

Are better ESG companies involved in more controversies?

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Abstract

This paper is the first to examine how corporate environmental, societal and governance (ESG) measures are related to corporate controversies. To investigate this, we use Refinitiv data for 4,000 companies from Europe and the United States during the period of 2004 to 2021. We find that higher ESG ratings actually predict having more controversies in the future, up to two years ahead. The relationship is robust in US as well as Europe, and, in most specifications, it applies separately to each of the individual E, S, and G components. The results hold in several robustness checks such as splitting the dataset across time and by company type. We put forth the ESG salience hypothesis working through media attention as a plausible channel to account for these results.

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1. Introduction

By definition, responsible companies behave responsibly. Not all irresponsible behavior is detected, but controversies due to misconduct such as breaking the laws or shady business practices, at least are clear hallmarks of irresponsibility. The current practice of closely associating corporate responsibility to high ESG performance derives from the idea that doing well on all facets of ESG requires responsibility toward various stakeholders. In practice, investors must often rely on companies' reported disclosures on ESG matters, and ESG ratings derived from that material, which may not fully accurately reflect the companies' practices. Misconduct related to ESG is only observable after it is detected through media, regulators, or other stakeholders. Whether companies that perform highly on their measured ESG, actually tend to get less involved in controversies, is an empirical question.

To explore this, we employ ESG scores and ESG controversies data by Refinitiv, the market-leading ESG rating agency. The Refinitiv ESG scores are disclosure-based metrics that rely solely on company-provided information. A high Refinitiv ESG score indicates more comprehensive ESG disclosure or better performance on ESG metrics compared to industry peers, as disclosed by the company. The Refinitiv ESG controversies are negative ESG news reports associated with the company, gathered from over 200 media agencies around the world. As such, they do not equate to legally confirmed misconduct. Our dataset comprises approximately 29,000 company-year observations related to 4,000 international firms from 21 countries and 31 industrial sectors spanning from 2002 to 2021.

To estimate the effect of ESG scores on the probability of ESG controversies, our baseline tests use a logit regression where the dependent variable is a dummy indicating any ESG controversy in the year that is two years ahead of the time point of measuring the explanatory variables. It includes firm-level controls known to associate with misconduct, as well as fixed effects for industry, year, and country. Surprisingly, our findings indicate that higher ESG

scores are associated with an increased likelihood of future controversies. This effect is more pronounced in EU firms compared to the US. Among the ESG pillar scores, the environmental (E) and social (S) scores have greater predictive power than the governance (G) scores. The result also holds on the intensive margin, that is, higher ESG firms tend to have worse controversies.

This result challenges the notion that robust ESG reporting signifies superior ESG practices. Instead, it suggests that corporate ESG disclosure fails to associate with good future ESG practices in this regard, and, more importantly, may indicate the opposite of good ESG practice. We perform several robustness checks by partitioning the sample period into subperiods, and partitioning the firms into groups based on size, as well based on the market-to-book -ratio. The results in the four subperiods and the growth-value groups are qualitatively the same as in the baseline regressions. Across firm size, the results are stronger in large firms, and disappear in smaller firms in some specifications.

The finding on ESG practice and misconduct suggests that firms anticipating punishment for misconduct are engaging in more ESG activities to mitigate future legal or reputational penalties, as if firms are engaging in ‘ESG hedging’. Ferrés and Marcet (2021) show that firms participating in illegal price fixing schemes increase their ESG efforts around the time they become targets of the related investigation. Cohen and Gurun (2023) document that subsequent to becoming involved in a court trial, public companies increase advertising in that locale, targeted toward the most likely jury pool. However, this explanation accounts for the high correlation between ESG activities and misconduct mostly after misconduct is exposed; it does not fully explain the predictability of ESG disclosure for future ESG misconduct.

To complement the current ESG hedging narrative in the literature, we propose an ‘ESG salience’ hypothesis. Because corporate disclosure is the most important information source for journalists (Call et al., 2022), firms with higher levels of disclosure compared to their peers

become salient in the ESG dimension. Consistent with salience theory of economic behavior (see Bordale, Gennaioli, and Shleifer, 2022 for a review), we propose that salience attracts greater media attention, leading to more scrutiny and, consequently, increased detection of misconduct.

We utilize the two different mechanisms of attention described in the psychology literature: top-down selection (goal-driven) and bottom-up selection (salience-driven) (see, e.g., Knudsen, 2007). The activation of the particular mechanism is affected by the pre-mind state of the decision maker. If decision-makers have an clear objective, they are likely to actively pay attention to goal-related information, i.e., the top-down channel. However, particularly salient information can also catch the attention of decision makers regardless of their existing goals. This is the bottom-up channel.

We propose that either goal-driven and salience-driven behavior regarding corporate controversies becomes dominant in different circumstances. Specifically, in industries with more ESG controversies, e.g., fossil energy, there will be more ESG-concerned journalists, and the detection of company ESG misconduct mainly works through the top-down goal oriented mechanism. In these industries, companies with high ESG scores, which may appear as ‘ESG saints’, become the prime targets for media scrutiny. In contrast, in industries with less overall ESG scrutiny, such as renewable energy, the detection of misconduct would mainly work through bottom-up mechanism. While ESG misconduct in these environments is less frequent overall, firms with some history in that regard may get scrutinized more, be more likely to have some misconduct detected, and it to become salient in the media.

To test the attention mechanism, we also use a logit model with different control variables tailored to journalist attention rather than corporate misconduct. This model includes past ESG controversies as a proxy for salience and segments the data based on media intensity, considering both temporal dimensions and various industries. We measure media intensity by

the average number of negative news reports per company. Industry analysis highlights that high energy consumption sectors, such as fossil energy and utilities, face the most media scrutiny and controversy rates. In contrast, industries like academic, clean energy, and real estate exhibit the lowest rates of media scrutiny. Overall, there is a positive relationship between the coefficient on ESG scores and media scrutiny intensity, and a negative relationship between the coefficient on past ESG controversies and media scrutiny intensity. Consistent with these predictions, our results suggest that probability of future ESG controversies is predominantly driven by high ESG ratings when media scrutiny is high, while past controversies play a more significant role when media scrutiny is low.

Finally, we assess the effect of controversies on stock returns by calculating the cumulative returns over a period of -5 to +5 days around the initial news. We find a significant negative cumulative return of -0.4% . Moreover, regressions examining the relationship between cumulative abnormal returns (CAR) and company ESG scores and past controversies show that companies with high past controversies tend to suffer more.

Our research is related to the growing literature on ESG disclosure, which mostly focuses on the relation between ESG disclosure and economic consequence (see Tsang, Frost, and Cao, 2023, for review). There are also studies on the effect of corporate ESG disclosure on other information intermediaries (Dhaliwal et al., 2012; Cahan et al., 2015; Serafeim and Yoon, 2023), with associated stock price impact. Our paper provides a mechanism where ESG disclosure could have negative impact on market value by attracting media attention on corporate misconduct.

Secondly, our research links to the literature on the role of media on stock market, such as to the study of causality of news and company information releases (Solomon, 2012; Dougal et al., 2012). We provide empirical evidence of the effect of ESG disclosure on journalist

attention. We also contribute to the literature on stock market reaction to news (Tetlock, 2007) by identifying the moderating role of salience.

2. Data

A. Refinitiv ESG Score

Our measure of ESG disclosure is Refinitiv ESG score. Compared to other rating methods, Refinitiv ESG score is more transparent regarding both data sources and calculation methods. It is a disclosure-based rating system, primarily relying on corporate disclosures to compile its information. This score encompasses over 200 data metrics, capturing comprehensive details of a company's ESG disclosure efforts. It also penalizes companies for failing to disclose ESG information. Although it is debatable whether the Refinitiv ESG score can be viewed as a measure of a company's genuine ESG efforts, it is the leading source and serves as a gauge of the extent to which a company communicates its ESG practices.

Refinitiv ESG scores is the weighted average of E, S, G pillar scores and the weights vary between industries. Notably, Refinitiv also has ESG combined score, which is the ESG score combined with ESG controversies. To avoid regressing x on x, we only use Refinitiv ESG score, that is, the version not including controversies.

B. Refinitiv ESG Controversies

We use Refinitiv ESG controversies as a proxy for negative media attention to ESG matters. ESG controversies encompass negative news reports, which include but are not limited to lawsuits, ongoing legislative disputes, and fines. A company's involvement in controversies indicates the media detection of potential misconduct, but it does not necessarily result in an actual violation or penalty. ESG controversies also cover a wide range of topics, spanning 7 broad categories and 23 subcategories of ESG issues (see Table 12).

The scoring mechanism for Refinitiv ESG controversies follows a deduction method: a company receives a score of 100 if it has no controversies, and this score is reduced if the company is involved in any controversies during a given year. Based on the ESG controversies score, our dependent variable, denoted as ESGC, is defined as 1 if a company's ESG controversies score is less than 100 and 0 if the company has not been involved in any controversies. For robustness, we also run the analysis using the continuous variable.

C. Control Variables

We have two sets of control variables: one for corporate misconduct, and another for journalist attention (see Table 2). The control variables for misconduct are common variables used in corporate finance literature. The control variables for journalist attention are based on the survey evidence by Call et al. (2022). All these data come from Refinitiv. Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets, Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO. Advertising Expenses (Ad_r) is the advertising expenses divided by total revenue. Dummy Variable for Missing Advertising Expenses (Ad_dummy) is a dummy variable to indicate whether a company has not disclosed advertising expenses, following Barnett and Salomon (2012). Apart from the variables, we also calculate the media intensity on groups of firms, in order to test the media attention mechanism of the results. The media intensity is defined as the sum of ESGC divided by number of firms in the subsample.

