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DOES MONEY TALK? MARKET DISCIPLINE THROUGH SELLOFFS AND BOYCOTTS

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FINANCIAL ECONOMICS

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Abstract

Using a novel dataset of negative news coverage of the environmental and social (E&S) practices of firms around the world, we show that customers and investors can provide market discipline and impose their ethical standards on firm policies. Investors sell firms with heightened E&S risk, especially if they are from E&S conscious countries or hold portfolios with high sustainability ratings. Similarly, heightened E&S risk is associated with a drop in firms' sales in E&S conscious countries. This behavior of E&S conscious investors and customers leads to declines in stock prices, which push firms to improve their E&S policies in the years following negative realizations of E&S risk. Overall, our results indicate that customers and shareholders are able to impose their social preferences on firms, suggesting that market discipline works.

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Does Money Talk? Market Discipline through Selloffs and Boycotts

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Using a novel dataset of negative news coverage of the environmental and social (E&S) practices of firms around the world, we show that customers and investors can provide market discipline and impose their ethical standards on firm policies. Investors sell firms with heightened E&S risk, especially if they are from E&S conscious countries or hold portfolios with high sustainability ratings. Similarly, heightened E&S risk is associated with a drop in firms' sales in E&S conscious countries. This behavior of E&S conscious investors and customers leads to declines in stock prices, which push firms to improve their E&S policies in the years following negative realizations of E&S risk. Overall, our results indicate that customers and shareholders are able to impose their social preferences on firms, suggesting that market discipline works.

Keywords. Corporate social responsibility; Institutional investors; Culture; Environment; Corporate governance

JEL Codes. G15, G23, G30, M14

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 standards and may be willing to pay a cost if firms meet their preferences.[1] As a consequence, small investors and customers are expected to vote with their wallets and spurn firms that fall short of their expectations on ethical norms and environmental and social (E&S) principles.

However, market discipline may not be very effective if the combined impact of investors' and customers' actions is not large enough to affect firm valuations. In addition, even if firm valuations were temporarily affected, managers who are rewarded for long-term profitability may not necessarily have incentives to improve corporate E&S policies (Davies and Van Wesep, 2018). Instead, managers could rely on the fact that investors tend to have limited attention or memory and may quickly go back to demanding a firm's stock following a negative shock to its reputation on E&S policies. Customers may also be quick to forget 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 really vote with their wallets. And even if they do, we have no evidence on whether their behavior is successful in affecting firms' E&S policies. That is, can market discipline really trigger changes in corporate behavior? Existing evidence shows that significant shareholders, typically large institutional investors, are able to negotiate with

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[1] For instance, in a 2018 investor survey, 43% of respondents incorporate ESG factors in their decision making, up from 22% in 2013. See the survey at https://www.callan.com/wp-content/uploads/2018/07/Callans-2018-ESG-Survey.pdf. Consistently, Riedl and Smeets (2017) show that mutual funds' investors are willing to accept lower returns and pay higher fees to SRI funds. Similarly, numerous anecdotes about product boycotts suggest that customers care about firms' ESG standards.

management for better E&S policies. Little is known about whether investors and customers can impose market discipline with their purchases and sales of firms' shares and products.

This lack of evidence largely reflects the difficulties of capturing changes in investors' and customers' discontent with firms' E&S policies. We overcome this obstacle using a novel dataset, which aims to monitor 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, and others. We thus capture heightened ESG risks by increased company-specific media coverage of potential violations of internal or external ESG standards. Importantly, we are also able to isolate environmental and social (E&S) risks from broader firm governance risk and to focus on the former.

We then explore how investors and customers with different social preferences, measured using either the cultural attitudes towards E&S issues in their countries of origin or their investment portfolios' sustainability ratings, react to E&S risks. We find that E&S conscious investors – institutional investors from countries with pro-environmental and pro-social behaviors or investors that hold portfolios with high sustainability ratings – decrease their shareholdings in firms experiencing heightened E&S risks. Similarly, the sales of firms facing heightened E&S risks decrease in countries that are friendlier to E&S issues. As a consequence of the actions of E&S conscious investors and consumers, firms' stock returns drop following negative realizations of E&S risks.

We show not only that investors' trading and customers' purchases affect stock prices, but also that companies subsequently improve their E&S policies to mitigate the negative effects

of prior increases in E&S risk and avoid possibly worse consequences in the future. Overall, our results indicate that through their sales and purchases, investors and customers can effectively impose their social preferences on firms, suggesting that market discipline indeed works.

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., Dyck et al., 2019; Dimson et al., 2015 and 2018; Starks et al., 2018; Krueger, Starks, and Sautner, 2019; Chen Dong and Lin, 2019). In the same vein, Dai, Liang and Ng (2019) show that customers engage with their suppliers to improve their ESG policies. To the best of our knowledge, we are the first to investigate whether the discontent of smaller investors and customers affects their purchasing and selling decisions and, consequently, corporate valuations and policies.

Our paper is also related to recent work exploring how increased transparency of mutual funds' sustainable investments affects their assets under management. For instance, Hartzmark and Sussman (2019) show that the assets under management of the best-rated funds grew after Morningstar introduced sustainability ratings. They do not study whether increased awareness of sustainability ratings affects corporate policies. In principle, the sustainable investments of funds that do not aspire to high ESG ratings could have decreased. It is therefore important to explore the effects of market discipline on firm policies.

1. Data and Descriptive Statistics

1.1 Measuring E&S Risk

RepRisk is a leading business research provider, specializing in measuring ESG and business conduct risks. RepRisk serves the world's largest investors and provides its clients with

intelligence on any adverse information about companies' business conduct related to environmental degradation, child labor, corruption, and other similar risks.

Starting from 2007, RepRisk compiles daily updates of negative news counts on company-specific issues. Based on primary ISINs, RepRisk covers 10,171 (non-financial) firms around the world. News is classified in 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 depending on whether it has been distributed in specialized blogs, national or international media outlets.[2] The classification into issues and topics is performed based on 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, for each firm, it aggregates news by type 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. We exploit this file 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 risk 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 analysis that follows, we separate environmental and social from governance news, and control for past governance news to focus

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[2] Additional details about RepRisk and its measures are provided in the Appendix.

explicitly on firms' E&S risk exposure. Since institutional investors' shareholdings are available at the quarterly frequency, we 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 A.1 in the Appendix shows the frequency of the issues and topics of the news covered by RepRisk. The news is seldom about dramatic events, such as the BP Gulf of Mexico oil spill, which are by their very nature infrequent. Rather, RepRisk news captures violations of national regulations or international standards, poor employment conditions and discrimination, tax evasion, etc. This negative news is to be considered an early warning, which may affect investors' and customers' decisions, and may in turn influence firm behavior.

