Thus, investors' divestitures and consumers' backlash can provide market discipline if they affect stock prices. Even if the negative news coverage we exploit does not reflect

¹⁰ The economic magnitude is calculated as $-0.072 \cdot \ln(1+86)/9.54$, where the average (annual) number of news for firms with non-zero news is 86 and the within-firm standard deviation of Ln Sales from High ENV Countries is 9.54.

dramatic events, the managers of firms with more E&S-conscious investors and customers may change their corporate policies to prevent worse long-term consequences and further price drops.

We explore how E&S risk affects stock returns and how this relation depends on the reactions of E&S-conscious investors and customers, holding constant the intensity of E&S risk. In Table 8, we perform an event study around negative news coverage of E&S risk. In particular, we compute firms' daily abnormal returns either by subtracting the market return or as the residuals of a Fama and French (1993) three-factor model, estimated over the 252 days before the event. We then cumulate abnormal returns from one day before to one day after the news coverage. The univariate evidence in Panel A of Table 8 clearly shows that firms experience negative short-term abnormal returns around the realizations of E&S risk, demonstrating the relevance of these occurrences.

In Panel B of Table 8, we investigate the cross-sectional determinants of firms' stock price responses to heightened E&S risk. In particular, we test whether firms with larger ownership by E&S-conscious investors or firms with larger sales in E&S-conscious countries experience more negative abnormal returns. To ease the interpretation, we define dummy variables that equal one if a firm is in the top quintile for ownership by E&S-conscious investors or sales in E&S-conscious countries. The parameter estimates are obtained including time, industry and country fixed effects and a wide range of firm-level controls.

Firms with more E&S-conscious investors and customers have more negative stock price reactions when they experience negative realizations of E&S risk, which is especially true if we consider high reach or severe news. Both ownership by E&S-conscious investors and sales in E&S-conscious countries are statistically significant when included together in the case of more pronounced realizations of E&S risk. In addition, this result is robust to both definitions of E&S-

conscious investors and indicates that the market anticipates the independent effects of both investors' selloffs and customers' backlash.

In terms of economic magnitudes, the estimates in column 4 (column 5) of Panel B, focusing on severe or high reach news, imply that a firm with *High ENV IO%* (*High Rating IO%*) experiences 0.23% (0.22%) lower three-day market-adjusted returns. Similarly, a firm with *High ENV Sales* (column 5) experiences 0.22% lower three-day market-adjusted returns. We obtain similar results when we use the Fama-French three-factor model as the benchmark. These results suggest that the behavior of investors and customers can inflict punishment on firms when there are negative realizations of E&S risk.

Interestingly, the coefficient on the firm's ESG rating (which we do not present in Panel B for brevity) is not significantly related to the stock price reaction triggered by negative E&S risk. This indicates that while corporate social responsibility may be able to shield firms from shocks unrelated to E&S policies (Lins, Servaes, and Tamayo, 2017; Hong, Kubik, Liskovich and Scheinkman, 2019), these mitigating effects are not present when the firm's reputation on E&S policies is at risk.

In Panel C, we consider firms' abnormal returns in the year following the negative news coverage to evaluate whether the negative effects on firms' valuations are persistent. We compute firms' monthly abnormal returns as the residuals of a Fama and French (1993) three-factor model, estimated over the 36 months before the event, and report the average abnormal monthly return over the 12 months including the event. The results show that the punishment inflicted by investors and customers is temporary, as we find no differences in long-term returns for firms with more E&S-conscious investors and customers, following the negative realizations of E&S risk. Thus,

the larger temporary price drops for firms with more E&S-conscious investors and customers appear to be fully reversed in the months after the negative realizations of E&S risk.

This evidence raises concerns that the effects of market discipline may be limited. It is also possible, however, that investors' divestitures and customers' backlash affect firms' valuations and act as an early warning even for firms experiencing relatively less severe E&S risks. Firms may act upon these early warnings and change their subsequent E&S policies in an attempt to repair their reputations and reverse the negative impact. Notwithstanding the temporary price effects, if we observed that companies that experience larger price drops improve their future E&S policies, we would be able to conclude that market discipline is effective.

5. Effects of Investors' and Customers' Backlash on Corporate Policies

In this section, we explore the long-term effects of investors' and customers' behavior on corporate policies. If market discipline were effective, firms with E&S-conscious investors and customers, experiencing larger temporary drops in stock prices, should improve their policies to a larger extent to avoid long-term consequences.

We test these hypotheses by estimating reduced-form regressions in which we relate measures of corporate policies at $t+1$ to our RepRisk measures of E&S risk at t and investors' and customers' E&S preferences at $t-1$. To ease the interpretation, as in the earlier tests, instead of continuous variables, we define dummy variables that equal one if a firm is in the top quintile for ownership by E&S-conscious investors or sales in E&S-conscious countries. In Panel A of Table 9, we do not find that firms more exposed to investors' and customers' backlash reduce their investment following negative realizations of E&S risk. This is consistent with the evidence in Panel C of Table 8 that there are no permanent effects on firms' valuations and cost of capital. In

fact, firms with more E&S-conscious institutional owners invest more, suggesting that they may take actions to improve the sustainability of their policies. The rest of Table 9 provides evidence in this direction.

In Panel B, we consider a firm's Thomson Reuters ESG score at $t+1$. Companies that experience heightened E&S risk and have ex-ante more E&S-conscious investors and customers improve their ESG ratings over the next year. These effects are not only statistically but also highly economically significant. In column 1 (column 2), firms with an ex-ante higher proportion of E&S-conscious investors improve their ESG ratings by 3.1 (3.3) points (relative to the within-firm standard deviation of 11.5) following an average increase in E&S risk (equal to $\ln(0.87)$). In column 3, firms with a higher proportion of sales in E&S-conscious countries experience an improvement in ESG ratings by 1.8 points.

Importantly, Panel C of Figure 1 shows that there are no differences in the evolution of CSR ratings between firms with more E&S-conscious investors and other firms before the negative realization of E&S risk. Firms with more E&S-conscious investors start improving their CSR ratings to a larger extent only after experiencing the negative shocks, suggesting that the price effects triggered by investors' sales indeed affect corporate policies.

We obtain this result controlling for a wide-range of firm characteristics. In particular, one may wonder whether firms always react to poor performance by improving their ESG policies, perhaps to maintain or gain investors' trust. For this reason, we control for the firm's average stock returns over year t . This control (coefficient not reported) does not appear to be systematically related to the firm's ESG policies and, in fact, its effect is negative, refuting this alternative explanation.

The improvements in future ESG policies also appear to depend on customers' and investors' backlash rather than the firm's initial ESG rating, as all results include firm fixed effects. Firm fixed effects also capture systematic differences in E&S policies related to the firms' countries of origin, industries, and their legal environment (Liang and Renneboog, 2017). Thus, our results suggest that firms use their ESG policies to repair their reputation following negative realizations of E&S risk.

ESG ratings provided by different agencies, albeit positively correlated, are often in disagreement because rating agencies focus on different attributes, measure them differently, or construct the final scores by aggregating attributes using different weights (Berg, Koelbel, and Rigobon, 2019). Firms could also manipulate ratings. For this reason, we consider a range of proxies for E&S policies, including an event-based measure of firm-level negative ESG incidents, based on RepRisk. As Li and Wu (2020) argue, the frequency of negative ESG events cannot be manipulated because it depends on past news coverage. Accordingly, in Panel C, we report tests using the RepRisk index to assess ESG risk. It is comforting that the estimates confirm the results in Panel B. In the year following negative news coverage of E&S risks, firms with more E&S-conscious investors improve their E&S policies to a larger extent, as captured by a reduced RepRisk index. The results appear weaker for E&S-conscious customers, as we do not find statistically significant effects for firms with ex-ante more sales in E&S-conscious countries, once we consider ownership by E&S-conscious investors.