D. Sample

We start our sample selection with companies in the United States, European Union, and the United Kingdom that have Refinitiv ESG scores from the years 2000 to 2021. We initially

had 43,596 company-year observations spanning 38 countries. We excluded countries with fewer than 10 companies and companies with less than 3 years of observations to construct lagged variables. This resulted in a final sample of 4,071 companies from 23 countries, with a total of 29,235 company-year observations (see Table 1).

3. Model and Results

A. Descriptive analysis

The majority of firm-year observations have no controversies, so the median controversies score is 100. In total, there are 7,376 company-year controversies, involving 1,716 distinct companies. These controversies account for 22.7% of the total observations and encompass 37.7% of the companies in our sample.

The level of public interest in ESG varies considerably across different geographical regions, time periods, and industries. To quantify the intensity of media scrutiny within our subsample, we calculate the sum of company-year controversies divided by the number of unique companies in the subsample. In general, media scrutiny tends to be significantly concentrated on larger firms. On average, each company experiences 4.9 controversies in the United States and 5.6 in the European Union, compared to 1.4 and 1.6, respectively, for the second-largest quantile of companies. When considering industry segments, we observe that media scrutiny intensity is notably higher in energy-intensive industries, such as Fossil Energy and Consumer Non-cyclicals, which includes the automotive sector (See Table 12). Interestingly, media scrutiny intensity exhibits a decline after the 2015 Paris Agreement. This phenomenon can be attributed to the fact that while the total number of ESG controversies increased after 2015, the growth rate of companies with ESG disclosure outpaced this increase (See Figure 1 Panel C).

B. Empirical Model

As previously discussed, our primary research question is to understand the relation between ESG disclosure and the likelihood of ESG controversies. Therefore we employ a logistic regression model where the dependent variable is $ESGC_{it}$, the dummy variable that is set to 1 if company i is associated with negative news reports in year t .

$$ESGC_{it} = a + b(ESG_{it}) + c(ESGC_{it-2}) + d(F_{it}) + e(Ind_{it}) + f(Year_{it}) + g(Country_{it}) + \varepsilon_{it} \quad (1)$$

Our key independent variable is the two-year lag ESG score, referred to as ESG_lag. This choice of a two-year lag allows us to use ESG score to predict future controversies and also accounts for the fact that Refinitiv counts a company as having controversies in year t if any developments related to controversies occurred in year $t-1$. We also run analysis with one-year and three-year lag of independent variables and obtain the same results.

We include control variables discussed before. We first include control variables known to associate with corporate misconduct to test the predictability of past ESG score on ESG controversies. Once we established the relationship, we then include another set of control variables for journalist attention, based on evidence from the survey conducted by Call et al. (2022) in order to test the media attention mechanism.

We also include industry, year and country fixed effects. We winsorize the values of each variable at 1 percent to adjust for outliers without losing any observation and avoid the influence of extreme values.

C. ESG Disclosure and ESG Controversies

We first run a logit regression analysis using our complete sample of 32,059 observations (as shown in Table 4). The dependent variable is the dummy for any controversies (ESGC), while the key independent variables are the two-year lag of the ESG score, and control variables

are the logarithm of market capitalization (Lgmc), Stock Return Volatility (Std), Revenue Growth (Rg), Return on Asset (Roa), Leverage (Leverage), Firm Age (Age) and industry, year, country fixed effects.

The results in the first column of Table 4 indicates that larger firms, those with higher stock return volatility, lower revenue growth, lower return on assets, higher leverage and higher book-to-market -ratios are associated with more controversies. After controlling for these factors, the coefficient on the lag of the ESG score was positive and significant. That is, companies with higher ESG scores are more likely to be involved in future controversies.

We further run regressions with separate ESG pillar scores, in columns 2-4 of Table 4. The coefficients on all three pillars are positive. Column 5 includes all three pillars together. Social pillar scores have the highest coefficient among the three pillars.

We then conduct similar regressions separately on US and European Union (plus the UK) firms in Tables 5 and 6. The results are similar to the ones from total sample, except that in the US, the G score is no longer significant when included together with E and S scores. Additionally, the social score has a high coefficient in the EU+UK, while in the US, the coefficients on S and E are of similar magnitude.

We then separate our sample by company size using total assets. We do this separately for US and EU+UK. The results are shown in Tables 7 and 8. In the US, the positive relation between ESG score and ESG controversies are mainly driven by large companies where as in EU and UK, the results are significant across the firm size quantiles.

Finally, we test our results using models including firm fixed effects, and standard errors clustered at the firm level. We also exclude companies with less than 10 yearly observations (see Table 9).

D. Refinitiv ESG scores and penalties

There is a possibility that the observed relationship between corporate ESG disclosure and ESG controversies is influenced by the underlying data collection process at Refinitiv. Specifically, Refinitiv analysts might pay more attention to certain companies, leading to both increased disclosure and a higher number of reported controversies.

To address this possibility we cross-validate our results using data from GoodJobFirst.org, the same dataset used in Heese, Pérez-Cavazos, and Peter (2022). GoodJobFirst.org tracks violations enforced by federal and state agencies, encompassing almost half a million 591 violations by 3,196 companies. We match this data with Refinitiv ESG data for 933 firms, corresponding to 10,515 firm-year observations. These 933 companies have recorded penalties on Violation.org at some point. We also conducted a similar analysis focused on companies headquartered in the United States.

In our analysis, we used the Refinitiv ESG score to predict both the frequency and amount of penalties. The dataset includes all violations resulting in penalties over \$5,000. The data is highly skewed with most company-year observations showing no penalties, while some firms have large and numerous penalties. For example, the largest penalty recorded was for Bank of America in 2014 for mortgage abuse. Conversely, Union Pacific received the highest number of penalties, with 85 recorded in 2004. The average penalty amount across the dataset is about \$25,000.

Table 10 shows that among all companies headquartered in the US, those with higher Refinitiv ESG ratings are more likely to incur penalties, in terms of both frequency and total amount. We then limit our analysis to companies that have received any penalties. The results remain consistent, showing that companies with higher Refinitiv ESG ratings are more likely to receive penalties.

E. MSCI ESG score and ESG controversies.

Given the well-known discrepancies in ratings across different agencies (Berg et al. 2022), we also employ the ESG ratings by MSCI to predict Refinitiv's ESG controversies. As an additional robustness test, we merged the MSCI and Refinitiv datasets. Of the 4,071 firm initially, we are able to match 3,071, resulting in 19,281 firm-year observations.

We applied the same logit model, using a two-year lag of the MSCI score as the dependent variable. The results in Table 11 show that the overall MSCI ESG rating is negatively associated with Refinitiv ESG controversies—higher MSCI scores correlate with a lower probability of ESG controversies. When analyzing the pillar scores, we find that the MSCI E-score is positively associated with ESG controversies, while the MSCI S-score shows a negative relationship. The MSCI G-score, however, does not exhibit a significant relationship with ESG controversies.

F. The media attention mechanism

The positive relation we establish between ESG score and ESG controversies could be the result of journalist allocating more attention to high ESG companies. Survey evidence by Call et al. (2022) show that corporate controversies are a key topic to journalist and corporate disclosure is an important information source.

We therefore hypothesize that that firms producing more ESG disclosure will become more salient on the ESG dimension. It is then easier for the public to associate the company with its ESG practices, attracting more media attention and scrutiny.

To test the media attention channel, we utilize the finding in psychology literature on how attention works on the different priors of decision makers. Research indicates that information catches the attention of decision makers mainly through two mechanisms: Top-down, and bottom-up mechanisms (Knudsen, 2007). The activation of the mechanism is based on the pre-existing mindset of the decision-maker. In the top-down channel, decision-makers have a clear

objective and actively search for goal-related information. In the bottom-up channel, information with salience attributes catches the attention of decision makers regardless of their existing goals. Bordalo et al. (2022) review three types of salient attributes. One of those is prominence, particularly relevant in our context. This refers to such information that has caught the decision maker's attention in the past, and is therefore likely to catch attention again.

This idea allows us to test if media attention is driving the positive relation between ESG scores and controversies. Journalists vary the extent they are interested in in ESG matters, as do their readership. Journalist with high ESG interest are likely to cover industries with high media scrutiny. We therefore expect that in sectors with more media scrutiny on ESG, controversies are more likely from high ESG firms because of ESG interested journalist actively look for scandals. In sectors where media scrutiny on ESG is lower, controversies are more likely from firms with incidence of past controversies, as information that caught journalist attention before are more likely to catch their attention in the future.

We calculate media scrutiny as the sum of ESG controversies divided by the total number of companies in a year and industry. Initially, we segregated our sample based on a company's total assets, as media attention on larger firms was expected to be higher than on smaller firms (see Figure 1). In both the US and EU, larger companies tend to generate more controversies. For instance, in the largest company quantile, non-US companies have 5.6 on average controversies, and US companies have 4.9 controversies. Large companies have almost ten times more controversies per company than the smallest companies.

In our final analysis, we segment our sample based on industry categories, utilizing Refinitiv's major industry labels. Notably, industries with high energy consumption, namely Fossil Energy, Utility, and Consumer Non-cyclicals (including the automotive sector), attract the highest levels of media attention. On average, these industries experience over 2.5 controversies per company. Conversely, the Academic, Clean Energy, and Real Estate

industries record the lowest company-year controversies, averaging 1.1, 0.7, and 0.3, respectively. The sub-topic analysis on media scrutiny is shown in Table 12

The results in Table 13 show that the coefficient is significant in all industries except for Academic and Clean Energy. Both ESG score lagged by two years (ESGscorelag2) and the ESG controversies (ESGC2) are insignificant in Academic and Clean Energy. In the Real Estate industry, ESGscorelag2 is also insignificant.