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

1.2 Ownership Data and Institutional Investors' Classification

We obtain ownership data from FactSet LionShares. For each firm, we compute the percentage ownership by institutions from a given country. We then classify institutional investors depending on their preferences on E&S issues using the cultural values in the investors'

countries of origin. We infer cultural values, and in particular, the values that different countries' nationals put on E&S issues from their responses in the World Value Survey (WVS).

The WVS is a unique data source for analyzing trends in social, political, and cultural values, demographics, and public opinion 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, the WVS surveys individuals in each country 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. Thus, it allows us to measure international differences in concerns about E&S issues.

A well-known shortcoming of the WVS is that not all questions are asked in all countries in all survey rounds, and the wording of questions may change in different rounds. These limitations are easily overcome because researchers have shown that answers to survey questions tend to cluster in coherent patterns (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 are expected to care about E&S policies to a larger extent.

We consider institutional investors from countries with a WVS survival/self-expression factor in the top quintile 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 countries in our sample based on their self-expression score and classification 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 are known to 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 funds in our sample fit this description. For these funds, we average the ESG ratings of the rated companies held over the previous two years. For the rest of the funds, we set the average ESG rating equal to zero. According to this second definition, we define funds with average portfolio ESG ratings in the top tercile as E&S conscious (*High Rating IO%*). We consider the remaining funds as non-E&S conscious (*Low Rating IO%*).

As evident from Panel B of Table 1, this fund classification has not only more variation but also low correlation with the first definition based on country culture. Thus, the two definitions capture truly independent variation in E&S preferences.

In our subsequent tests, we consider the effects of heightened E&S risk, measured by counts of various RepRisk news categories, on the proportion of ownership by E&S conscious

and other investors. We then study how changes in institutional ownership affect firms' valuations and future changes in E&S policies.

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%). Thus, considering the behavior of both E&S conscious institutional investors and customers allows us to examine two independent channels.

In what follows, we explore how sales to countries with different sensitivities towards E&S issues are affected by negative realizations of E&S risk.

1.4 Other Data

We use a number of data sources to evaluate firms' outcomes. First, we obtain stock prices and other financial data from Datastream and Worldscope. Second, we evaluate changes in firms' E&S policies using annual Thomson Reuters' ASSET4 ESG ratings. ESG analysts at Thomson Reuters evaluate firms' environmental policies in the three following 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 category, ASSET4 analysts consider specific items, such as "Does the company set specific objectives to be achieved on emission reduction?". Based on the answers to these questions, ASSET4 constructs a proprietary score ranging from 0 to 100 for each major category (ENV and SOC) as well as each of the ten subcategories listed above for each covered firm in a given year.

Finally, in robustness tests, we also use Ravenpack to explore how institutions react to general negative media coverage. We count firm-specific negative news, which we define as news with Ravenpack event sentiment score below 25, i.e., extremely negative sentiment. Most of the negative news about a firm do not concern its ESG policies, as 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, 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 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 news coverage. On the other hand, media coverage tends to cater to the interests and ideology of readers and other followers (Mullainathan and Shleifer, 2005). Since the processing of information about environmental and social 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 describes which firms receive more RepRisk coverage. Firms with more E&S conscious institutional ownership and higher sales to E&S conscious countries are more likely to experience heightened E&S risk, measured by RepRisk news counts. Also, consistent with the idea that the E&S policies of some firms attract more attention, firms with higher Thomson ESG rating in 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.

This evidence is consistent with the idea that investors' and customers' interest in the firms' E&S policies generates higher news coverage. This interpretation is also supported by the observation that while firms with higher Thomson 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 still 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 the firm characteristics that we have identified to affect the coverage of individual firms' E&S policies and explore the cross-sectional differences in the effects of E&S risk on firms with investors and customers with different preferences for E&S policies.

2. Empirical Strategy

Our analysis consists of several steps. We first explore whether investors and customers respond negatively to heightened E&S risk and whether there are cross-sectional differences

between investors and customers with different E&S 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 following negative realizations of E&S risk (Heinkel, Kraus, Zechner, 2001). Similarly, a backlash from customers would imply a greater drop in sales in countries with stronger E&S preferences.

Evidence in support of these tests would establish two potential channels through which E&S risk may affect negatively firm valuations. First, controlling for the intensity of E&S risk, firms that suffer large drops in the demand for equity by E&S conscious investors should experience more negative abnormal returns when news about E&S risk is reported. Second, firms experiencing a more pronounced backlash by customers from E&S conscious countries are likely to experience more negative abnormal returns when E&S news is revealed.

To establish evidence that market discipline due to investors' and customers' E&S preferences indeed works, we should observe that firms subsequently 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 to avoid even worse consequences in the future. On the other hand, this does not have to be the case if managers rely on customers' and investors' limited attention or memory and just wait to 'get out of the storm' without improving their E&S policies to reestablish their reputations. Therefore, as the final part of our analysis, we explore whether the E&S policies of firms that are more exposed to E&S risk realizations – due to a particularly E&S conscious investor or customer base – improve to a larger extent in the years following the revelation of negative E&S news.

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

3.1 Institutional Ownership

We explore how total institutional ownership, and in particular, the composition of institutional ownership is affected by news uncovering negative developments about a firm's E&S policies. Specifically, we regress the percentage of shares owned by institutions in a firm f at the end of quarter t on the (natural logarithm) of news counts about E&S risk issues:

$$IO_{ft} = \alpha + \beta \times E\&S\ Risk_{ft} + \gamma X_{ft} + \delta_f + \xi_t + \varepsilon_{ft}$$

In all regressions, we include firm (δ_f) and year (ξ_t) fixed effects, and a host of firm controls (X_{ft}), including market value, cash holdings, dividend yield, asset tangibility, return on assets (ROA), leverage, average return over the previous year, the concentration of institutional ownership, the Thompson Reuters ESG rating, and an indicator variable for whether the firm has such a rating.