While the RepRisk index reflects negative ESG incidents, in Panels D and E, we attempt to capture actual improvements in firms' policies by using the Sustainalytics ratings on carbon intensity trends and employee-related controversies or incidents. Based on carbon emissions and actual disputes with employees, these ratings, whose increase indicates an improvement, are also

harder to manipulate than broader CSR ratings. The results suggest that firms more exposed to investors' backlash appear to react by improving their E&S policies. We do not find analogous effects for firms with ex-ante larger sales to E&S-conscious countries, suggesting that market discipline is exercised more effectively by investors.

6. Alternative Explanations: Market Discipline versus Blockholder Engagements

Our results so far suggest that market discipline operates through investors' divestitures and, to a lesser extent, through consumers' boycotts. In this way, small atomistic investors and consumers are able to affect firms' E&S policies. In contrast, existing literature has highlighted that blockholders are able to engage with companies and obtain improvements in E&S policies. A possible concern is that the companies that achieve the improvements in E&S policies we document are the ones in which blockholders take the most active role and engage with management. Thus, these improvements may occur independently from the divestitures of E&S-conscious investors.

Table 10 explores the role of blockholders who can potentially engage with management and push for improvements in E&S policies following negative realizations of E&S risk. We find no evidence that this alternative hypothesis is at work. Panel A shows that small E&S-conscious investors divest firms following negative realizations of E&S risk. Contrary to prior findings showing that blockholders – defined as institutional shareholders with ownership above 5% – affect companies mostly by engaging with them, in Panel B, we find that large E&S-conscious investors also reduce their shareholdings following heightened E&S risk.¹¹

¹¹ In unreported tests, we also find no evidence that new blockholders arrive following negative realizations of E&S risk.

Panel C shows that consistent with the existence of market discipline, the improvements in E&S policies are concentrated in firms with small E&S-conscious investors. In fact, E&S-conscious blockholders do not appear to play a similar role, as seen by the insignificant interaction between *Large ENV IO* and *E&S News*. This evidence suggests that the effects we document are due to investors' divestitures rather than to blockholder engagement.

7. Conclusions

We show that investors' divestitures and consumers' backlash magnify the effects of negative news coverage of firms' E&S policies on corporate valuations. Since managers care about stock prices and fear even worse consequences in the future, firms take steps to repair their reputations. Following negative realizations of E&S risk, firms that experience greater investor divestitures improve their E&S policies, regardless of their initial E&S rating. Overall, our results indicate that market discipline can play a powerful role in improving firms' E&S policies, thus offering important policy implications.

Market discipline works as long as investors and customers are able to evaluate firms' E&S policies. Hence, better disclosure may enhance market discipline. Yet, despite strong pressure from institutional investors, regulatory agencies have been reluctant to impose uniform disclosure standards regarding E&S policies.¹² Driven by increased interest in E&S issues, the media and private data providers have stepped in to provide information on firms' long-term sustainability policies. Still, mandated standards of disclosure may enhance market discipline and become a powerful instrument in incentivizing firms to adopt E&S friendly policies.

¹² See "SEC urged by institutions to mandate ESG disclosure", October 2, 2018, *Pensions and Investments*.

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Figure 1. E&S-conscious institutional ownership, sales, and CSR policies

Panel A (Panel B) plots the institutional ownership (sales) by E&S-conscious investors (customers) – High ENV IO% (High ENV Sales%) for firms with no RepRisk news in year t (left y-scale, red line with hollow circle markers) and firms with more than five RepRisk news in year t (right y-scale, blue line with solid diamond markers). Panel C plots the CSR strategy score for firms with more than 5 RepRisk news in year t . High ENV (Low ENV) denotes firms held by (non-)E&S-conscious investors, defined as the those (not) in the top quintile of High ENV IO%.

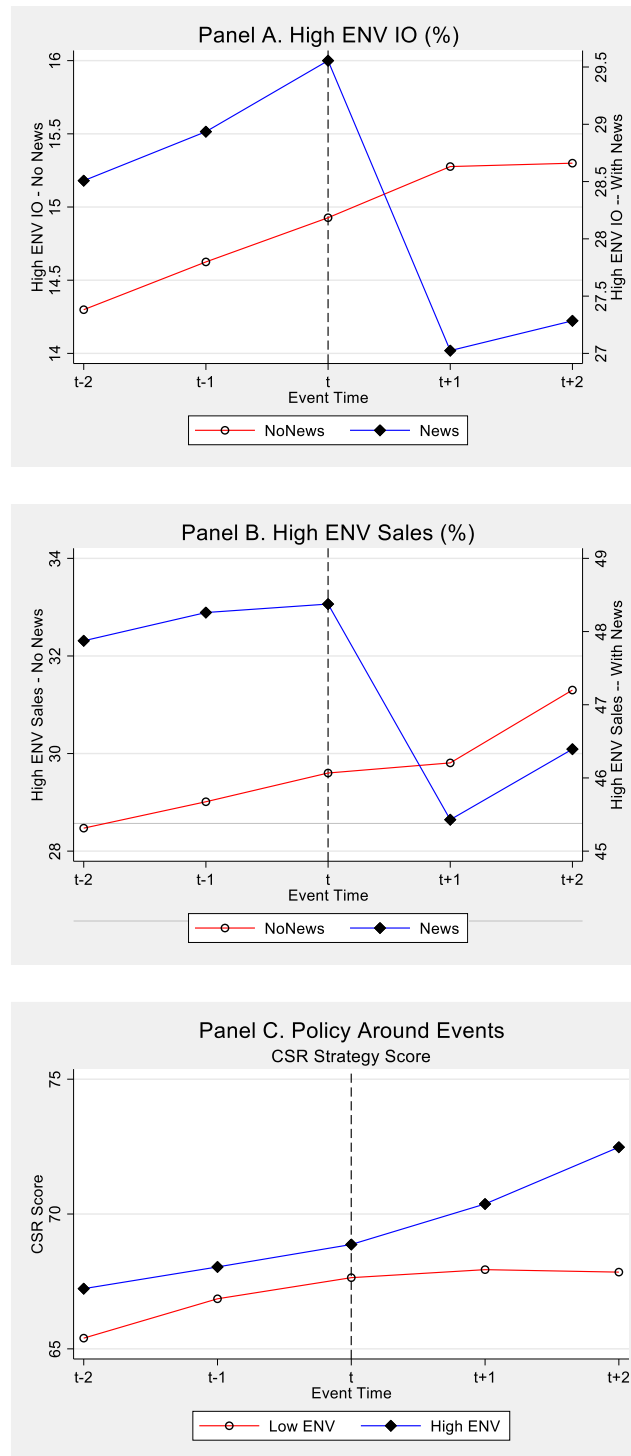


Table 1. Summary statistics

This table reports summary statistics of E&S risk news coverage (Panel A), institutional ownership (Panel B), sales (Panel C), and other firm characteristics (Panel D). The sample period is between 2007 and 2016. *High (Low) ENV IO* % is the percentage of firm ownership by institutional investors from countries in the top tercile (not in the top tercile) of the World Value Survey (WVS) self-expression score. *High (Low) Rating IO*% is the percentage of firm ownership by institutional investors with average portfolio sustainability ratings in the top tercile (not in the top tercile). *High ENV Sales* is the percentage of firm sales in countries in the top tercile of the WVS self-expression score. All other variables are defined in the Appendix.