A pattern emerges wherein industries characterized by high scrutiny also exhibit higher coefficients on ESG score (Figure 2), except for Consumer Non-cyclicals. Despite being subject to high scrutiny, Consumer Non-cyclicals has a relatively low coefficient of 0.014. The coefficients are high in the Fossil Energy and Utility industries, at 0.024 and 0.022, respectively.

There is also a pattern of low media scrutiny and high coefficients on past controversies. For instance, the Real Estate industry has the highest coefficient for past controversies, at 1.76. This suggests that in this industry, much of the attention is driven by historical controversies rather than current ESG scores. We also run the same analysis for US and EU+UK. The relation still exist in US, but In the EU the coefficient on ESG2 (high ESG rating firms) exhibits a negative correlation with media scrutiny. The result is largely driven by the low media scrutiny and high coefficient on ESG2 in the real estate industry. When real estate is excluded, the relationship becomes positive, and the coefficient on ESGC2 (past ESG controversies) displays no correlation with media scrutiny (see Figure 3 and Table 14).

Finally, we also separate the data by year and the result show a similar pattern (Table 15). The above results are consistent with our hypothesis that there is a positive relation between coefficient on ESG score and media scrutiny intensity and negative relation between coefficient on past ESG score and media scrutiny. This suggest that media attention could be a channel driving the positive relation between ESG score and ESG controversies.

G. ESG salience and stock return

Finally, to assess the economic impact of ESG controversies, we calculate the Cumulative Abnormal Return (CAR) following the occurrence of controversies over a window of -5 to +5 days (See Table 16). Following Kruger (2015), we estimate the market model parameters over a period of 250 to 50 trading days prior to the controversy event. We use the CRSP value-weighted index for the market.

We start with a total of 28,153 controversies, ending up with ultimately 20,509 controversies for which we are able to compute abnormal returns. On average, companies experience a stock return loss of -0.4% after ESG controversies, in line with Kruger (2015). It is interesting to see whether this loss is more pronounced in companies characterized by high ESG salience. To explore this, we perform a regression analysis of the 11-day CAR on our ESG salience variables, alongside control variables. The results show that companies with a history of controversies tend to experience more pronounced negative impacts when facing new controversies.

4. Conclusion

We find that ESG salient companies are more likely to be associated with controversies. The influence of ESG salience on media attention varies based on media scrutiny levels, the coefficient on contrast attribute increases when the media interest on ESG increase, whereas the prominence attribute shows a reverse pattern. ESG controversies were found to have a significant negative impact on stock returns, though ESG salience itself did not directly affect returns.

Even though we document the role that different attributes of salience play under different media scrutiny, it is unclear why the attributes behave this way. The extend of ESG disclosure is the result of both regulation and company's strategic decision. This paper didn't address the

determinants of the company ESG disclosure but focuses on the effect of company disclosure. Future research could explore the factors influencing a company's decision to disclose ESG information, providing a more comprehensive understanding of the dynamics at play in the realm of ESG salience and media interaction.

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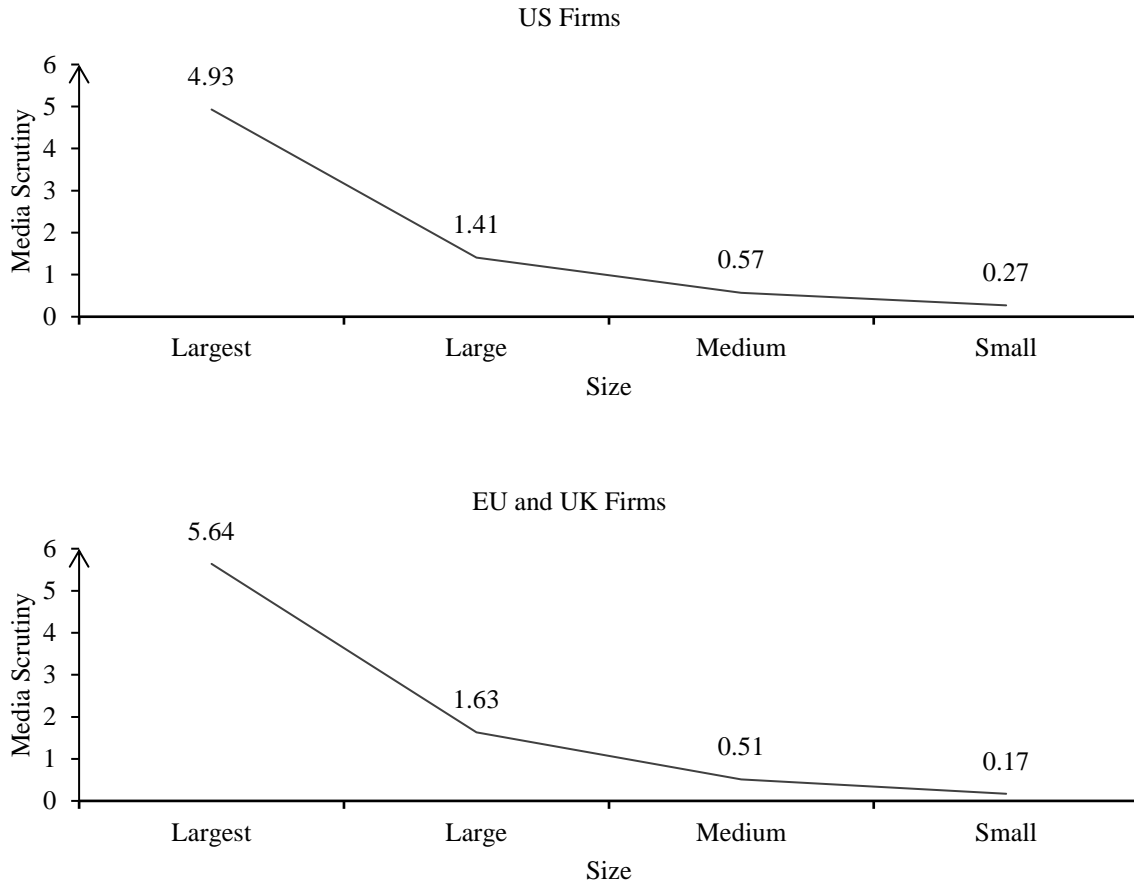
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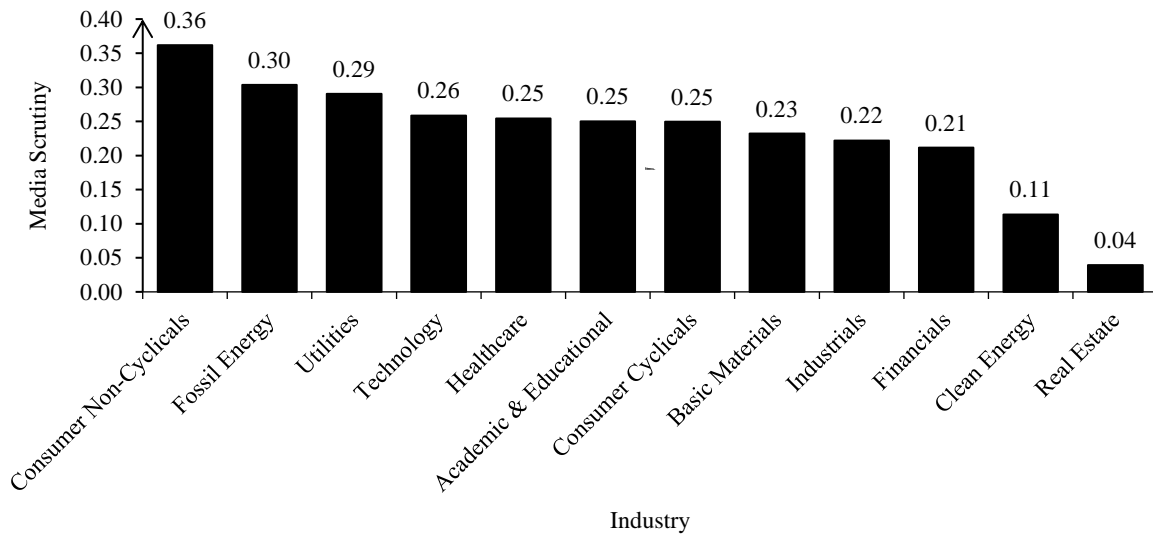
Figure 1. Media Scrutiny: Average ESGC Per Company by Size, Year and Industry

The figure illustrates media scrutiny categorized by Size (Panel A), Industry (Panel B), and Year (Panel C). Media scrutiny is calculated as the sum of ESGC in the subsample of each size quantile, year, and industry, divided by the number of companies in the respective subsample. Notably, media scrutiny is centered on large firms and industries with high energy consumption. The observed trend indicates a decrease in media scrutiny after 2015, attributed in part to the increased number of firms included in the database during this period.