Thus, the coefficient on $E\&S\ Risk_{ft}$ captures whether in quarter t, in which a firm experiences more negative E&S coverage, institutional ownership is below the firm's average institutional ownership over the sample period. This timing implicitly assumes that investors' sales occur within the same quarter in which the negative news coverage occurs. We also consider the effects of $E\&S\ Risk_{ft}$ on IO_{ft+1} to evaluate whether there are delayed effects and whether the contemporaneous effects are persistent.

Table 3 presents the results. Panel A shows that the percentage of institutional ownership in a firm decreases in quarters in which there is more negative news coverage of its E&S policies. 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 general negative news about corporate governance. The effect of E&S risk on institutional ownership is not only statistically, but also highly economically significant. For instance, in column 1, an average number of news is associated with a drop in institutional ownership of 10.2% relative to the within-firm standard deviation of institutional ownership.[3]

Panel B shows that the negative effects of heightened E&S risk are not reversed; on the contrary, institutional ownership continues to decrease in the subsequent quarter, albeit to a lower extent. These results suggest that investors do not have limited attention or memory. Therefore, investor demand for a firm's shares can potentially lead to market discipline.

To provide more direct evidence about this mechanism, we separate the ownership stakes of institutional investors from countries that we classify as having high versus low E&S concerns. The composition of institutional owners can help us shed light on whether investors sell because of their preferences for E&S friendly firms or whether all institutional investors sell in anticipation of poor performance.

Table 4 provides evidence that non-pecuniary motives matter in explaining changes in institutional ownership. In Panel A, the dependent variable is the percentage of shares outstanding held by institutional investors from countries that we designate as E&S conscious – *High ENV IO%.* Since an overwhelming majority of institutions are classified as E&S conscious, it is unsurprising that the negative coefficients on the different proxies for E&S risk are statistically significant across specifications. They are also 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%* (2.9).

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[3] The economic magnitude is calculated as -0.153*ln(1+44)/5.7, where the average (quarterly) number of news for firms with non-zero news is 44 and the within-firm standard deviation of institutional ownership is 5.7.

More interestingly, Panel B shows that investors from countries that favor to a lesser extent E&S policies – labeled as *Low ENV IO%* – increase their shareholdings in companies experiencing heightened E&S risk. This evidence suggests that institutional investors' preferences about E&S policies affect demand for a firm's shares.

Table 5 repeats the tests in Table 4, using the alternative 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 not only statistically, but also economically significant. 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. Consistent with our results in Table 4, these 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.

One may wonder whether investors' divestitures are indeed driven by bad news about firms' E&S policies. Alternatively, institutions from countries with well-developed asset management industries may be more skilled and just react more to negative firm-specific news in general. As a result, our estimates exploiting differences in countries' attitudes towards E&S issues may just pick up the effects of higher financial development.

We argue that this is unlikely because our results are obtained when controlling for a host of firm characteristics, including past returns. Nevertheless, to better evaluate the merits of this alternative explanation, we consider how investors from different countries react to negative

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general news coverage, using data from Ravenpack. If we are 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.

Table 6 shows that the shareholdings of institutions from E&S conscious countries increase when there is general negative news coverage of a company during a quarter, 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 news on enhanced E&S risk. Thus, the patterns in institutional ownership we highlight are unlikely to be driven by investors' general reaction to negative news coverage and more likely to capture investor preferences for E&S issues.

Given that E&S conscious investors sell when they are concerned about E&S risk, but other investors buy, it is important to ask whether the reaction of E&S conscious investors is large enough to affect firm valuations and discipline corporate policies.

3.2 Sales Composition

E&S conscious individuals are likely to care not only about the E&S policies of the companies whose shares they hold, but also about the policies of the firms that produce the goods they purchase. This behavior is likely to affect not only firms that sell final goods, but also firms selling intermediate goods. Companies in E&S conscious countries are likely to have more E&S conscious investors and customers because local biases shape the geography of investment and sales (Bernard, Moxnes and Saito, 2019). Since ESG ratings take into account the E&S policies of a 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 when there is negative news coverage about the firm's E&S policies. Specifically, in Table 7, we estimate an equation analogous to the one we use to study changes in institutional ownership, considering instead sales to E&S conscious customers. The observations in these specifications are firm-year.

Panel A of Table 7 shows that the proportion of a firm's sales to countries with stronger preferences towards E&S policies decreases in years with more negative E&S news. This effect is economically significant; in column 1, an average number of news is associated with a drop in firm sales in E&S countries of 10.6%, relative to the within-firm standard deviation of *Percent High ENV Sales*.[4] We confirm these results in Panel B, where we use the natural log of sales to E&S conscious countries. However, in Panel C, we do not find any effect of changes in E&S risk on firm sales to less E&S conscious countries.

Table 8 performs a placebo test. It explores how the proportion of sales to E&S conscious countries varies with negative general news about a firm. To the extent to which E&S countries are richer, 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, independently from whether these concerns are due specifically to E&S issues. In column 1, we do not find any evidence that E&S conscious customers respond differentially to general negative news coverage about the firm. While the proportion of sales to High ENV countries is unaffected, in column 2, we find that the sales of firms with negative news coverage drop. Thus, all customers appear to be concerned about firms' reputational risk, but only E&S conscious customers react to heightened E&S risk, suggesting that their preferences on E&S issues matter.

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[4] The economic magnitude is calculated as -0.138*ln(1+86)/5.8, where the average (annual) number of news for firms with non-zero news is 86 and the within-firm standard deviation of *Percent High ENV Sales* is 5.8.

Overall, these results indicate that consumers and investors attempt to vote with their wallets in an effort to impose their social preferences on the firms they interact with. In what follows, we ask whether the actions of E&S conscious investors and customers are effective in influencing firms' subsequent E&S policies.

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

Since managerial compensation and job security are closely linked to stock prices, investors' divestitures and consumers' backlash can provide market discipline through decreases in corporate valuations. Even if the negative news coverage we exploit does not reflect 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. In Table 9, 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 French three-factor model. Then, we cumulate abnormal returns from one day before to one day after the news coverage. Since negative news coverage of E&S policies tends to be clustered over time, we define the events in several ways. First, we consider any media coverage as a single event. Second, we consider news that is followed by more news coverage of the same company over the next five days as major negative realizations of E&S risk. In these tests, we define the first news in the sequence as the event. Finally, we consider as events only high reach or severe news. The univariate evidence in Panel A of Table 9 clearly shows that firms experience negative abnormal returns around the realizations of E&S risk.