Variable	Num Obs	Mean	Std Dev	10th	90th
Panel A – E&S Risk					
<i>RepRisk</i>					
RepRisk Index	235,552	0.064	0.104	0.000	0.223
Total News	235,552	5.672	64.986	0.000	2.000
Severe News	235,552	3.365	39.119	0.000	0.000
High Reach News	235,552	1.932	23.506	0.000	0.000
Environment News	235,552	1.459	16.154	0.000	0.000
Social News	235,552	2.451	32.820	0.000	0.000
Governance News	235,552	1.762	22.755	0.000	0.000
Panel B – Ownership					
<i>FactSet</i>					
Inst Ownership (%)	228,893	29.321	31.862	0.797	88.013
IO - Large (%)	228,893	11.711	22.034	0.000	52.291
High ENV IO (%)	228,893	19.210	34.376	0.000	86.814
Low ENV IO (%)	228,893	0.089	0.305	0.000	0.154
High Rating IO (%)	229,387	5.499	14.294	0.000	17.937
Low Rating IO (%)	229,387	11.718	23.293	0.000	55.804
High ENV IO - Small (%)	228,893	7.593	14.429	0.000	32.464
IO Concentration	228,891	23.342	28.049	3.072	71.937
Panel C - Sales					
<i>FactSet Revere</i>					
High ENV Sales (%)	48,142	42.683	39.798	0	100
Ln Sales	48,142	22.304	2.968	18.990	26.416
Ln High ENV Sales	48,142	16.089	9.829	0.000	23.928
Ln Low ENV Sales	48,142	18.220	8.667	0.000	26.200
Panel D - Other Data					
<i>Datastream</i>					
Leverage	225,730	0.341	0.273	0.000	0.674
Tangibility	226,087	0.328	0.235	0.051	0.684
ROA	226,389	0.017	0.144	-0.079	0.123
Cash	226,389	0.083	0.109	0.004	0.235
Dividend	226,648	1.700	2.220	0.000	4.480
Average Return	226,690	-0.001	0.042	-0.051	0.046
Market Value	226,631	8.507	2.839	5.021	12.358
Thomson Rated	235,552	0.373	0.484	0.000	1.000
Thomson Rating	85,025	56.898	29.846	12.850	92.880
Raw Return (%)	656,694	0.237	12.515	-13.571	14.918
Market Excess Return (%)	656,694	-0.430	12.111	-13.622	14.315
<i>Ravenpack</i>					
Total Negative News	191,895	0.551	1.730	0.000	2.000
<i>Thomson Reuters' ASSET4 ESG</i>					
CSR Strategy Score	20,974	55.246	27.509	19.15	91.43
<i>Sustainalytics</i>					
Carbon Intensity Trend	9,185	27.662	34.585	0	75
Employee Incidents	14,518	94.312	14.855	80	100

Table 2. Environmental and social (E&S) risk and E&S-conscious institutional ownership and sales

This table reports Fama-MacBeth regressions of E&S risk, measured by one plus the natural logarithm of RepRisk news counts, on E&S-conscious institutional ownership - *High ENV IO* - and the percentage of sales (log of sales) to E&S-conscious countries - *High ENV Sales Pct (Ln High ENV Sales)* at *t-1*. The observations are firm-quarter in columns (1), (4) and (7), and firm-year in the remaining columns. *Proportion of Severe News* is the number of severe news divided by the number of total news. All models include lagged firm controls. The t-statistics, calculated with Newey-West standard errors with three lags, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total News			E&S News			Proportion of Severe News		
High ENV IO	0.004*** (8.858)			0.004*** (9.312)			0.000 (1.315)		
High ENV Sale Pct		0.008*** (9.392)			0.007*** (7.824)			0.001* (2.349)	
Ln High ENV Sales			0.015*** (35.411)			0.015*** (26.388)			-0.001 (-1.223)
Thomson Rating	0.010*** (13.707)	0.017*** (30.400)	0.016*** (33.764)	0.009*** (15.721)	0.016*** (26.555)	0.015*** (32.660)	-0.000 (-1.281)	-0.001*** (-5.161)	-0.001*** (-5.997)
Thomson Rated	0.377*** (13.451)	0.608*** (22.533)	0.751*** (19.839)	0.313*** (15.584)	0.504*** (22.239)	0.628*** (18.900)	-0.010 (-0.815)	-0.002 (-0.286)	-0.003 (-0.475)
Market Value	0.047*** (8.368)	0.152*** (10.190)	0.071*** (9.511)	0.036*** (11.258)	0.122*** (14.426)	0.047*** (25.953)	-0.007*** (-4.467)	-0.006** (-2.541)	-0.010*** (-4.620)
Cash	-0.044** (-2.179)	-0.026 (-0.412)	-0.108** (-2.738)	-0.067*** (-4.773)	-0.131*** (-3.565)	-0.204*** (-10.340)	0.095** (2.203)	0.131 (1.606)	0.135* (2.161)
Dividend	0.018*** (5.589)	0.015** (3.044)	0.010** (2.600)	0.018*** (5.216)	0.020*** (3.874)	0.014** (2.941)	0.003 (1.350)	-0.004 (-1.344)	-0.002 (-0.534)
Tangibility	0.188*** (8.639)	0.360*** (5.915)	0.371*** (5.841)	0.250*** (9.870)	0.585*** (19.509)	0.566*** (19.950)	-0.041* (-1.854)	-0.013 (-0.640)	-0.018 (-0.799)
ROA	-0.253*** (-6.924)	-0.206*** (-4.451)	-0.183*** (-5.789)	-0.211*** (-7.841)	-0.104 (-1.508)	-0.066 (-1.114)	0.089*** (2.863)	0.096*** (7.046)	0.095*** (4.769)
Leverage	0.078* (1.829)	0.406* (2.355)	0.376* (2.312)	0.030 (0.991)	0.237* (1.924)	0.223 (1.833)	0.043 (1.667)	0.038** (2.511)	0.032 (1.788)
Average Return	-0.452** (-2.207)	-1.072** (-2.524)	-0.397 (-1.414)	-0.262 (-1.585)	-0.826* (-1.896)	-0.179 (-0.609)	0.135 (1.087)	0.067 (0.313)	0.201 (0.931)
IO Concentration	-0.089*** (-9.017)	-0.005*** (-8.729)	-0.006*** (-8.002)	-0.073*** (-8.750)	-0.004*** (-9.134)	-0.005*** (-7.578)	-0.046 (-1.663)	-0.001 (-1.565)	-0.001** (-2.886)
Constant	-0.955*** (-9.131)	-2.183*** (-13.032)	-1.315*** (-26.324)	-0.839*** (-10.525)	-2.016*** (-13.084)	-1.202*** (-36.692)	0.709*** (16.188)	0.690*** (7.687)	0.811*** (13.132)
Observations	186589	29215	35730	186589	29215	35730	26942	10947	12651
Average R-squared	0.167	0.270	0.257	0.155	0.245	0.231	0.040	0.028	0.026

Table 3. Institutional ownership from E&S-conscious countries and E&S risk

This table reports OLS estimates of E&S-conscious institutional ownership on E&S risk, measured by RepRisk news counts. The observations are firm-quarter. In Panel A (Panel B), the dependent variable is *High (Low) ENV IO%* for firm *i* at quarter *t*, which is the percentage of firm ownership by institutional investors from countries in the top tercile (not in the top tercile) of the World Value Survey (WVS) self-expression score. Columns (6) - (8) control for a firm's number of governance news in the past four quarters. All models include lagged firm controls, year-quarter fixed effects, and firm fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High ENV IO%							
Total News	-0.095*** (-2.686)							
High Reach News		-0.097** (-2.371)						
Severe News			-0.100** (-2.468)					
Environment News				-0.146** (-2.255)		-0.146** (-2.262)		
Social News					-0.145*** (-2.685)		-0.144*** (-2.662)	
E&S News								-0.114*** (-2.657)
Past Governance News						-0.259 (-1.589)	-0.255 (-1.561)	-0.255 (-1.567)
Market Value	1.713*** (12.396)	1.712*** (12.389)	1.713*** (12.395)	1.714*** (12.391)	1.714*** (12.406)	1.711*** (12.388)	1.712*** (12.402)	1.712*** (12.398)
Cash	-0.999 (-1.480)	-1.002 (-1.485)	-0.999 (-1.481)	-0.999 (-1.480)	-0.998 (-1.479)	-0.992 (-1.470)	-0.991 (-1.469)	-0.992 (-1.470)
Dividend	0.094*** (4.950)	0.094*** (4.944)	0.095*** (4.963)	0.094*** (4.946)	0.095*** (4.958)	0.094*** (4.941)	0.094*** (4.952)	0.094*** (4.947)
Tangibility	0.484 (0.870)	0.489 (0.879)	0.484 (0.871)	0.495 (0.891)	0.487 (0.876)	0.481 (0.867)	0.474 (0.853)	0.477 (0.858)
ROA	1.978*** (3.255)	1.980*** (3.259)	1.980*** (3.259)	1.976*** (3.252)	1.980*** (3.259)	1.978*** (3.256)	1.982*** (3.263)	1.981*** (3.260)
Leverage	0.869** (2.075)	0.865** (2.065)	0.869** (2.075)	0.864** (2.063)	0.871** (2.081)	0.865** (2.064)	0.872** (2.081)	0.869** (2.075)