Panel A. Media Scrutiny by Size



Panel B. Media Scrutiny by Industry



Panel C. Media Scrutiny by Year

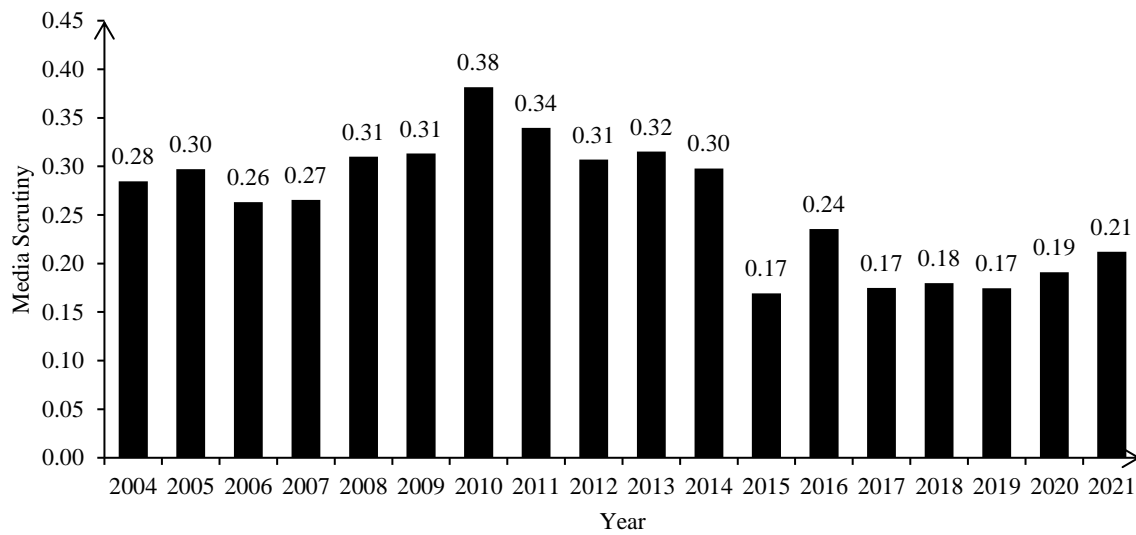
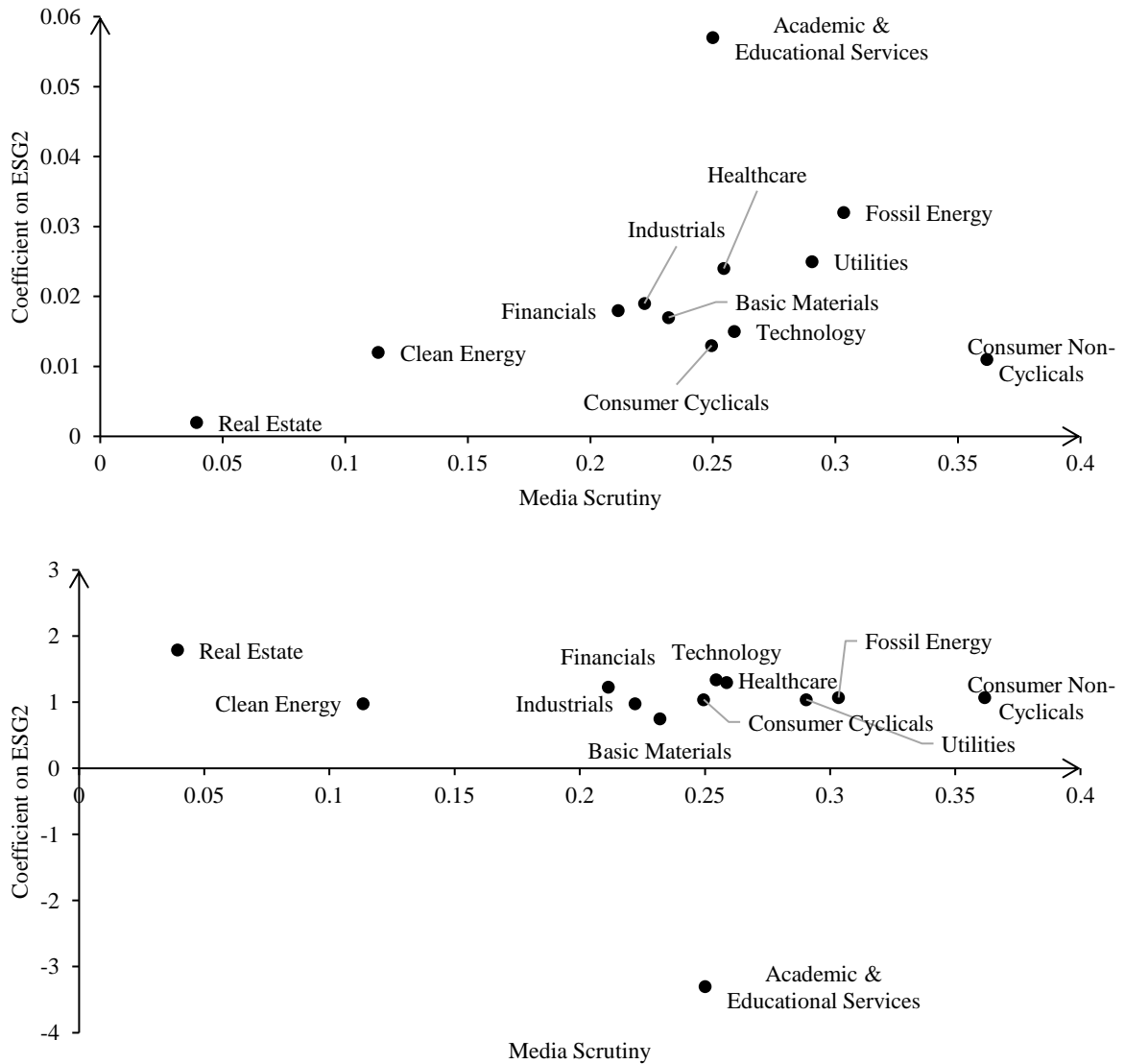


Figure 2. Media Scrutiny and ESG2, ESGC2 Coefficients

The following figures show how the coefficient on different attribute of ESG salience varies based on the media scrutiny, which is measured by the average ESGC score per company. ESG2 is the two-year lag of the Refinitiv ESG score. ESGC2 denotes the two-year lag of the dependent variable ESGC, which is a dummy variable that equals 1 if the firm has any controversies in a given year. The coefficient on ESG2 (high ESG rating firms) exhibits a positive correlation with media scrutiny, with this relationship being more pronounced in the yearly separate sample and less significant in the industry. In contrast, the coefficient on ESGC2 (past ESG controversies) displays a negative correlation with media scrutiny. Only significant coefficient is displayed in this graph.