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In Panel B of Table 9, we investigate the cross-sectional determinants of firms' 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 negative abnormal returns. 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 stronger reactions when they experience negative realizations of E&S risk, suggesting that the market anticipates the investors' selloffs and the customers' backlash. This is especially true if we consider negative news that are followed by more negative news coverage within five days or in the case of 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, as captured by news followed by more news within five days or by severe and high reach news. 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 news followed by other news within five days, imply that a firm with *High ENV IO%* (*High Rating IO%*) in the top quintile experiences 0.35% (0.28%) lower three-day market-adjusted returns. Similarly, a firm with *High ENV Sales* in the top quintile (column 5) experiences 0.30% lower three-day market-adjusted returns. We obtain similar results when we use the Fama-French three-factor model as the benchmark in the computation of abnormal returns.

Overall, this evidence suggests that investors' divestitures and customers' backlash affect firms' valuations and act as early warnings even for firms experiencing relatively minor negative realizations of E&S risk. Thus, it appears natural to ask whether firms act upon these early warnings and change their subsequent E&S policies in an attempt to repair their reputations. This would indicate that market discipline indeed works.

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

Finally, we explore whether investors' and customers' behavior has any long-term effects on corporate E&S policies. In particular, we would be able to conclude that market discipline is effective if we observe that companies that experience larger price drops following heightened E&S risk become more attentive to these issues and improve their future E&S policies.

In Panel A of Table 10, we test this hypothesis by estimating a reduced form regression in which we relate a firm's Thomson Reuters ESG score at $t+1$ to our RepRisk measures of E&S risk at t, interacted with the percentage ownership of institutions from countries that value E&S issues or the percentage ownership of institutions with high sustainability ratings during the previous year $t-1$. Similarly, we interact our proxies for E&S risk with the proportion of sales to countries with E&S conscious customers in year $t-1$. As shown before, firms with E&S conscious investors and customers experience larger drops in stock prices when there are negative realizations of E&S risk. Fearing even worse long-term consequences, these firms should experience greater market discipline and improve their policies to a larger extent.

Panel A of Table 10 supports our conjecture that market discipline has real effects. 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. The effect is not only statistically,

but also highly economically significant. In column 1 (column 2), firms that have a one-standard-deviation higher proportion of E&S conscious investors – *High ENV IO%* (*High Rating IO%*) – before experiencing an average increase in E&S risk improve their ESG ratings by 1.7 (1.8) points (relative to the within-firm standard deviation of 11.5). In column 3, a one-standard-deviation higher proportion of sales to E&S conscious countries results in an improvement of a firm's ESG rating by 1.6 points.

This result is obtained 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 (Lins, Servaes, and Tamayo, 2017; Hong and Liskovich, 2014). 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 a firm's ESG policies and, in fact, its effect is negative, refuting this alternative explanation.

In addition, the improvements in future ESG policies we highlight appear to depend on customers' and investors' backlash, but not on the firm's initial ESG rating, as all results are obtained including firm fixed effects. Firm fixed effects also capture systematic differences is E&S policies related to the firms' countries of origin 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.

Firms' 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). To evaluate the robustness of our results to an alternative proxy for firms' E&S policies, in Panel B, we report similar tests in which we use the RepRisk index to assess ESG

risk, instead of the Thompson Reuters ESG score. The estimates confirm the results in Panel A. In the year following negative news coverage of their E&S policies, firms with more E&S conscious investors and customers improve their E&S policies to a larger extent, as captured by a reduced RepRisk index.

To corroborate our interpretation of the empirical evidence, in Table 11 we consider whether market discipline is more effective in industries with a higher dispersion in E&S policies. Some industries are naturally more likely to have worse environmental policies, such as higher pollution. As a result, firms in these industries may not be able to improve their ratings. Other industries may be naturally more environmentally friendly. In industries with a higher dispersion in E&S policies, market discipline should be more effective because firms are presumably better able to choose alternative policies.

Table 11 examines the policy responses of firms with different levels of E&S conscious customers and investors by separately considering industries with high and low dispersion of Thomson Reuters ESG ratings. Our results show that the real effects are driven by industries with high variability in ratings, which is consistent with our interpretation of the empirical evidence.

6. Alternative Explanations: Market Discipline versus Blockholder Engagements

Our results so far suggest that market discipline operates through investors' divestitures and 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 have been obtained independently from the divestitures of E&S conscious investors and the backlash of E&S conscious customers.

Table 12 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 the findings of previous literature 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.[5]

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. Blockholder engagement does not appear to play a role following negative realizations of E&S risk, 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 and consumers' boycotts 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

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

divestitures and stronger customer backlash 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. Thus, better disclosure may enhance market discipline.

Unfortunately, regulatory agencies have been reluctant to impose uniform disclosure standards regarding E&S issues, despite strong pressure from institutional investors.[6] While the media and private data providers, driven by increased interest in E&S issues, have stepped in to provide information on firms' long-term sustainability policies, mandated standards of disclosure may enhance market discipline and become a powerful instrument in incentivizing firms to adopt E&S friendly policies.

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

References

Abramson, P. R. and R.F. Inglehart. (1995). Value change in global perspective. Ann Arbor: University of Michigan Press.

Berg, F., J. F. Kölbel, and R. Rigobon. (2019). Aggregate Confusion: The Divergence of ESG Ratings. Working Paper. MIT.

Bernard, A. B., A. Moxnes, and Y. U. Saito. (2019). Production Networks, Geography and Firm Performance. *Journal of Political Economy* 127, 639–688.

Chen, T., D. Hui, and C. Lin. (2019). Institutional shareholders and corporate social responsibility. *Journal of Financial Economics,* forthcoming.

Dai, R., Liang, H., and L.K. Ng. (2019). Socially Responsible Corporate Customers. *Journal of Financial Economics,* forthcoming.

Davies, S. W., and E. D. Van Wesep. (2018). The unintended consequences of divestment. *Journal of Financial Economics*, 128, 558–575.