Average Return	-0.190 (-0.217)	-0.174 (-0.198)	-0.181 (-0.207)	-0.184 (-0.210)	-0.189 (-0.215)	-0.176 (-0.200)	-0.181 (-0.206)	-0.181 (-0.206)
IO Concentration	-0.002 (-0.875)	-0.002 (-0.888)	-0.002 (-0.874)	-0.002 (-0.885)	-0.002 (-0.871)	-0.002 (-0.879)	-0.002 (-0.866)	-0.002 (-0.872)
Thomson Rated	1.355*** (6.634)	1.353*** (6.627)	1.352*** (6.625)	1.352*** (6.624)	1.353*** (6.626)	1.354*** (6.630)	1.355*** (6.632)	1.356*** (6.636)
Thomson Rating	-0.007 (-1.597)	-0.007 (-1.615)	-0.007 (-1.603)	-0.007 (-1.611)	-0.007 (-1.603)	-0.007 (-1.568)	-0.007 (-1.560)	-0.007 (-1.558)
Constant	1.802 (1.381)	1.800 (1.380)	1.799 (1.379)	1.793 (1.374)	1.792 (1.374)	1.837 (1.411)	1.836 (1.410)	1.836 (1.410)
Observations	190775	190775	190775	190775	190775	190775	190775	190775
Adjusted R-squared	0.976	0.976	0.976	0.976	0.976	0.976	0.976	0.976
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Low ENV IO%								
Total News	0.016*** (9.346)							
High Reach News		0.019*** (9.431)						
Severe News			0.020*** (9.873)					
Environment News				0.022*** (7.055)		0.022*** (7.086)		
Social News					0.022*** (8.783)		0.021*** (8.762)	
E&S News								0.017*** (8.733)
Past Governance News						0.026*** (4.817)	0.025*** (4.714)	0.026*** (4.735)
Observations	190775	190775	190775	190775	190775	190775	190775	190775
Adjusted R-squared	0.750	0.749	0.750	0.749	0.749	0.749	0.750	0.750
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4. Institutional investors with sustainable portfolios and E&S risk

This table reports OLS estimates of E&S-conscious institutional ownership on E&S risk, measured by RepRisk news counts. The observations are firm-quarter. In Panel A (Panel B), the dependent variable is *High (Low) Rating IO%* for firm *i* at quarter *t*, which is the percentage of firm ownership by institutional investors with average portfolio ESG ratings in the top tercile (not in the top tercile). Column (5) controls for a firm's number of governance news in the past four quarters. All models include lagged firm controls, year-quarter fixed effects, and firm fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A					
	(1)	(2)	(3)	(4)	(5)
High Rating IO%					
Total News	-0.275*** (-4.770)				
High Reach News		-0.417*** (-6.252)			
Severe News			-0.249*** (-3.970)		
E&S News				-0.259*** (-3.770)	-0.255*** (-3.707)
Past Governance					-1.244*** (-4.236)
Observations	190814	190814	190814	190814	190814
Adjusted R-squared	0.618	0.618	0.618	0.618	0.618
Controls	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes
Panel B					
	(1)	(2)	(3)	(4)	(5)
Low Rating IO%					
Total News	0.207*** (3.519)				
High Reach News		0.358*** (5.297)			
Severe News			0.197*** (3.005)		
E&S News				0.180*** (2.594)	0.177** (2.549)
Past Governance					0.840*** (3.098)
Observations	190814	190814	190814	190814	190814
Adjusted R-squared	0.854	0.854	0.854	0.854	0.854
Controls	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes

Table 5. Investor preferences vs. firm fundamentals

Panel A of this table reports OLS regressions of the change in institutional holdings by E&S-conscious institutions (as captured by the indicator variable *High Rating IO Inst*) as a function of *Total News (ES News)*. Change in institutional holdings is defined as an institution's holdings in quarter $t+1$ minus holdings in quarter $t-1$ divided by holdings in quarter $t-1$. The observations are at the institution-firm-year-quarter level and all specifications include firm-year-quarter fixed effects, with standard errors clustered at the institution level. Panel B of this table reports OLS regressions of E&S-conscious institutional ownership on (one plus the natural log of) general negative news counts from Ravenpack. The observations are firm-quarter and all models include lagged firm controls, year-quarter fixed effects, and firm fixed effects, with standard errors clustered at the firm level. The t-statistics are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Controlling non-parametrically for firm fundamentals				
	(1)	(2)	(3)	(4)
	Change in Institutional Holdings			
High Rating IO Inst	-0.010 (-1.366)	-0.009 (-1.237)	-0.011 (-1.487)	-0.010 (-1.340)
High Rating IO Inst # Total News	-0.003*** (-2.853)			
High Rating IO Inst # Total News Dummy		-0.015*** (-3.242)		
High Rating IO Inst # ES News			-0.003*** (-2.754)	
High Rating IO Inst # ES News Dummy				-0.014*** (-3.140)
Observations	14,934,078	14,934,078	14,934,078	14,934,078
Adjusted R-squared	0.029	0.029	0.029	0.029
Controls	No	No	No	No
Firm*YQ FE	Yes	Yes	Yes	Yes
Panel B. Non-E&S negative news and E&S-conscious investors' trading				
	(1)	(2)	(3)	(4)
	Low ENV IO %	High ENV IO %	Low Rating IO %	High Rating IO %
General Negative News	0.002 (1.296)	0.137** (2.323)	-0.731*** (-8.518)	0.920*** (10.461)
Observations	190775	190775	190814	190814
Adjusted R-squared	0.749	0.976	0.854	0.618
Controls	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes

Table 6. Sales in E&S-conscious countries and E&S Risk

This table reports OLS regression estimates of firm sales in E&S-conscious countries on E&S risk, measured by RepRisk news counts. The observations are firm-year. The dependent variable in Panel A (Panel B) is the natural logarithm of total sales in high (low) E&S-conscious countries for firm i in year t . Columns (6) - (8) control for a firm's number of governance news in the past year. All models include lagged firm controls, and firm and year fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln Sales from High ENV Countries							
Total News	-0.072*** (-2.637)							
High Reach News		-0.155*** (-5.205)						
Severe News			-0.088*** (-3.114)					
Environment News				-0.087** (-2.225)		-0.086** (-2.206)		
Social News					-0.118*** (-3.279)		-0.118*** (-3.288)	
E&S News								-0.078** (-2.526)
Past Governance News						0.167 (1.290)	0.172 (1.327)	0.170 (1.313)
Observations	39476	39476	39476	39476	39476	39476	39476	39476
Adjusted R-squared	0.806	0.806	0.806	0.806	0.806	0.806	0.806	0.806
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Ln Sales from Low ENV Countries							
Total News	-0.009 (-0.494)							
High Reach News		-0.016 (-0.722)						
Severe News			-0.004 (-0.179)					
Environment News				-0.005 (-0.155)		-0.004 (-0.140)		
Social News					-0.027 (-1.037)		-0.027 (-1.044)	
E&S News								-0.011 (-0.538)
Past Governance News						0.090 (1.184)	0.091 (1.192)	0.090 (1.186)
Observations	38422	38422	38422	38422	38422	38422	38422	38422
Adjusted R-squared	0.933	0.933	0.933	0.933	0.933	0.933	0.933	0.933
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7. Geographical distribution of sales and general negative news coverage