Panel A. Media Scrutiny and ESG2, ESGC2 Coefficients by Industry



Panel B. Media Scrutiny and ESG2, ESGC2 coefficients by Year

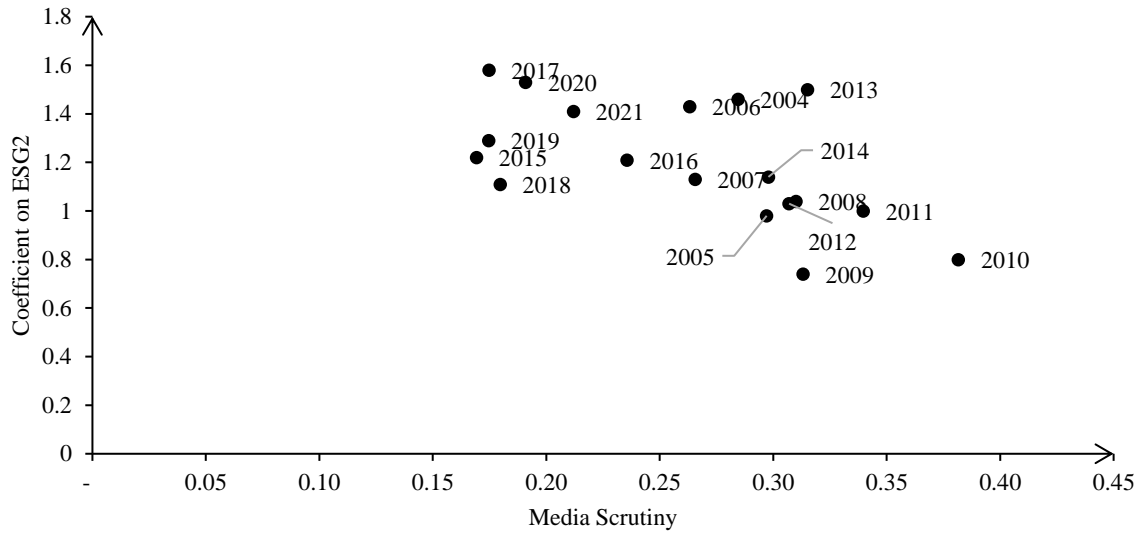
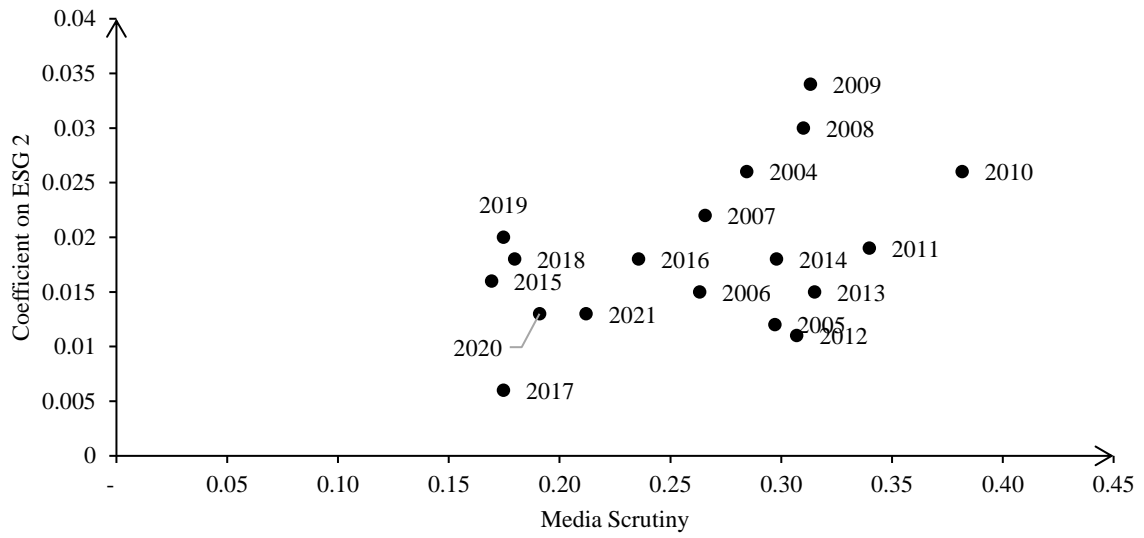
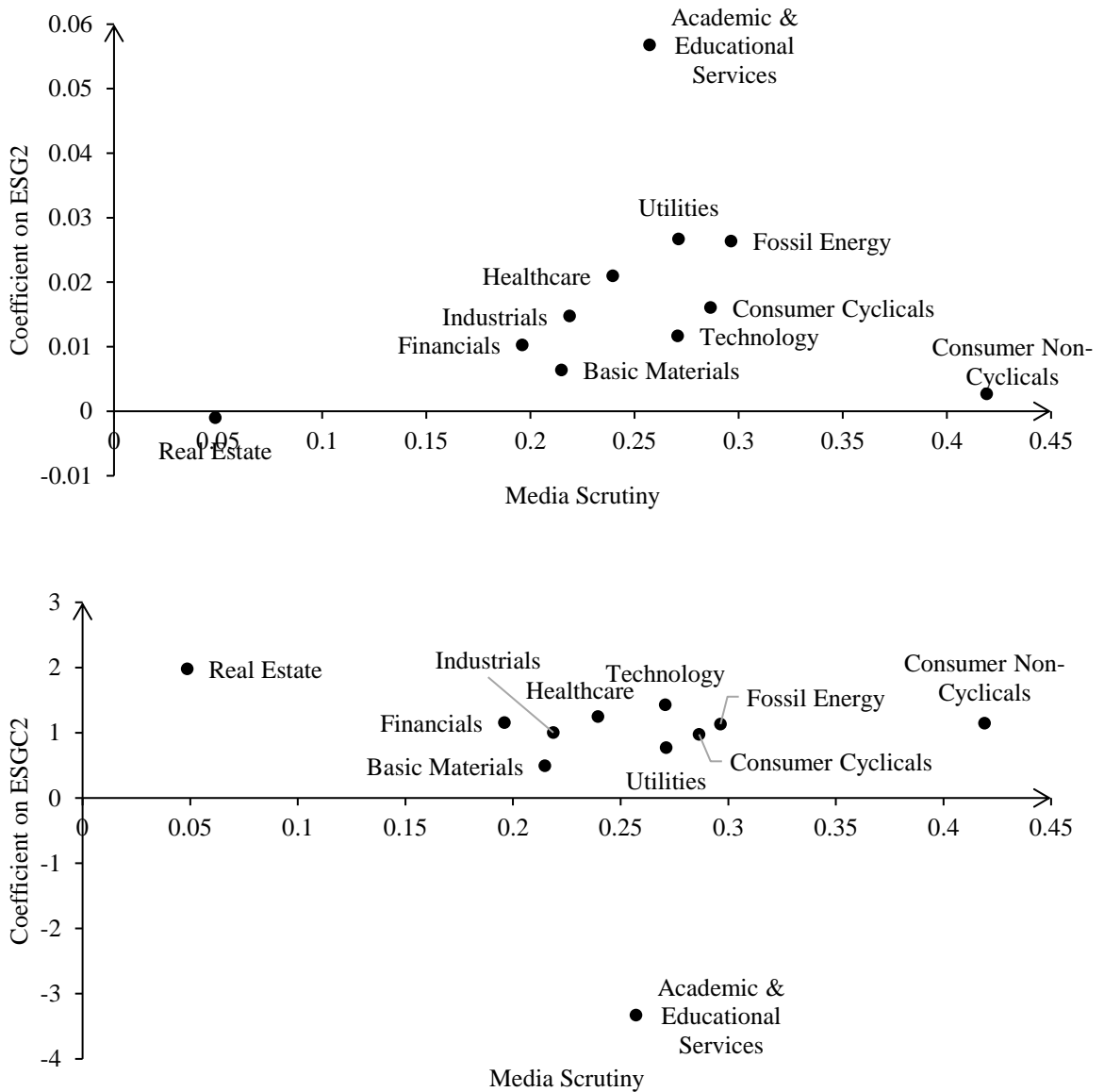


Figure 3. Media Scrutiny and ESG2, ESGC2 Coefficients

The following figures show how the coefficient on different attribute of ESG salience varies based on the media scrutiny, which is measured by the average ESGC score per company. ESG2 is the two-year lag of the Refinitiv ESG score. ESGC2 denotes the two-year lag of the dependent variable ESGC, which is a dummy variable that equals 1 if the firm has any controversies in a given year. In US, the coefficient on ESG2 (high ESG rating firms) exhibits a positive correlation with media scrutiny and the coefficient on ESGC2 (past ESG controversies) displays a negative correlation with media scrutiny. In EU, the coefficient, the coefficient on ESG2 (high ESG rating firms) exhibits a negative correlation with media scrutiny, the results is largely driven by the low media scrutiny and high coefficient on ESG2 in real estate industry, the relation is positive after real estate is excluded, and the coefficient on ESGC2 (past ESG controversies) displays no correlation with media scrutiny

Panel A. Media Scrutiny and ESG2, ESGC2 Coefficients (US firms)



Panel B. Media Scrutiny and ESG2, ESGC2 Coefficients (EU firms)

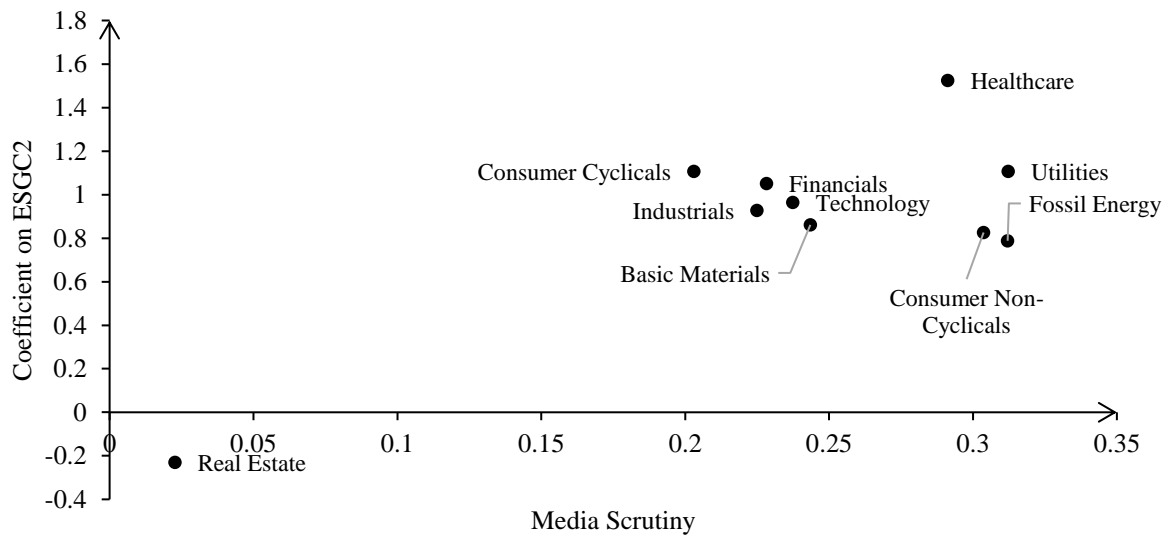
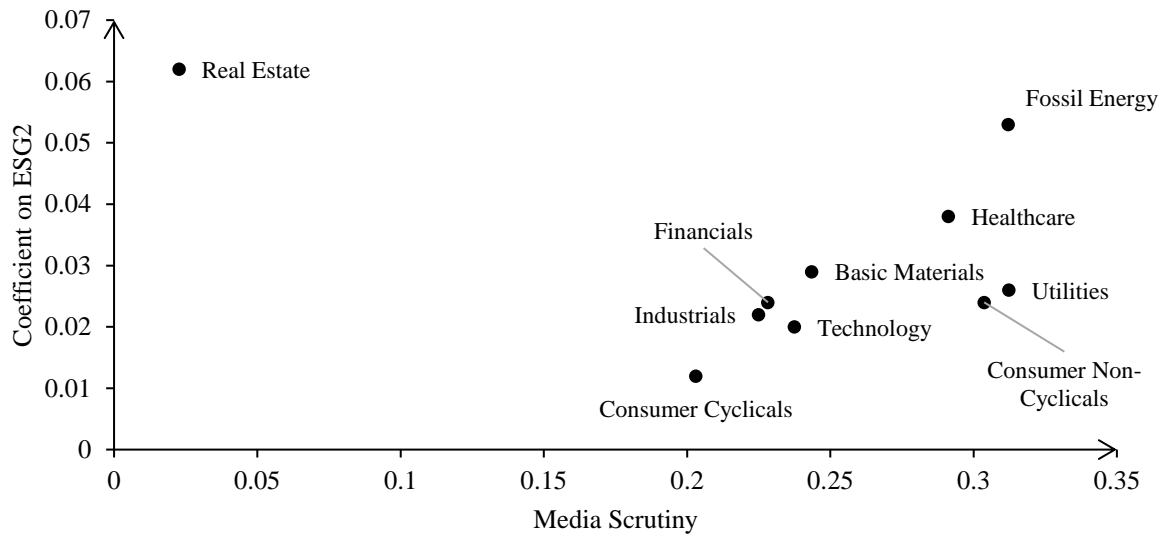


Table 1. Sample Selection and Summary Statistics

This table shows our sample selection and data loss. The initial sample was a total of 43,596 firm year study with ESG controversies and ESG scores are available. There are 5,787 international firms in Europe, UK and the United States over the period 2002 to 2021 across 38 countries. We excluded countries with less than 10 firms from the analysis and firms with missing observations and zero values for any of the three Environmental, Social and Governance pillar scores and firms with missing or insufficient financial information to estimate size and growth (Total assets, Market capitalization and market-to-book value) and also used two years lagged values. As a result, the size of our sample dropped to 4,124 firms with 29,516 firm year observations with both ESG scores and ESG controversies.