Dimson, E., Karakaş, O., and Li, X. (2015). Active Ownership. *The Review of Financial Studies* 28, 3225–3268.

Dimson, E., Karakaş, O., and Li, X. (2018). Coordinated Engagements. *Working Paper*

Dyck, A., K. V. Lins, L. Roth, and H. F. Wagner. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*, 131, 693–714.

Hassan, T. A., S. Hollander, L. van Lent, and A Tahoun. (2019). Firm-Level Political Risk: Measurement and Effects. *Quarterly Journal of Economics* 134, 2135–2202.

Hartzmark, S. M., and A. B. Sussman. (2018). Do investors value sustainability? A natural experiment examining ranking and fund flows, *Journal of Finance*, Forthcoming.

Heinkel, R., A. Kraus, and J. Zechner. (2001). The effect of green investment on corporate behavior. *Journal of Financial and Quantitative Analysis* 36, 431–449.

Hong, H. and I. Liskovich. (2014). Crime, punishment and the halo effect of corporate social responsibility. Working Paper, Princeton University.

Inglehart, R. (1997). Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies. Princeton University Press, Princeton, NJ.

Inglehart, R. and W. Baker. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review* 65, 19–51.

Kahan, D. M. (2013). Ideology, motivated reasoning, and cognitive reflection. *Judgment and Decision Making* 8(4), 407–424.

Krueger, P., Z. Sautner, and L. T. Starks. (2019). The Importance of Climate Risks for Institutional Investors. *Review of Financial Studies*, forthcoming.

Liang, H., and L. Renneboog. (2017). On the Foundations of Corporate Social Responsibility. *Journal of Finance* 72, 853–910.

Lins, K. V., H. Servaes, and A. Tamayo. (2017). Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. *Journal of Finance*, 72, 1785–1824.

Mullainathan, S., and A. Shleifer. (2005). The Market for News. *American Economic Review*, 95, 1031-1053.

Riedl, A., and P. Smeets. (2017). Why Do Investors Hold Socially Responsible Mutual Funds? *Journal of Finance*, 72, 2505–2550.

Starks, L. T., P. Venkat, and Q. Zhu. (2017). Corporate ESG Profiles and Investor Horizons. Working Paper, University of Texas Austin.

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 quintile (not in the top quintile) 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 quintile of the WVS self-expression score. All other variables are defined in the Appendix.

	(1)	(2)	(3)	(4)	(5)
Variable	Num Obs	Mean	Std Dev	10th	90th
Panel A – E&S Risk					
RepRisk					
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					
FactSet					
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					
FactSet Revere					
High ENV Sales	48,142	42.683	39.798	0.000	100.000
Ln High ENV Sales	48,142	22.304	2.968	18.990	26.416
Ln Low ENV Sales	48,142	18.220	8.667	0.000	26.200
Ln Sales	48,142	16.089	9.289	0.000	23.928
Panel D - Other Data					
Datastream					
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
Ravenpack					
Total Negative News	191,895	0.551	1.730	0.000	2.000
Thomson Reuters' ASSET4 ESG					
CSR Strategy Score	20,974	55.246	27.509	19.15	91.43

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

Table 3. Institutional ownership and environmental and social (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)
				Inst 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***		-0.200***		
				(-3.170)		(-2.756)		
Social News					-0.196***		-0.166***	
					(-3.085)		(-2.661)	
E&S News								-0.141***
								(-2.813)
Past Governance News						-0.500**	-0.495**	-0.495**
						(-2.426)	(-2.402)	(-2.406)
Market Value	4.052***	4.051***	4.052***	4.053***	4.053***	4.053***	4.054***	4.054***
	(26.332)	(26.321)	(26.331)	(26.325)	(26.340)	(26.018)	(26.035)	(26.031)
Cash	-0.212	-0.218	-0.213	-0.212	-0.213	-0.108	-0.109	-0.109
	(-0.255)	(-0.262)	(-0.256)	(-0.256)	(-0.256)	(-0.128)	(-0.129)	(-0.129)
Div Yld	0.149***	0.149***	0.149***	0.149***	0.149***	0.146***	0.146***	0.146***
	(4.867)	(4.859)	(4.879)	(4.863)	(4.869)	(4.755)	(4.759)	(4.758)
Tangibility	0.807	0.814	0.807	0.824	0.812	0.820	0.810	0.813
	(1.110)	(1.121)	(1.111)	(1.135)	(1.118)	(1.117)	(1.102)	(1.107)
ROA	2.672***	2.676***	2.676***	2.670***	2.676***	2.650***	2.655***	2.653***
	(3.999)	(4.005)	(4.005)	(3.995)	(4.005)	(3.963)	(3.971)	(3.968)
Leverage	0.266	0.259	0.266	0.259	0.267	0.301	0.308	0.306
	(0.535)	(0.521)	(0.534)	(0.520)	(0.537)	(0.600)	(0.615)	(0.610)
Average Return	-4.124***	-4.096***	-4.109***	-4.114***	-4.112***	-4.081***	-4.081***	-4.085***
	(-3.549)	(-3.523)	(-3.534)	(-3.539)	(-3.538)	(-3.482)	(-3.482)	(-3.485)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO Concentration	-0.017***	-0.017***	-0.017***	-0.017***	-0.017***	-0.014***	-0.014***	-0.014***
	(-7.377)	(-7.393)	(-7.374)	(-7.388)	(-7.377)	(-6.284)	(-6.281)	(-6.284)
Thomson Rated	2.017***	2.014***	2.013***	2.013***	2.014***	2.072***	2.074***	2.075***
	(7.597)	(7.587)	(7.584)	(7.583)	(7.589)	(7.742)	(7.746)	(7.748)
Thomson Rating	0.013**	0.013**	0.013**	0.013**	0.013**	0.013**	0.013**	0.013**
	(2.315)	(2.288)	(2.305)	(2.293)	(2.303)	(2.225)	(2.232)	(2.235)
Constant	-9.418***	-9.421***	-9.424***	-9.433***	-9.432***	-9.356***	-9.356***	-9.357***
	(-6.397)	(-6.398)	(-6.401)	(-6.407)	(-6.407)	(-6.269)	(-6.270)	(-6.271)
Observations	190775	190775	190775	190775	190775	186600	186600	186600
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Inst 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**		-0.155**		
				(-2.489)		(-2.166)		
Social News					-0.150**		-0.125**	
					(-2.428)		(-2.068)	
E&S News								-0.104**
								(-2.140)
Past Governance News						-0.477**	-0.473**	-0.474**
						(-2.324)	(-2.305)	(-2.308)
Observations	184467	184467	184467	184467	184467	180320	180320	180320
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 4. 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 quintile (not in the top quintile) 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)		-0.126** (-1.961)		
Social News					-0.145*** (-2.685)		-0.131** (-2.453)	
E&S News								-0.101** (-2.386)
Past Governance News						-0.254 (-1.567)	-0.251 (-1.544)	-0.251 (-1.549)
Observations	190775	190775	190775	190775	190775	186600	186600	186600
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)
				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***		0.020***		
				(7.055)		(6.650)		
Social News					0.022***		0.020***	
					(8.783)		(8.258)	
E&S News						0.025***	0.024***	0.024***
						(4.655)	(4.568)	(4.585)
Past Governance News								0.015***
								(8.224)
Observations	190775	190775	190775	190775	190775	186600	186600	186600
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & YQ FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 5. Institutional ownership 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***	-0.255***
				(-3.770)	(-3.707)
Past Governance					-1.244***
					(-4.236)
Observations	190814	190814	190814	190814	190814
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***	0.177**
				(2.594)	(2.549)
Past Governance					0.840***
					(3.098)
Observations	190814	190814	190814	190814	190814
Controls	Yes	Yes	Yes	Yes	Yes
Firm YQ FE	Yes	Yes	Yes	Yes	Yes