This table reports OLS regression estimates of sales in E&S-conscious countries on general negative news from Ravenpack. The observations are firm-year. All models include lagged firm controls, and firm and year fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

	(1)	(2)
	Percent High ENV Sales	Ln Sales
General Negative News	0.029 (0.273)	-0.076*** (-3.154)
Observations	32840	32840
Adjusted R-squared	0.923	0.709
Controls	Yes	Yes
Firm & Year FE	Yes	Yes

Table 8. Stock returns and E&S risk

This table reports abnormal stock returns (in percentages) around E&S risk events, measured by RepRisk news. Panel A reports univariate t-tests of short-term CARs, cumulated from one day before to one day after the RepRisk news event. Panel B presents cross-sectional regression estimates for short-term CARs, calculated by subtracting the value-weighted market index or as the residuals of a three-factor Fama-French model, estimated over the 252 days before the event day. Panel C presents cross-sectional regression estimates for long-term CARs, estimated as the average monthly abnormal returns over the twelve months including the event month. Monthly abnormal returns are the residuals of a three-factor Fama-French model, estimated over the 36 months before the event month. The main independent variables are dummies that take the value of one if a firm's institutional ownership (sales) is (are) in the top quintile of *High ENV IO%*/*High Rating IO%* or *High ENV Sales*. All models include lagged firm controls, time, industry and country fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Univariate statistics – Short-term CARs

Sample	All News	High Reach or Severe News
<i>Market adjusted CARs (-1,1)</i>		
Mean	-0.142	-0.171
t-value	-13.8	-11.9
N	113349	57716
<i>FF3 adjusted CARs (-1,1)</i>		
Mean	-0.142	-0.166
t-value	-14.2	-11.8
N	113349	57716

Panel B. Cross-sectional analysis - Short-term CARs

Panel B: Cross sectional analysis	Short term effects					Long term effects				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	CAR (-1,+1) - Market adjusted					CAR (-1,+1) - FF3 adjusted				
	All News									
High ENV IO	-0.168*** (-3.168)			-0.164*** (-3.085)		-0.130** (-2.551)			-0.125** (-2.447)	
High Rating IO		-0.132*** (-2.846)			-0.130*** (-2.802)		-0.088* (-1.892)			-0.086* (-1.834)
High ENV Sales			-0.053 (-0.972)	-0.039 (-0.711)	-0.049 (-0.896)			-0.066 (-1.227)	-0.055 (-1.022)	-0.063 (-1.174)
Observations	71215	71215	71215	71215	71215	71215	71215	71215	71215	71215
Adjusted R-squared	0.011	0.011	0.011	0.011	0.011	0.009	0.009	0.009	0.009	0.009
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ctry*Year & Ind FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Severe or High Reach News									
High ENV IO	-0.250*** (-3.281)			-0.233*** (-3.053)		-0.226*** (-2.955)			-0.207*** (-2.718)	
High Rating IO		-0.226*** (-3.256)			-0.216*** (-3.100)		-0.160** (-2.394)			-0.150** (-2.226)
High ENV Sales			-0.224*** (-2.817)	-0.204** (-2.533)	-0.215*** (-2.707)			-0.231*** (-2.903)	-0.214*** (-2.644)	-0.225*** (-2.821)
Observations	35669	35669	35669	35669	35669	35669	35669	35669	35669	35669
Adjusted R-squared	0.014	0.014	0.014	0.014	0.014	0.011	0.011	0.011	0.011	0.011
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ctry*Year & Ind FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. Cross-sectional analysis - Long-term CARs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	All News					Severe or High Reach News				
	Monthly return (FF3)									
High ENV IO	0.061 (0.595)			0.062 (0.615)		-0.013 (-0.116)			-0.010 (-0.089)	
High Rating IO		0.013 (0.141)			0.013 (0.148)		-0.057 (-0.555)			-0.055 (-0.546)
High ENV Sales			-0.015 (-0.138)	-0.020 (-0.186)	-0.015 (-0.143)			-0.038 (-0.330)	-0.038 (-0.323)	-0.036 (-0.313)
Observations	69054	69054	69054	69054	69054	34644	34644	34644	34644	34644
Adjusted R-squared	0.479	0.479	0.479	0.479	0.479	0.503	0.503	0.503	0.503	0.503
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ctry*Year & Ind FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 9. Firms' policy responses