Panel A. Sample and Screening Criteria

Screening criteria	#of Company	#of Company-Year observation	#of Countries
Has ESG score on Refinitiv (US, EU&UK)	5,787	43,596	38
Has 3 year observations	4,618	32,809	36
Countries more than 10 companies	4,540	32,246	23
Observations with control variables	4,071	29,235	23

Panel B. Summary Statistics for Variables

	Mean	p50	SD	Max	Min
Dependent Variables					
ESGC	0.23	0	0.42	1	0
Independent Variables					
ESGScore	42.8	40.4	20.2	87.9	7.11
ESGConScore	88.88	100	24.80	100	.385
EScore	33.05	27.20	29.23	93.76	0
SScore	44.72	41.81	22.70	93.70	3.98
GScore	48.44	48.87	22.35	92.11	4.37
Control Variables for misconduct					
Lgmc	22.07	22.10	1.66	25.98	17.93
Std	10.25	8.53	6.35	39.39	2.860
Rg	0.044	0.04	0.25	1	-0.97
Roa	0.029	0.036	0.12	0.31	-0.69
Leverage	0.61	0.61	0.24	1.30	0.054
Bm	0.63	0.47	0.61	3.84	-.034
Age	22.53	20	16.25	78	1
Control Variables for media attention					
Ad_r	0.0082	0	0.024	0.15	0
ADdummy	0.71	1	0.45	1	0

Table 2. Description of Variables

Variable	Definition	Variable description
Dependent variables		
ESGC	ESG Controversies	As provided by Thomson Reuters Eikon dataset. ESGC score ranges from 0 to 100. If there are no controversies, score is 100 and if there are controversies, ESGC scores are rated based on the size adjusted number of controversies.
D(ESGC)	ESG Controversies dummy	D(ESGC) = 1 if ESGControversiesScore<100 D(ESGC) = 0 if ESGControversiesScore=100
Independent variables		
ESGScores	ESG Scores	As provided by Thomson Reuters Eikon dataset. ESG Scores measure a company's relative ESG performance, commitment and effectiveness across 10 main themes based on company-reported information. ESGC score ranges from 0 (most negative) to 100 (most positive).
E	Environmental Pillar Scores	As provided by Thomson Reuters Eikon dataset. This comprise of the resource use, emissions and innovation scores.
S	Social Pillar Scores	As provided by Thomson Reuters Eikon dataset. This comprise of workforce, human rights, community and product responsibility scores.
G	Governance Pillar Scores	As provided by Thomson Reuters Eikon dataset. This comprise of management, shareholders and CSR Strategy scores.
Control variables		
LgMC	Market Capitalization	Log of market capitalization
Std	Stock Volatility	Standard deviation of stock return over pass 12 months.
Rg	Revenue Growth	The growth rate of revenue over from last year to current year
Roa	Return on Asset	Net income divided by total assets
Leverage	Leverage	Total liability divided by total asset
Bm	Book to Market Ratio	Total asset divided by market capitalization
Age	Firm Age	Current year minus IPO year
Ad_r	Advertising Expense Ratio	Annual adverting expense divided by revenue
Ad ADdummy	Dummy variable for ad expense.	Dummy variable: 1 if company don't have advertising expense, 0 otherwise
Year	Year controls	Year fixed effects (2002-2021)
Industry	Industry fixed effects	Eikon Industry classification
Country	Countries of origin	Country of incorporation

Table 3. Correlation Matrix

This table shows the correlation between variables in our sample.

	ESG Score	ESG con	E	S	G	Lgm c	Std	Rg	Roa	Leve rage	Bm	Age
ESGcon	-0.27											
EScore	0.85	-0.26										
SScore	0.89	-0.25	0.73									
GScore	0.68	-0.16	0.39	0.40								
Lgmc	0.48	-0.35	0.46	0.45	0.278							
Std	-0.18	0.03	-0.20	-0.14	-0.10	-0.40						
Rg	-0.04	-0.00	-0.05	-0.03	-0.01	0.10	-0.00					
Roa	0.13	-0.01	0.13	0.09	0.10	0.34	-0.38	0.19				
Leverage	0.14	-0.09	0.12	0.11	0.11	0.04	0.06	0.006	-0.15			
Bm	-0.00	-0.01	0.06	-0.03	-0.00	-0.25	0.16	-0.13	-0.15	-0.04		
Age	0.23	-0.12	0.20	0.17	0.20	0.24	-0.17	-0.04	0.12	0.017	-0.03	
Ad_r	-0.01	-0.08	-0.04	0.002	-0.04	0.08	0.040	0.030	0.017	0.022	-0.10	0.018

Table 4. Regression Results of ESG Controversies on ESG Scores, All Firms

The table presents of logistic regression model with the dummy dependent variable ESGC: 1 if there is any controversies for firm *i* in year *t*, 0 if not. The independent variables are lag two-year of the Refinitiv ESG scores (column 1) and separate E, S, G scores(column 2-5) both lagged by two periods (E, S, G). Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets; Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO. All of ESG variables statistically significant at the 1% level (indicated by $p < 0.01$). The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC				
	(1)	(2)	(3)	(4)	(5)
ESGScore_Lag2	0.018*** (16.32)				
EScore_Lag2		0.011*** (13.68)			0.005*** (5.07)
SScore_Lag2			0.015*** (15.57)		0.01*** (8.66)
GScore_Lag2				0.0068*** (8.45)	0.0029*** (3.37)
LgMC	0.77*** (45.18)	0.79*** (45.84)	0.78*** (46.34)	0.87*** (56.04)	0.75*** (43.14)
Std	0.035*** (9.12)	0.034*** (8.95)	0.034*** (8.94)	0.035*** (9.04)	0.034*** (8.97)
Rg	0.0084* (2.31)	0.0083* (2.28)	0.0084* (2.30)	0.0086* (2.37)	0.0084* (2.30)
Roa	-1.9*** (-9.85)	-1.84*** (-9.58)	-1.93*** (-9.97)	-2.0*** (-10.37)	-1.88*** (-9.74)
Leverage	0.92*** (9.33)	0.98*** (10.00)	0.96*** (9.72)	1.12*** (11.49)	0.90*** (9.08)
Bm	0.65*** (17.91)	0.64*** (17.72)	0.66*** (18.43)	0.71*** (19.96)	0.64*** (17.55)
Age	-0.003 (-1.52)	-0.00074 (-0.38)	-0.00093 (-0.49)	0.0022 (1.17)	-0.0030 (-1.52)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes
Country Fixed Effect	Yes	Yes	Yes	Yes	Yes
_cons	-19.76*** (-43.08)	-19.99*** (-42.85)	-19.85*** (-43.35)	-21.97*** (-50.38)	-19.41*** (-41.22)
Observations	28,890	28,890	28,890	28,890	28,890

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5. Regression Results of ESG Controversies on ESG Scores, US Firms

The table presents of is the same logistic regression model as Table 4. The sample is for US firms with the dummy dependent variable ESGC: 1 if there is any controversies for firm i in year t , 0 if not. The independent variables are the lag two-year of Refinitiv ESG scores (column 1) and separate E, S, G scores(column 2-5) both lagged by two periods. Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets; Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO. The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC				
	(1)	(2)	(3)	(4)	(5)
ESGScore2	0.015*** (9.99)				
EScore2		0.011*** (10.91)			0.0081*** (6.01)
SScore2			0.013*** (9.85)		0.0065*** (3.83)
GScore2				0.0046*** (4.16)	0.00021 (0.18)
LgMC	0.76*** (33.44)	0.74*** (31.93)	0.76*** (33.33)	0.85*** (40.82)	0.73*** (30.67)
Std	0.039*** (7.87)	0.038*** (7.62)	0.038*** (7.63)	0.039*** (7.76)	0.038*** (7.64)
Rg	0.0037 (0.73)	0.0034 (0.67)	0.0037 (0.73)	0.0037 (0.73)	0.0035 (0.68)
Roa	-1.81*** (-7.71)	-1.70*** (-7.25)	-1.82*** (-7.73)	-1.91*** (-8.15)	-1.72*** (-7.31)
Leverage	0.66*** (5.47)	0.68*** (5.61)	0.67*** (5.49)	0.81*** (6.75)	0.63*** (5.19)
Bm	0.63*** (10.52)	0.6*** (10.06)	0.64*** (10.73)	0.70*** (11.85)	0.60*** (9.93)
Age	-0.0059* (-2.41)	-0.0049* (-2.05)	-0.0040 (-1.67)	-0.0011 (-0.48)	-0.0058* (-2.40)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes
_cons	-19.39*** (-33.56)	-18.62*** (-31.18)	-19.32*** (-33.22)	-21.50*** (-39.82)	-18.31*** (-30.22)
Observations	16,056	16,056	16,056	16,056	16,056

t -statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6. Regression Results of ESG Controversies on ESG Scores, EU and UK Firms