Table 6. Institutional ownership and firm general negative news coverage

This table reports OLS regression estimates of E&S conscious institutional ownership on one plus the natural logarithm of general negative news counts from Ravenpack. The observations are firm-quarter. 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.

	(1)	(2)	(3)	(4)
	Low ENV IO %	High ENV IO %	Low Rating IO %	High Rating IO %
General Negative News	0.002	0.137**	-0.725***	0.896***
	(1.196)	(2.323)	(-8.478)	(10.381)
Observations	190775	190775	190814	190814
Controls	Yes	Yes	Yes	Yes
Firm YQ FE	Yes	Yes	Yes	Yes

Table 7. 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 is the percentage of sales in high E&S conscious countries for firm *i* in year *t*. The dependent variable in Panel B (Panel C) 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)
				Percent High ENV Sales				
Total News	-0.138*							
	(-1.866)							
High Reach News		-0.326***						
		(-4.199)						
Severe News			-0.189**					
			(-2.399)					
Environment News				-0.253**		-0.254**		
				(-2.349)		(-2.355)		
Social News					-0.224**		-0.223**	
					(-2.337)		(-2.334)	
E&S News								-0.179**
								(-2.162)
Past Governance News						-0.168	-0.156	-0.159
						(-0.603)	(-0.560)	(-0.572)
Observations	39491	39491	39491	39491	39491	39491	39491	39491
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 High ENV Countries				
Total News	-0.089***							
	(-3.253)							
High Reach News		-0.170***						
		(-5.707)						
Severe News			-0.106***					
			(-3.789)					
Environment News				-0.114***		-0.113***		
				(-2.850)		(-2.840)		
Social News					-0.128***		-0.128***	
					(-3.593)		(-3.595)	
E&S News								-0.089***
								(-2.849)
Past Governance News						0.064	0.070	0.068
						(0.493)	(0.538)	(0.523)
Observations	39491	39491	39491	39491	39491	39491	39491	39491
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Ln Sales from Low ENV Countries				
Total News	-0.014							
	(-0.774)							
High Reach News		-0.019						
		(-0.874)						
Severe News			-0.006					
			(-0.258)					
Environment News				-0.009		-0.008		
				(-0.299)		(-0.283)		
Social News					-0.033		-0.033	
					(-1.281)		(-1.285)	
E&S News								-0.017
								(-0.782)
Past Governance News						0.081	0.082	0.081
						(1.102)	(1.113)	(1.106)
Observations	38716	38716	38716	38716	38716	38716	38716	38716
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8. Geographical distribution of sales and firm 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	0.013	-0.035***
	(0.486)	(-3.045)
Observations	32267	32267
Controls	Yes	Yes
Firm Year FE	Yes	Yes

Table 9. Stock returns and E&S risk

This table reports short-term stock returns (in percentages) around E&S risk events, measured by RepRisk news. Panel A reports univariate *t*-tests of short-term CARs, computed starting one day before and ending one day after the realization of RepRisk news. Abnormal returns are market-adjusted or estimated as the residuals of a three-factor Fama-French model. Panel B presents cross-sectional regression estimates. 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

Sample	All News	More News within 5 days	High Reach or Severe News
Market adjusted CARs (-1,1)			
mean	-0.142	-0.105	-0.171
t-value	-13.8	-5.8	-11.9
N	113349	28732	57716
FF3 adjusted CARs (-1,1)			
mean	-0.142	-0.103	-0.166
t-value	-14.2	-5.85	-11.8
N	113349	28732	57716

Panel B. Multivariate analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					All News					
	CAR (-1,+1) - Market adjusted					CAR (-1,+1) - FF3 adjusted				
High ENV IO	-0.168***			-0.164***		-0.130**			-0.125**	
	(-3.168)			(-3.085)		(-2.551)			(-2.447)	
High Rating IO		-0.132***			-0.130***		-0.088*			-0.086*
		(-2.846)			(-2.802)		(-1.892)			(-1.834)
High ENV Sales			-0.053	-0.039	-0.049			-0.066	-0.055	-0.063
			(-0.972)	(-0.711)	(-0.896)			(-1.227)	(-1.022)	(-1.174)
Observations	71215	71215	71215	71215	71215	71215	71215	71215	71215	71215
Ctry*Year Ind FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					More News Within 5 Days					
	CAR (-1,+1) - Market adjusted					CAR (-1,+1) - FF3 adjusted				
High ENV IO	-0.372***			-0.345***		-0.346***			-0.316***	
	(-3.264)			(-3.047)		(-3.027)			(-2.761)	
High Rating IO		-0.289***			-0.276***		-0.205**			-0.190*
		(-2.818)			(-2.714)		(-2.054)			(-1.925)
High ENV Sales			-0.322**	-0.278**	-0.303**			-0.357**	-0.317**	-0.344**
			(-2.296)	(-2.014)	(-2.178)			(-2.520)	(-2.256)	(-2.440)
Observations	17432	17432	17432	17432	17432	17432	17432	17432	17432	17432
Ctry*Year Ind FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					Severe or High Reach News					
	CAR (-1,+1) - Market adjusted					CAR (-1,+1) - FF3 adjusted				
High ENV IO	-0.250***			-0.233***		-0.226***			-0.207***	
	(-3.281)			(-3.053)		(-2.955)			(-2.718)	
High Rating IO		-0.226***			-0.216***		-0.160**			-0.150**
		(-3.256)			(-3.100)		(-2.394)			(-2.226)
High ENV Sales			-0.224***	-0.204**	-0.215***			-0.231***	-0.214***	-0.225***
			(-2.817)	(-2.533)	(-2.707)			(-2.903)	(-2.644)	(-2.821)
Observations	35669	35669	35669	35669	35669	35669	35669	35669	35669	35669
Ctry*Year Ind FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10. ESG policy responses