This table reports OLS regression estimates of firms' policy responses on E&S risk, measured by RepRisk news counts. The observations are firm-year. The main independent variables are dummies that take the value of one if a firm's institutional ownership (sales) is (are) in the top quintile of *High ENV IO%/High Rating IO%* or *High ENV Sales*. In Panel A (Panel B / Panel C), the dependent variable is a firm's Capital Expenditures/Total Assets (CSR Strategy Score / RepRisk Index) in year t+1. In Panel D (Panel E), the dependent variable is the firm's carbon intensity trend (employee controversies) Sustainalytics score in year t+2; increases in these scores indicate improvements along these dimensions. All models include lagged firm controls, and firm and year fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A. Investment										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	CAPX/Total Assets									
Total News	-0.114*** (-2.767)	-0.132*** (-3.262)	-0.071* (-1.954)	-0.117*** (-2.813)	-0.134*** (-3.237)					
E&S News						-0.048 (-0.858)	-0.093* (-1.702)	-0.024 (-0.515)	-0.070 (-1.239)	-0.110* (-1.942)
High ENV IO	-0.163 (-0.476)			-0.161 (-0.470)		-0.037 (-0.107)			-0.033 (-0.097)	
High Rating IO		-0.398* (-1.723)			-0.393* (-1.706)		-0.288 (-1.238)			-0.282 (-1.215)
High ENV Sales	0.222*** (3.994)			0.215*** (3.773)						
Total News # High ENV IO			-0.226 (-1.057)	-0.169 (-0.786)	-0.158 (-0.731)			-0.212 (-1.027)	-0.195 (-0.943)	-0.182 (-0.880)
Total News # High Rating IO		0.276*** (4.212)			0.271*** (4.090)					
Total News # High ENV Sales			0.084 (1.194)	0.019 (0.266)	0.010 (0.141)					
E&S News # High ENV IO						0.211*** (2.697)			0.167** (2.212)	
E&S News # High Rating IO							0.324*** (3.834)			0.289*** (3.570)
E&S News # High ENV Sales								0.206** (2.153)	0.150 (1.594)	0.117 (1.270)
Observations	35451	35451	35451	35451	35451	35451	35451	35451	35451	35451
Adjusted R-squared	0.562	0.562	0.562	0.562	0.562	0.562	0.562	0.562	0.562	0.562
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. CSR Strategy Score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	CSR Strategy Score									
Total News	-0.190 (-1.168)	-0.218 (-1.274)	-0.054 (-0.370)	-0.218 (-1.292)	-0.244 (-1.389)					
E&S News						-0.367* (-1.782)	-0.425** (-2.001)	-0.270 (-1.582)	-0.410* (-1.930)	-0.463** (-2.124)
High ENV IO	-0.363 (-0.199)			-0.312 (-0.170)		0.458 (0.261)			0.506 (0.287)	
High Rating IO		-0.241 (-0.256)			-0.215 (-0.227)		0.327 (0.356)			0.330 (0.360)
High ENV Sales			-0.047 (-0.068)	0.197 (0.284)	0.204 (0.294)			0.130 (0.200)	0.208 (0.318)	0.215 (0.330)
Total News # High ENV IO	0.695*** (3.080)			0.645*** (2.906)						
Total News # High Rating IO		0.739*** (2.939)			0.690*** (2.752)					
Total News # High ENV Sales			0.396* (1.765)	0.209 (0.947)	0.204 (0.919)					
E&S News # High ENV IO						0.561** (2.174)			0.458* (1.804)	
E&S News # High Rating IO							0.677** (2.411)			0.580** (2.036)
E&S News # High ENV Sales								0.539** (2.037)	0.369 (1.425)	0.341 (1.279)
Observations	15947	15947	15947	15947	15947	15947	15947	15947	15947	15947
Adjusted R-squared	0.782	0.782	0.782	0.782	0.782	0.782	0.782	0.782	0.782	0.782
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. RepRisk Index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	RepRisk Index									
Total News	3.354*** (33.840)	3.413*** (34.140)	3.117*** (32.643)	3.359*** (32.815)	3.414*** (32.999)					
E&S News						3.152*** (23.489)	3.280*** (23.841)	2.788*** (22.395)	3.153*** (22.645)	3.268*** (22.925)
High ENV IO	1.730*** (2.732)			1.723*** (2.720)		1.235* (1.912)			1.229* (1.903)	
High Rating IO		0.804* (1.863)			0.808* (1.867)		0.279 (0.661)			0.287 (0.680)
High ENV Sales			0.079 (0.203)	-0.219 (-0.559)	-0.259 (-0.662)			-0.266 (-0.693)	-0.393 (-1.024)	-0.430 (-1.120)
Total News # High ENV IO	-1.158*** (-7.309)			-1.148*** (-6.899)						
Total News # High Rating IO		-1.322*** (-8.569)			-1.322*** (-8.234)					
Total News # High ENV Sales			-0.392*** (-2.621)	-0.045 (-0.288)	-0.014 (-0.088)					
E&S News # High ENV IO						-1.337*** (-6.671)			-1.334*** (-6.241)	
E&S News # High Rating IO							-1.619*** (-8.189)			-1.643*** (-7.839)
E&S News # High ENV Sales								-0.460** (-2.263)	-0.019 (-0.087)	0.070 (0.325)
Observations	36850	36850	36850	36850	36850	36850	36850	36850	36850	36850
Adjusted R-squared	0.500	0.500	0.499	0.500	0.500	0.486	0.486	0.486	0.486	0.486
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. Carbon Intensity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Carbon Intensity Trend									
Total News	-0.619 (-1.233)	-0.485 (-0.973)	0.456 (1.051)	-0.428 (-0.835)	-0.317 (-0.616)					
Environmental News						-0.219 (-0.309)	-0.034 (-0.049)	0.939 (1.557)	0.004 (0.006)	0.163 (0.228)
High ENV IO	-3.169 (-0.813)			-3.529 (-0.909)		-0.553 (-0.150)			-0.784 (-0.214)	
High Rating IO		-1.135 (-0.397)			-1.010 (-0.352)		0.740 (0.270)			1.009 (0.367)
High ENV Sales			-6.327*** (-2.756)	-5.078** (-2.180)	-5.319** (-2.284)			-6.645*** (-3.049)	-6.087*** (-2.759)	-6.204*** (-2.810)
Total News # High ENV IO	2.256*** (3.264)			2.420*** (3.365)						
Total News # High Rating IO		1.845*** (2.588)			1.974*** (2.688)					
Total News # High ENV Sales			-0.402 (-0.607)	-1.024 (-1.493)	-0.902 (-1.353)					
Env News # High ENV IO						2.049** (2.163)			2.241** (2.252)	
Env News # High Rating IO							1.583 (1.641)			1.753* (1.731)
Env News # High ENV Sales								-0.462 (-0.506)	-1.033 (-1.089)	-0.918 (-0.985)
Observations	6924	6924	6924	6924	6924	6924	6924	6924	6924	6924
Adjusted R-squared	0.431	0.431	0.431	0.433	0.432	0.431	0.430	0.431	0.432	0.432
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel E. Employee Controversies

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Employee Controversies									
Total News	-0.767*** (-5.272)	-0.772*** (-5.206)	-0.594*** (-4.613)	-0.799*** (-5.259)	-0.804*** (-5.240)					
Social News						-1.117*** (-5.556)	-1.123*** (-5.470)	-0.813*** (-4.659)	-1.140*** (-5.466)	-1.147*** (-5.441)
High ENV IO	-1.773* (-1.682)			-1.713 (-1.637)		-1.888* (-1.789)			-1.853* (-1.769)	
High Rating IO		-1.002* (-1.896)			-0.955* (-1.813)		-1.049** (-1.999)			-1.018* (-1.950)
High ENV Sales			-0.336 (-0.661)	-0.023 (-0.045)	-0.025 (-0.050)			-0.269 (-0.527)	0.033 (0.065)	0.031 (0.061)
Total News # High ENV IO	0.749*** (3.914)			0.693*** (3.579)						
Total News # High Rating IO		0.723*** (3.569)			0.664*** (3.168)					
Total News # High ENV Sales			0.417* (1.886)	0.220 (0.980)	0.228 (1.000)					
Soc News # High ENV IO						1.070*** (4.251)			1.027*** (4.095)	
Soc News # High Rating IO							1.048*** (3.736)			0.999*** (3.470)
Soc News # High ENV Sales								0.455 (1.502)	0.168 (0.554)	0.187 (0.604)
Observations	10929	10929	10929	10929	10929	10929	10929	10929	10929	10929
Adjusted R-squared	0.724	0.723	0.723	0.724	0.723	0.724	0.724	0.723	0.724	0.724
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10. Market Discipline vs. investor engagements

In Panel A (Panel B) of this table, the dependent variable is the E&S-conscious institutional ownership of small (large) investors, defined as investors from E&S-conscious countries with less than 0.5% (more than 5%) ownership of a firm's shares. Observations are firm-quarter. Columns (6) - (8) control for a firm's number of governance news in the past four quarters. All models include lagged firm controls, and year-quarter and firm fixed effects. In Panel C, the dependent variable is the CSR Strategy Score for firm i in year $t+1$. Observations are firm-year. All specifications include firm and year fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High ENV IO – Small %							
Total News	-0.058** (-2.434)							
High Reach News		-0.070** (-2.565)						
Severe News			-0.079*** (-2.889)					
Environment News				-0.100** (-2.473)		-0.101** (-2.482)		
Social News					-0.100*** (-2.938)		-0.099*** (-2.907)	
E&S News								-0.078*** (-2.820)
Past Governance News						-0.239** (-2.477)	-0.236** (-2.446)	-0.236** (-2.452)
Observations	190775	190775	190775	190775	190775	190775	190775	190775
Adjusted R-squared	0.904	0.904	0.904	0.904	0.904	0.904	0.904	0.904
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High ENV IO – Large %							
Total News	-0.088*** (-3.364)							
High Reach News		-0.066** (-2.249)						
Severe News			-0.075** (-2.528)					
Environment News				-0.110** (-2.479)		-0.110** (-2.478)		
Social News					-0.112*** (-2.929)		-0.112*** (-2.935)	
E&S News								-0.092*** (-3.001)
Past Governance News						0.040 (0.316)	0.044 (0.343)	0.043 (0.338)
Observations	190775	190775	190775	190775	190775	190775	190775	190775
Adjusted R-squared	0.856	0.856	0.856	0.856	0.856	0.856	0.856	0.856
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C						
	(1)	(2)	(3)	(4)	(5)	(6)
	CSR Strategy Score					
Total News	-0.287 (-1.620)		-0.254 (-1.469)		-0.455* (-1.693)	
High ENV IO	-0.013 (-0.324)	-0.004 (-0.114)				
High ENV IO # Total News	0.012*** (2.886)					
E&S News		-0.481** (-2.181)		-0.435** (-2.025)		-0.921*** (-2.763)
High ENV IO # E&S News		0.012*** (2.617)				
Small High ENV IO			-0.052* (-1.688)	-0.040 (-1.340)		
Small High ENV IO # Total News			0.020** (2.547)			
Small High ENV IO # E&S News				0.020** (2.236)		
High ENV Sales					-0.038 (-1.490)	-0.035 (-1.401)
High ENV Sales # Total News					0.007* (1.735)	
High ENV Sales # E&S News						0.011** (2.286)
Large ENV IO	0.050 (1.116)	0.055 (1.462)	0.032 (0.726)	0.047 (1.214)	0.020 (0.442)	0.043 (1.125)
Large ENV IO # Total News	-0.005 (-0.407)		0.006 (0.522)		0.016 (1.494)	
Large ENV IO # E&S News		-0.013 (-0.797)		-0.001 (-0.053)		0.008 (0.592)
Observations	14839	14839	14839	14839	14268	14268
Adjusted R-squared	0.785	0.785	0.785	0.785	0.789	0.789
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Appendix. Variable definitions