The table presents of is the same logistic regression model as Table 4. The sample is for EU and UK firms with the dummy dependent variable ESGC: 1 if there is any controversies for firm *i* in year *t*, 0 if not. The independent variables are the lag two-year of Refinitiv ESG scores (column 1) and separate E, S, G scores(column 2-5) both lagged by two periods (E, S, G). Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets; Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO. The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC				
	(1)	(2)	(3)	(4)	(5)
ESGScore2	0.022*** (12.11)				
EScore2		0.011*** (7.95)			0.0047* (2.14)
SScore2			0.014*** (9.22)		0.0082*** (3.54)
GScore2				0.011*** (9.01)	0.0086*** (4.91)
Lgmc	0.78*** (27.46)	0.84*** (30.51)	0.83*** (30.46)	0.88*** (34.13)	0.79*** (19.01)
Std	0.036*** (5.57)	0.038*** (5.94)	0.037*** (5.77)	0.036*** (5.60)	0.035*** (4.80)
Rg	0.0098 (1.75)	0.0097 (1.75)	0.0099 (1.77)	0.01 (1.82)	0.01 (1.85)
Roa	-1.90*** (-4.96)	-1.95*** (-5.17)	-2.0*** (-5.31)	-1.87*** (-4.93)	-1.86*** (-3.83)
Leverage	1.58*** (8.37)	1.75*** (9.31)	1.73*** (9.25)	1.89*** (10.18)	1.61*** (6.22)
Bm	0.69*** (13.92)	0.71*** (14.34)	0.72*** (14.78)	0.75*** (15.44)	0.70*** (10.35)
Age	0.0077* (2.14)	0.01** (2.78)	0.0098** (2.73)	0.013*** (3.73)	0.0085 (1.67)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes
Country Fixed Effect	Yes	Yes	Yes	Yes	Yes
_cons	-21.13*** (-29.17)	-22.52*** (-31.11)	-22.38*** (-31.37)	-23.74*** (-35.11)	-21.43*** (-20.68)
Observations	12,823	12,823	12,823	12,823	12,823

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7. Regression Results of ESG Controversies on ESG Scores, US Firms by Size

The table presents of is the same logistic regression model as Table 4 specification (1) . The sample for US firms split by total assets .With the dummy dependent variable ESGC: 1 if there is any controversies for firm i in year t , 0 if not. The independent variables are the lag two-year of Refinitiv ESG scores. Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets; Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO.The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC			
	Small (1)	Medium (2)	Large (3)	Largest (4)
EScore2	-0.0021 (-0.34)	0.0033 (1.01)	0.0039 (1.53)	0.009*** (3.86)
SScore2	0.00081 (0.15)	0.0022 (0.55)	0.0090** (2.71)	0.0071* (2.35)
GScore2	0.0026 (0.77)	-0.0008 (-0.30)	-0.0037 (-1.72)	0.0044* (2.01)
Lgmc	0.36*** (5.11)	0.3*** (3.46)	0.45*** (5.37)	1.09*** (17.94)
Std	0.041*** (4.47)	0.035** (3.26)	0.039*** (3.78)	0.020 (1.77)
Rg	0.013 (0.92)	0.0045 (0.31)	0.00060 (0.06)	-0.011 (-1.35)
Roa	-0.38 (-1.03)	-2.76*** (-4.73)	-0.23 (-0.36)	-2.96*** (-3.55)
Leverage	-0.057 (-0.23)	0.034 (0.12)	0.49 (1.67)	1.26*** (3.90)
Bm	0.31* (2.02)	0.14 (0.74)	0.25 (1.49)	0.78*** (6.71)
Age	-0.011 (-1.58)	-0.0028 (-0.51)	-0.0046 (-0.98)	-0.012** (-2.59)
Year Fixed Effect	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes
cons	-10.30*** (-5.11)	-8.49*** (-3.98)	-11.64*** (-5.63)	-27.67*** (-17.60)
Observations	3,512	3,967	4,070	4,233

t -statistics in parentheses;* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8. Regression Results of ESG Controversies on ESG Scores, EU and UK Firms by Size

The table presents of is the same logistic regression model as Table 5 specification (1). The sample for EU firms split by total assets .With the dummy dependent variable ESGC: 1 if there is any controversies for firm i in year t , 0 if not. The independent variables are the lag two-year of Refinitiv ESG scores. Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets; Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO. The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC			
	Small (1)	Medium (2)	Large (3)	Largest (4)
EScore2	0.014** (2.77)	0.0066 (1.77)	-0.0022 (-0.74)	0.0046 (1.53)
SScore2	0.0052 (0.93)	0.0029 (0.67)	0.011*** (3.47)	0.0038 (1.11)
GScore2	0.014** (3.28)	0.011** (3.16)	0.0064** (2.61)	0.0068** (2.68)
Lgmc	0.031 (0.26)	0.23 (1.90)	0.46*** (4.48)	0.98*** (12.96)
Std	0.026 (1.90)	0.026 (1.91)	0.037** (2.79)	0.044** (3.16)
Rg	0.046 (1.73)	0.024 (1.43)	0.012 (1.05)	0.0039 (0.52)
Roa	-0.54 (-0.84)	-0.99 (-1.23)	-0.14 (-0.15)	-3.38* (-2.41)
Leverage	0.8 (1.85)	0.93* (2.06)	1.32** (3.02)	2.28*** (4.06)
Bm	0.0036 (0.02)	0.20 (1.19)	0.35* (2.44)	0.79*** (8.27)
Age	-0.0015 (-0.15)	-0.0003 (-0.04)	0.014* (2.05)	0.0042 (0.53)
Year Fixed Effect	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes
Country Fixed Effect	Yes	Yes	Yes	Yes
_cons	-2.123 (-0.80)	-5.578 (-1.81)	-11.54*** (-4.49)	-24.89*** (-13.03)
Observations	2,885	3,041	3,090	3,256

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9. Regression Results of ESG Controversies on ESG Scores, robustness

The table shows the regression results of ESGC on two-year lag of Refinitiv ESG score using different models and samples. Market Capitalization (Lgmc) is the logarithm of market capitalization; Stock Return Volatility (Std) is the standard deviation of previous 12 months stock return. Revenue Growth (Rg) is the revenue growth rate from previous year; Return on Asset (Roa) is the net income divided by total assets; Leverage (Leverage) is the total liability divided by total asset; Firm Age (Age) is the number of years since IPO. Column (1) and (4) use logit model with firm fixed effect, Column (2) and (5) use logit model with cluster on Firm-level. Column (3) and (6) use logit model ; Column (1) -(3) use all sample, and column (4) -(6) use companies with more than 10-year observations.

	ESGC					
	(1)	(2)	(3)	(4)	(5)	(6)
Esg_lag2	0.0076*** (3.61)	0.019*** (10.74)	0.018*** (16.32)	0.0077*** (3.55)	0.018*** (9.18)	0.018*** (14.21)
LgMC	0.13** (2.83)	0.75*** (27.30)	0.77*** (45.18)	0.11* (2.28)	0.76*** (21.67)	0.81*** (39.30)
Std	0.0099* (1.97)	0.030*** (6.27)	0.035*** (9.12)	0.0069 (1.09)	0.0203** (3.19)	0.031*** (5.88)
Rg	0.0026 (0.62)	0.0064 (1.56)	0.0084* (2.31)	0.00240 (0.47)	0.0059 (1.20)	0.0076 (1.65)
Roa	-1.43*** (-4.73)	-1.95*** (-7.47)	-1.9*** (-9.85)	-1.55*** (-3.88)	-2.37*** (-5.54)	-2.46*** (-7.82)
Leverage	-0.028 (-0.13)	0.94*** (6.05)	0.92*** (9.33)	0.16 (0.66)	1.176*** (6.00)	1.09*** (8.97)
Bm	0.25*** (3.80)	0.68*** (12.53)	0.65*** (17.91)	0.25*** (3.60)	0.66*** (10.90)	0.63*** (15.32)
Age	0.19 (1.62)	0.0012 (0.36)	-0.003 (-1.52)	0.142 (1.05)	0.0025 (0.56)	-0.004 (-1.61)
Firm Fixed Effect	Yes			Yes		
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effect		Yes	Yes		Yes	Yes
Industry Fixed Effect		Yes	Yes		Yes	Yes
_cons		-20.68*** (-28.16)	-19.76*** (-43.08)		-20.75*** (-22.97)	-21.36*** (-39.37)
Observations	17,799	28,890	28,890	15,902	20,621	20,621

t-statistics in parentheses; * p < 0.10, ** p < 0.05, *** p < 0.01

Table 10. Violation Penalties and ESG Score

This table study the relation between company Refintiv ESG rating and the actual penalties. Column (1) and (4) use OLS model, the dependent variable is the log(penalties amount+1) where penalties is the amount of penalties the company paid. Column (2) and (5) use poisson regression, the dependent variable is count of penalties. And Column (3) and (6) use logit regression, the dependent variable is 1 if company every received penalties in a year. Column (1)-(3) include companies that headquartered in US, thus potential subject to the penalties. Column (4)-(6) include the companies that have ever received penalties. The error is clustered on Firm level.