This table reports OLS regression estimates of firm policy responses on E&S risk, measured by RepRisk news counts. The observations are firm-year. In Panel A (Panel B), the dependent variable is a firm's CSR Strategy Score (RepRisk Index) in year $t+1$. All models include lagged firm controls and firm-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. CSR Strategy Score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					CSR Strategy Score					
Total News	-0.289	-0.141	-0.491*	-0.465*	-0.468*					
	(-1.626)	(-0.925)	(-1.802)	(-1.715)	(-1.729)					
E&S News						-0.479**	-0.316*	-0.915***	-0.871***	-0.892***
						(-2.170)	(-1.709)	(-2.791)	(-2.678)	(-2.737)
High ENV IO	-0.001			0.019		0.009			0.028	
	(-0.028)			(0.450)		(0.212)			(0.675)	
High Rating IO		-0.084**			-0.096**		-0.062*			-0.074**
		(-2.228)			(-2.327)		(-1.788)			(-2.026)
High ENV Sales			-0.038	-0.030	-0.033			-0.033	-0.031	-0.031
			(-1.569)	(-1.230)	(-1.346)			(-1.388)	(-1.286)	(-1.302)
Total News # High ENV IO	0.011***			0.010***						
	(3.576)			(2.784)						
Total News # High Rating IO		0.027***			0.026***					
		(2.820)			(2.662)					
Total News # High ENV Sales			0.009**	0.003	0.005					
			(2.320)	(0.705)	(1.375)					
E&S News # High ENV IO						0.010***			0.008*	
						(2.638)			(1.890)	
E&S News # High Rating IO							0.020*			0.019*
							(1.884)			(1.761)
E&S News # High ENV Sales								0.011**	0.006	0.008*
								(2.555)	(1.129)	(1.797)
Observations	14843	14848	13599	13591	13595	14843	14848	13599	13591	13595
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. RepRisk Index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					RepRisk Index					
Total News	3.632***	3.496***	3.558***	3.541***	3.558***					
	(47.992)	(52.470)	(35.163)	(35.062)	(35.262)					
E&S News						3.630***	3.362***	3.572***	3.526***	3.589***
						(30.277)	(32.302)	(19.856)	(19.736)	(20.130)
High ENV IO	0.015*			0.006		0.012			0.005	
	(1.766)			(0.680)		(1.318)			(0.502)	
High Rating IO		0.008			0.002		-0.020*			-0.012
		(0.713)			(0.155)		(-1.693)			(-0.971)
High ENV Sales			0.012*	0.009	0.011			0.010	0.007	0.009
			(1.652)	(1.186)	(1.441)			(1.119)	(0.769)	(1.008)
Total News # High ENV IO	-0.010***			-0.005***						
	(-6.688)			(-2.977)						
Total News # High Rating IO		-0.026***			-0.016***					
		(-5.835)			(-3.426)					
Total News # High ENV Sales			-0.007***	-0.004**	-0.006***					
			(-4.956)	(-2.491)	(-3.923)					
E&S News # High ENV IO						-0.017***			-0.013***	
						(-7.717)			(-4.854)	
E&S News # High Rating IO							-0.042***			-0.031***
							(-6.764)			(-4.727)
E&S News # High ENV Sales								-0.012***	-0.004	-0.009***
								(-4.547)	(-1.410)	(-3.310)
Observations	28750	28765	24276	24159	24171	28750	28765	24276	24159	24171
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 11. ESG policy responses by industry dispersion in ESG ratings

This table reports OLS regression estimates of firm policy responses on E&S risk measures. We consider subsamples of firms in industries with high and low dispersion in ESG ratings. Industry dispersion is measured by the within-industry standard deviation of Thomson Reuters' ESG ratings. The observations are firm-year. The dependent variable is the CSR Strategy Score for firm i in year $t+1$. All models include lagged firm controls and firm-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)	(3)	(4)	(5)	(6)	(7)	(8)
				CSR Strategy Score				
Industry ESG Dispersion	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*High*
Total News	-0.196	-0.234	0.028	-0.624*				
	(-0.773)	(-0.980)	(0.072)	(-1.764)				
High ENV IO	-0.001	0.029			0.008	0.039		
	(-0.025)	(0.590)			(0.174)	(0.808)		
Total News # High ENV IO	0.007	0.009**						
	(1.428)	(2.433)						
High ENV Sale			-0.051	0.017			-0.051	0.021
			(-1.392)	(0.479)			(-1.384)	(0.591)
Total News # High ENV Sale			0.000	0.010**				
			(0.060)	(2.096)				
E&S News					-0.361	-0.304	-0.126	-1.069**
					(-1.209)	(-0.961)	(-0.296)	(-2.272)
E&S News # High ENV IO					0.004	0.009*		
					(0.720)	(1.892)		
E&S # High ENV Sale							-0.003	0.016***
							(-0.526)	(2.707)
Observations	7279	8792	6461	7982	7279	8792	6461	7982
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year	Firm Year