Panel A – E&S Risk

<i>Variable</i>	<i>Definitions</i>	<i>Source</i>
Total News	Natural logarithm of one plus the count of news on ESG issues of a company.	RepRisk
Environment News	Natural logarithm of one plus the count of news on environmental issues of a company.	RepRisk
Social News	Natural logarithm of one plus the count of news on social issues of a company.	RepRisk
Governance News	Natural logarithm of one plus the count of news on governance issues of a company.	RepRisk
Severe News	Natural logarithm of one plus the count of news of high severity ESG issues of a company. The severity is determined based on the consequences, extent and cause of the risk incidents.	RepRisk
High Reach News	Natural logarithm of one plus the count of high reach news on ESG issues of a company. Low influence sources include local media, smaller NGOs, local government bodies, etc. Medium influence sources include most national and regional media, international NGOs, and state, national, and international government bodies. High influence sources include international media (e.g., the FT, NY Times, WSJ, BBC, etc.)	RepRisk
RepRisk Index	The RepRisk Index is obtained from a proprietary algorithm developed by RepRisk, which dynamically captures and quantifies a company's exposure to ESG and business conduct risks, associated with financing, investing, or doing business with a particular company. The Current RRI denotes the current level of firm-specific media and stakeholder coverage related to ESG issues. The RRI ranges from 0 to 100. The higher the value, the higher the risk exposure: 0-25 = low risk exposure; 26-49 = medium risk exposure; 50-59 = high risk exposure; 60-74 = very high risk exposure; 75-100 = extremely high risk exposure.	RepRisk

Panel B - Ownership

Inst Ownership (%)	The total percentage of firm ownership by institutional investors.	FactSet
High ENV IO (%)	The total percentage of firm ownership by institutional investors from countries that are E&S-conscious. We define as E&S-conscious countries that are in the top tercile of the self-expression score, calculated as an equally-weighted score for all respondents in each country in the World Value Survey. See Table A2.	FactSet, World Value Survey (WVS)
Low ENV IO (%)	The total percentage of firm ownership by institutional investors from countries that are not in the top tercile of the WVS self-expression score.	FactSet, WVS
High Rating IO (%)	The total percentage of firm ownership by institutional investors with average portfolio ESG ratings in the top tercile. An institution's average portfolio ESG rating is calculated as the value-weighted ESG ratings of all firms held by the institution in the past two years. We set the ESG portfolio rating to 0 for all institutions with less than 50% holdings of firms with ESG ratings.	FactSet, Thomson Reuters ASSET4
Low Rating IO (%)	The total percentage of firm ownership by institutional investors with average portfolio ESG ratings not in the top tercile.	FactSet, ASSET4
High ENV IO - Small (%)	The total percentage of firm ownership by institutional investors who hold less than 0.5% of the firm's shares and are from E&S-conscious countries. E&S-conscious countries are those in the top tercile of the self-expression score.	FactSet WVS
High ENV IO - Large (%)	Percent ownership of investors who hold more than 5% of the firm's shares and are from E&S-conscious countries. E&S-conscious countries are those in the top tercile of the self-expression score.	FactSet WVS

Panel C - Customer Sales Distribution

High ENV Sales	The percentage of firm sales in E&S-conscious countries. We define as E&S-conscious countries that are in the top tercile of the self-expression score, calculated as an equally-weighted score for all respondents in each country in the World Value Survey. See Table A2.	FactSet
Ln High ENV Sales	Log of total firm sales in E&S-conscious countries. We define as E&S-conscious countries that are in the top tercile of the self-expression score, calculated as an equally-weighted score for all respondents in each country in the World Value Survey. See Table A2.	FactSet
Ln Low ENV Sales	Log of total firm sales in non-E&S-conscious countries. We define as non-E&S-conscious countries that are not in the top tercile of the WVS self-expression score. See Table A2.	FactSet
Ln Sales	Log of total firm sales.	FactSet

Panel D - Other Data

Leverage	$(\text{Long Term Debt} + \text{Short Term Debt} \& \text{ Current Portion of Long Term Debt}) / (\text{Total Capital} + \text{Short Term Debt} \& \text{ Current Portion of Long Term Debt}) * 100.$	Thomson Datastream
Cash	The sum of cash and short-term investments scaled by total assets.	Thomson Datastream
Tangibility	Property, plant, and equipment (PPENT) scaled by total assets. PPENT represents gross property, plant, and equipment less accumulated reserves for depreciation, depletion and amortization.	Thomson Datastream
ROA	Net Income (before extraordinary items) scaled by total assets.	Thomson Datastream
Average Return	Average monthly stock return in the past year.	Thomson Datastream
Market Value	The share price multiplied by the number of ordinary shares outstanding. For companies with more than one class of equity capital, the market value is expressed according to the individual issue.	Thomson Datastream
Return	Monthly stock return.	Thomson Datastream
CSR Strategy Score	A score reflecting a company's practices regarding the economic (financial), social and environmental dimensions of its day-to-day decision-making processes.	Thomson ASSET4
General Negative News	Natural logarithm of one plus the total number of news with an Event Sentiment Score below 25, i.e., extremely negative sentiment of a firm. The news count excludes items related to corporate social responsibility.	Ravenpack
Carbon Intensity Trend	Carbon intensity trend tracks a company's carbon emissions over time to provide information regarding the effectiveness of its carbon emissions reduction programs. An increase in the score indicates a decrease in emissions.	Sustainalytics
Employee Controversies	Employee controversies track incidents related to a company's employee recruitment, development, diversity, engagement, and labor relations. An increase in the score indicates a decrease in controversies.	Sustainalytics

Table A1. RepRisk news by issues and topics

Panel A. Issues			
Issue	Total News	Severe	High Reach
Animal mistreatment	6554	78.8%	39.2%
Child labor	19388	29.6%	38.7%
Controversial products and services	234861	61.2%	29.3%
Discrimination in employment	27119	70.1%	29.2%
Forced labor	22682	31.2%	37.0%
Freedom of association and collective bargaining	28646	48.1%	53.5%
Global pollution (including climate change and GHG emissions)	120391	65.7%	42.5%
Human rights abuses and corporate complicity	168070	46.4%	40.7%
Impacts on communities	322139	53.9%	45.8%
Impacts on ecosystems/landscapes	271141	54.1%	44.1%
Local participation issues	64492	46.1%	55.3%
Local pollution	165125	54.0%	40.4%
Occupational health and safety issues	78089	48.2%	36.0%
Other environmental issues	332	47.3%	14.5%
Other issues	1760	91.4%	49.0%
Other social issues	249	43.0%	20.5%
Overuse and wasting of resources	19220	46.6%	53.4%
Poor employment conditions	104057	56.4%	38.2%
Products (health and environmental issues)	76262	76.1%	21.1%
Social discrimination	27491	77.7%	25.4%
Supply chain issues	94437	58.4%	33.7%
Violation of international standards	43088	31.0%	50.4%
Violation of national legislation	773065	65.4%	19.1%
Waste issues	45130	52.3%	41.7%
Total E&S News	2707234	60.3%	30.7%

Panel B. Topics

Topic	Total News	Severe	High Reach
Abusive/Illegal fishing	717	42.3%	27.2%
Agricultural commodity speculation	4786	89.6%	49.5%
Alcohol	486	85.0%	42.2%
Animal transportation	181	78.5%	28.2%
Arctic drilling	4443	84.8%	24.4%
Asbestos	3773	71.5%	60.3%
Automatic and semi-automatic weapons	396	87.4%	42.4%
Cluster munitions	13110	10.8%	70.7%
Coal-fired power plants	38770	64.0%	36.0%
Conflict minerals	4174	38.7%	48.5%
Coral reefs	2444	47.6%	50.8%
Deep sea drilling	3276	51.8%	31.0%
Depleted uranium munitions	252	66.7%	46.4%
Diamonds	413	49.9%	74.6%
Drones	456	82.0%	35.1%
Endangered species	16575	33.2%	47.6%
Forest burning	2993	61.4%	21.8%
Fracking	14847	81.9%	45.6%
Gambling	877	84.3%	10.4%
Genetically modified organisms (GMOs)	14382	68.1%	58.9%
Genocide/Ethnic cleansing	4683	32.6%	62.5%
High conservation value forests	2993	39.4%	25.1%
Human trafficking	1248	31.2%	36.8%
Hydropower (dams)	15289	46.4%	61.2%
Illegal logging	4143	28.7%	49.6%
Indigenous people	59963	42.9%	53.1%
Involuntary resettlement	11010	23.3%	49.2%
Land grabbing	32990	30.1%	55.2%
Land mines	722	8.0%	79.8%
Migrant labor	6900	30.8%	28.5%
Monocultures	3236	29.3%	62.0%
Mountaintop removal mining	12889	73.0%	32.7%
Negligence	22039	52.7%	30.3%
Nuclear power	20272	75.7%	35.1%
Oil sands	12229	63.3%	40.8%
Palm oil	18832	37.0%	38.6%
Pornography	629	75.5%	19.6%
Predatory lending	14401	71.5%	27.6%
Privacy violations	26756	94.2%	17.0%
Protected areas	20246	40.3%	48.5%
Rare earths	82	72.0%	42.7%
Seabed mining	124	38.7%	21.0%
Soy	3142	52.4%	41.9%
Tobacco	8327	79.5%	27.0%
Water scarcity	8999	43.0%	57.5%

Table A2. Country rankings by E&S-consciousness

Country	Self-Expression Score	E&S-consciousness
Sweden	1.582	High
Norway	1.437	High
New Zealand	1.294	High
Canada	1.156	High
Australia	1.126	High
Great Britain	1.052	High
Netherlands	0.983	High
Andorra	0.980	High
Finland	0.849	High
United States	0.817	High
Switzerland	0.780	High
France	0.745	High
Germany	0.530	High
Uruguay	0.519	High
Mexico	0.494	High
Spain	0.370	High
Slovenia	0.369	High
Japan	0.365	Low
Czech Rep.	0.349	Low
Israel	0.329	Low
Italy	0.309	Low
Argentina	0.304	Low
Colombia	0.265	Low
Hong Kong	0.137	Low
Brazil	0.105	Low
Chile	0.099	Low
India	0.091	Low
Poland	0.032	Low
South Africa	0.015	Low
Philippines	-0.011	Low
Thailand	-0.036	Low
Viet Nam	-0.039	Low
Singapore	-0.172	Low
South Korea	-0.194	Low
Malaysia	-0.233	Low
Egypt	-0.253	Low
Turkey	-0.259	Low
China	-0.323	Low
Bulgaria	-0.439	Low
Indonesia	-0.499	Low
Russia	-0.584	Low
Ukraine	-0.666	Low
Romania	-0.723	Low
Morocco	-0.732	Low
Belarus	-0.874	Low

Table A3. Institutional ownership and E&S risk

This table reports OLS regression estimates of institutional ownership on E&S risk, measured by RepRisk news counts. The observations are firm-quarter. Firm controls are lagged by one quarter relative to institutional ownership. Columns (6) - (8) also control for a firm's number of governance news in the past four quarters. All specifications include year-quarter fixed effects, and firm fixed effects. The t-statistics, calculated with standard errors clustered at the firm level, are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

Panel A								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Institutional Ownership% (t)							
Total News	-0.153*** (-3.554)							
High Reach News		-0.150*** (-3.111)						
Severe News			-0.158*** (-3.317)					
Environment News				-0.235*** (-3.170)		-0.236*** (-3.183)		
Social News					-0.196*** (-3.085)		-0.193*** (-3.050)	
E&S News								-0.165*** (-3.240)
Past Governance News						-0.508** (-2.459)	-0.502** (-2.429)	-0.503** (-2.434)
Observations	190775	190775	190775	190775	190775	190775	190775	190775
Adjusted R-squared	0.954	0.954	0.954	0.954	0.954	0.954	0.954	0.954
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Institutional Ownership% (t+1)							
Total News	-0.128*** (-3.051)							
High Reach News		-0.098** (-2.046)						
Severe News			-0.135*** (-2.934)					
Environment News				-0.182** (-2.489)		-0.182** (-2.499)		
Social News					-0.150** (-2.428)		-0.147** (-2.392)	
E&S News								-0.123** (-2.491)
Past Governance News						-0.477** (-2.311)	-0.472** (-2.288)	-0.473** (-2.292)
Observations	184467	184467	184467	184467	184467	184467	184467	184467
Adjusted R-squared	0.955	0.955	0.955	0.955	0.955	0.956	0.956	0.956
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table A4. Investor preferences – domestic vs. foreign investors

This table reports OLS regressions of the change in institutional holdings by E&S-conscious institutions (indicator High Rating IO Inst) on Total News (ES News) distinguishing between investors whose portfolio have high sustainability ratings (as captured by the dummy *High Rating IO Inst*) and investors that are or are not from the same country of the firm (as captured by the dummy *Same Country*). Change in institutional holdings is defined as an institution's holdings in quarter t+1 minus holdings in quarter t-1 divided by holdings in quarter t-1. Similar to Table 5, in columns (1) and (2), we use Ln Total (ES) News, and in columns (3) and (4), we use indicator variables for whether Total (ES) News is greater than 0. The observations are at the institution-firm-year-quarter level and all specifications include firm-year-quarter fixed effects, with standard errors clustered at the institution level. The t-statistics are reported in parentheses. Statistical significance at the 10%, 5%, and 1% level is denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)
	Change in Institutional Holdings			
	Ln News Counts		Dummy if News > 0	
High Rating IO Inst	-0.010 (-0.946)	-0.011 (-1.089)	-0.009 (-0.929)	-0.010 (-1.044)
Same Country	-0.033** (-2.267)	-0.034** (-2.328)	-0.034** (-2.295)	-0.035** (-2.365)
High Rating IO Inst # Same Country	-0.004 (-0.442)	-0.004 (-0.389)	-0.003 (-0.329)	-0.003 (-0.288)
High Rating IO Inst # Total News	-0.004*** (-2.599)		-0.015** (-2.524)	
Same Country # Total News	-0.001 (-0.525)		-0.003 (-0.297)	
High Rating IO Inst # Same Country # Total News	0.001 (0.600)		0.000 (0.002)	
High Rating IO Inst # ES News		-0.004** (-2.476)		-0.014** (-2.387)
Same Country # ES News		-0.002 (-0.561)		-0.003 (-0.236)
High Rating IO Inst # Same Country # ES News		0.001 (0.522)		-0.001 (-0.094)
Observations	14,934,078	14,934,078	14,934,078	14,934,078
Adjusted R-squared	0.030	0.030	0.030	0.030
Controls	No	No	No	No
Firm*YQ FE	Yes	Yes	Yes	Yes