Table 12. Market Discipline versus 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-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	-0.059**							
	(-2.416)							
High Reach News		-0.070**						
		(-2.508)						
Severe News			-0.080***					
			(-2.853)					
Environment News				-0.098**		-0.091**		
				(-2.354)		(-2.197)		
Social News					-0.102***		-0.094***	
					(-2.913)		(-2.711)	
E&S News								-0.071**
								(-2.536)
Past Governance News						-0.268***	-0.265***	-0.266***
						(-2.769)	(-2.743)	(-2.749)
Observations	190775	190775	190775	190775	190775	186600	186600	186600
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	-0.085***							
	(-3.360)							
High Reach News		-0.076***						
		(-2.636)						
Severe News			-0.070**					
			(-2.423)					
Environment News				-0.111**		-0.117***		
				(-2.549)		(-2.679)		
Social News					-0.113***		-0.122***	
					(-3.075)		(-3.284)	
E&S News								-0.103***
								(-3.409)
Past Governance News						0.015	0.018	0.018
						(0.117)	(0.143)	(0.138)
Observations	190817	190817	190817	190817	190817	186642	186642	186642
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	-0.282		-0.246		-0.463*	
	(-1.590)		(-1.426)		(-1.702)	
High ENV IO	-0.014	-0.006				
	(-0.367)	(-0.164)				
High ENV IO # Total News	0.012***					
	(2.855)					
E&S News		-0.475**		-0.425**		-0.885***
		(-2.151)		(-1.978)		(-2.711)
High ENV IO # E&S News		0.012***				
		(2.581)				
Small High ENV IO			-0.054*	-0.042		
			(-1.716)	(-1.378)		
Small High ENV IO # Total News			0.019**			
			(2.476)			
Small High ENV IO # E&S News				0.019**		
				(2.153)		
High ENV Sales					-0.036	-0.033
					(-1.452)	(-1.368)
High ENV Sales # Total News					0.007*	
					(1.801)	
High ENV Sales # E&S News						0.010**
						(2.105)
Large ENV IO	0.048	0.054	0.029	0.045	0.018	0.040
	(1.076)	(1.427)	(0.656)	(1.152)	(0.390)	(1.040)
Large ENV IO # Total News	-0.005		0.006		0.016	
	(-0.366)		(0.591)		(1.535)	
Large ENV IO # E&S News		-0.012		0.000		0.010
		(-0.754)		(0.009)		(0.725)
Observations	14843	14843	14843	14843	13591	13591
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Appendix. Variable Definitions

Panel A – E&S Risk

Variable	Definitions	Source
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 quintile of the self-expression score, calculated as an equally-weighted score for all respondents in each country in the World Value Survey. See Table A1.	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 quintile 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 quintile 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 quintile of the self-expression score. | FactSet WVS |

Panel C - Customer 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 quintile of the self-expression score, calculated as an equally-weighted score for all respondents in each country in the World Value Survey. See Table A1.	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 quintile of the self-expression score, calculated as an equally-weighted score for all respondents in each country in the World Value Survey. See Table A1.	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 quintile of the WVS self-expression score. See Table A1.	FactSet
Ln Sales	Log of total firm sales.	FactSet

Panel D - Other Data

Leverage	(Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) / (Total Capital + Short Term Debt & 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

Table A1. RepRisk News by Issues and Topics

Panel A. Issues

Issue	Total News	Severe	High Reach
Animal mistreatment	6554	5167	2568
Anti-competitive practices	155419	113606	27470
Child labor	19388	5731	7496
Controversial products and services	234861	143817	68879
Corruption bribery extortion and money laundering	217492	145531	49350
Discrimination in employment	27119	19014	7925
Executive compensation issues	54843	42657	12065
Forced labor	22682	7086	8402
Fraud	352595	229824	51599
Freedom of association and collective bargaining	28646	13784	15321
Global pollution (including climate change and GHG emissions)	120391	79083	51185
Human rights abuses and corporate complicity	168070	77997	68366
Impacts on communities	322139	173693	147690
Impacts on ecosystems/landscapes	271141	146783	119463
Local participation issues	64492	29702	35653
Local pollution	165125	89236	66718
Misleading communication	67051	44574	28068
Occupational health and safety issues	78089	37641	28108
Other environmental issues	332	157	48
Other issues	1760	1608	863
Other social issues	249	107	51
Overuse and wasting of resources	19220	8964	10273
Poor employment conditions	104057	58637	39750
Products (health and environmental issues)	76262	58051	16116
Social discrimination	27491	21370	6987
Supply chain issues	94437	55146	31857
Tax evasion	49018	32931	9863
Tax optimization	24153	15778	6737
Violation of international standards	43088	13377	21728
Violation of national legislation	773065	505948	147735
Waste issues	45130	23613	18832

Panel B. Topics

Topic	Total News	Severe	High Reach
Abusive/Illegal fishing	717	303	195
Agricultural commodity speculation	4786	4287	2371
Alcohol	486	413	205
Animal transportation	181	142	51
Arctic drilling	4443	3769	1085
Asbestos	3773	2697	2276
Automatic and semi-automatic weapons	396	346	168
Cluster munitions	13110	1410	9273
Coal-fired power plants	38770	24822	13969
Conflict minerals	4174	1617	2025
Coral reefs	2444	1164	1242
Deep sea drilling	3276	1697	1016
Depleted uranium munitions	252	168	117
Diamonds	413	206	308
Drones	456	374	160
Endangered species	16575	5501	7890
Forest burning	2993	1839	651
Fracking	14847	12158	6765
Gambling	877	739	91
Genetically modified organisms (GMOs)	14382	9793	8477
Genocide/Ethnic cleansing	4683	1526	2929
High conservation value forests	2993	1180	750
Human trafficking	1248	389	459
Hydropower (dams)	15289	7099	9350
Illegal logging	4143	1188	2054
Indigenous people	59963	25718	31867
Involuntary resettlement	11010	2570	5415
Land grabbing	32990	9935	18208
Land mines	722	58	576
Migrant labor	6900	2122	1964
Monocultures	3236	949	2006
Mountaintop removal mining	12889	9406	4216
Negligence	22039	11623	6687
Nuclear power	20272	15343	7116
Oil sands	12229	7740	4995
Palm oil	18832	6961	7277
Pornography	629	475	123
Predatory lending	14401	10292	3975
Privacy violations	26756	25191	4554
Protected areas	20246	8150	9812
Rare earths	82	59	35
Seabed mining	124	48	26
Soy	3142	1646	1315
Tobacco	8327	6624	2245
Water scarcity	8999	3872	5178

Table A2. Country ranking 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