	(1)	(2)	(3)	(4)	(5)	(6)
	Penalty Amount	Penalty Count	Penalty Dummy	Penalty Amount	Penalty Count	Penalty Dummy
ESGScore2	0.030*** (5.56)	0.0053** (2.83)	0.015*** (5.49)	0.0088 (1.41)	0.0017 (1.04)	0.0062** (2.68)
LgRv	0.866*** (8.21)			1.480*** (7.52)		
LgMC	0.56*** (5.46)	0.58*** (19.76)	0.63*** (15.38)	0.38* (2.09)	0.47*** (15.59)	0.4*** (10.04)
std	-0.014 (-1.21)	-0.0038 (-0.66)	-0.0099 (-1.39)	0.0031 (0.16)	-0.00033 (-0.06)	0.00026 (0.03)
Rg	0.035* (2.09)	0.0045 (1.25)	0.0068 (0.82)	0.016 (0.70)	0.0054 (1.60)	0.013 (1.48)
roa	-5.64*** (-10.14)	-1.05** (-3.28)	-1.37*** (-3.62)	-4.01*** (-3.66)	-0.80** (-2.58)	-1.46*** (-3.48)
leverage	0.52 (1.35)	0.8*** (4.16)	1.06*** (4.81)	0.76 (1.24)	0.68*** (3.84)	0.75*** (3.78)
bm	0.65*** (3.75)	0.55*** (9.00)	0.62*** (7.10)	0.68* (2.12)	0.47*** (7.15)	0.45*** (4.25)
age	0.019***	0.00032	0.0064*	0.0051	-0.000040	0.0037
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
	(3.46)	(0.18)	(2.29)	(0.89)	(-0.03)	(1.71)
_cons	-24.72*** (-12.97)	-13.45*** (-20.51)	-14.59*** (-15.04)	-40.62*** (-14.79)	-12.86*** (-19.10)	-11.98*** (-11.46)
Oberservations	16,848	16,848	16,260	10,150	10,150	10,150

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 11. MSCI score cross predictability

This table show the logit regression results of ESGC on MSCI ratings, both the industry weighted ESG score and the sub-pillar scores. The dependent variable is a dummy variables ESGC that equals 1 if company have controversies in a given year. The independent variable in Column 1 is the two-year lag of industry weighted MSCI rating, and Column 2-4 is the two-year lag of separate MSCI E,S,G pillar scores. Column 5 include three MSCI pillar scores. The regression results shows that industry weighted MSCI score and Social pillar score predict less ESG controversies, whereas MSCI E score predict more future controversies . The standard errors are clustered on firm level.

	ESGC				
	(1)	(2)	(3)	(4)	(5)
Msci_2	-0.031* (-2.28)				
Msci_e_2		0.044** (2.67)			0.048** (2.96)
Msci_g_2			-0.028 (-1.87)		-0.026 (-1.76)
Msci_s_2				-0.041* (-2.19)	-0.045* (-2.41)
LgMC	1.02*** (36.08)	0.99*** (33.89)	1.01*** (36.22)	1.01*** (36.20)	0.99*** (33.97)
Std	0.042*** (6.79)	0.042*** (6.80)	0.042*** (6.74)	0.042*** (6.84)	0.042*** (6.78)
Rg	0.0033 (0.84)	0.003 (0.76)	0.0036 (0.85)	0.0032 (0.81)	0.0031 (0.76)
Roa	-2.42*** (-6.81)	-2.36*** (-6.61)	-2.38*** (-6.66)	-2.41*** (-6.77)	-2.32*** (-6.50)
Leverage	1.26*** (7.13)	1.21*** (6.84)	1.25*** (7.04)	1.25*** (7.05)	1.22*** (6.96)
Bm	0.84*** (12.70)	0.83*** (12.44)	0.84*** (12.65)	0.84*** (12.70)	0.82*** (12.34)
Age	0.0045 (1.32)	0.0032 (0.95)	0.004 (1.19)	0.0042 (1.23)	0.0037 (1.11)
_cons	-27.08*** (-32.62)	-26.60*** (-31.72)	-26.75*** (-32.17)	-26.80*** (-32.26)	-26.20*** (-31.08)
Observations	19,166	19,166	19,164	19,166	19,164

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 12. Media Scrutiny by Industry and Topic This table list the top 3 industries subject to most media scrutiny by topic. Column (1)-(3) differs in different measures of media scrutiny. Column (1) is the sum of ESGC divided by total number of companies in the industry. Column (2) is the sum of ESGC divided by the sum of total assets in the industry. Column (3) is the sum of ESGC divided by the sum of employee in the industry.

Topics	Top 3 Industries
Total	Consumer Non-Cyclicals, Fossil Energy, Utilities
Accounting	Financials, Fossil Energy, Technology
Anti-Competition	Consumer Non-Cyclicals, Fossil Energy, Technology
Business Ethics	Consumer Non-Cyclicals, Financials, Fossil Energy
Child Labor	Consumer Cyclical, Consumer Non-Cyclicals, Technology
Consumer	Financials, Technology, Utilities
Copyrights	Consumer Non-Cyclicals, Healthcare, Technology
Critical Countries	Consumer Non-Cyclicals, Fossil Energy, Technology
Customer HS	Consumer Cyclical, Consumer Non-Cyclicals, Healthcare
Diversity Opportunity	Consumer Cyclical, Consumer Non-Cyclicals, Industrials
Employees HS	Basic Materials, Consumer Non-Cyclicals, Fossil Energy
Environment	Basic Materials, Fossil Energy, Utilities
Human Rights	Basic Materials, Consumer Non-Cyclicals, Fossil Energy
Insider Dealings	Financials, Healthcare, Technology
MgtComp	Consumer Non-Cyclicals, Financials, Fossil Energy
Privacy	Consumer Cyclical, Financials, Technology
Product Access	Financials, Technology, Utilities
Public Health	Consumer Non-Cyclicals, Fossil Energy, Utilities
Resp Marketing	Academic & Educational Services, Consumer Non-Cyclicals, Healthcare
Responsible RD	Consumer Cyclical, Consumer Non-Cyclicals, Healthcare
Shareholders	Academic & Educational Services, Clean Energy, Healthcare
Tax Fraud	Consumer Non-Cyclicals, Financials, Technology
Working Condition	Consumer Cyclical, Consumer Non-Cyclicals, Fossil Energy
Mgt Departures	Consumer Non-Cyclicals, Financials, Technology

Table 13. Regression Results of ESG Controversies on ESG Scores, By Industry

The table presents of is the same logistic regression model as Table 4 specification (1) . The sample is split by industry. The industry is defined as the ‘Major Industry’ label in Refinitiv. With the dummy dependent variable ESGC: 1 if there is any controversies for firm *i* in year *t*, 0 if not. The independent variables are the lag two-year of ESGC, Refinitiv ESG scores. The control variables are log of market capitalization (Lgmc) , advertisement expense ratio (Ad_r), an indicator if company has advertising expense and the standard deviation of stock return over 12 month. The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC					
	Academic & Educational	Basic Materials	Clean Energy	Consumer Cyclicals	Consumer Non-Cyclicals	Financials
ESGScore2	0.057	0.017***	0.012	0.013***	0.011**	0.018***
	(1.11)	(4.64)	(0.30)	(5.44)	(2.94)	(5.61)
ESGC2	-3.34	0.75***	0.98	1.04***	1.07***	1.23***
	(-1.63)	(5.75)	(0.46)	(11.36)	(7.62)	(11.91)
Observations	56	2,395	49	4,607	1,940	4,989

t statistics in parentheses;* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

	ESGC					
	Fossil Energy	Healthcare	Industrials	Real Estate	Technology	Utilities
ESGScore2	0.032***	0.024***	0.019***	0.0028	0.015***	0.025***
	(6.41)	(6.56)	(7.20)	(0.39)	(4.95)	(4.17)
ESGC2	1.07***	1.34***	0.98***	1.79***	1.30***	1.04***
	(6.72)	(9.90)	(10.21)	(4.89)	(11.59)	(6.35)
observations	1,622	2,934	4,843	1,669	3,696	1,274

t-statistics in parentheses;* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 14. Media Scrutiny and ESG2, ESGC2 Coefficients

The table presents of is the logit regression result of ESGC on two-year lag of ESG score and two year lag of ESGC by industries . The dependent variable ESGC is 1 if there is any controversies for firm i in year t, 0 if not. The control variables are log of market capitalization (Lgmc) , advertisement expense ratio (Ad_r), an indicator if company has advertising expense and the standard deviation of stock return over 12 month. Panel A represents the regression results in EU and panel B represents the regression results in US.

Panel A. ESG, ESGC regression by Industry (US Firms)

	ESGC				
	Academic	Basic Materials	Consumer Cyclicals	Consumer Non- Cyclicals	Financials
ESGScore2	0.057* (2.26)	0.0064 (1.05)	0.016*** (3.91)	0.0028 (0.51)	0.01 (1.68)
ESGC2	-3.34 (-1.38)	0.49* (2.10)	0.98*** (6.42)	1.15*** (4.88)	1.16*** (6.48)
Observations	56	984	2610	977	2,755

	ESGC					
	Fossil Energy	Healthcare	Industrials	Real Estate	Technology	Utilities
ESGScore2	0.026*** (3.75)	0.021*** (4.38)	0.015*** (3.57)	-0.0019 (-0.16)	0.012** (2.62)	0.027* (2.39)
ESGC2	1.13*** (4.86)	1.25*** (6.84)	1.00*** (5.68)	1.98*** (5.58)	1.43*** (8.20)	0.77** (3.05)
Observations	844	2,026	2,232	1,234	2,367	691

Panel B. ESG, ESGC regression by Industry (EU Firms)

	ESGC				
	Basic Materials	Consumer Cyclicals	Consumer Non- Cyclicals	Financials	Fossil Energy
ESGScore2	0.029*** (4.70)	0.012* (2.08)	0.025*** (3.80)	0.025*** (4.46)	0.054*** (4.72)
ESGC2	0.86*** (5.02)	1.11*** (6.00)	0.83** (3.05)	1.05*** (6.10)	0.79** (2.58)
Observations	1,411	1,997	963	2,234	778

	ESGC				
	Healthcare	Industrials	Real Estate	Technology	Utilities
ESGScore2	0.0380*** (3.74)	0.0228*** (4.61)	0.0622* (2.36)	0.0204** (3.07)	0.0264* (2.48)
ESGC2	1.524*** (4.31)	0.928*** (5.87)	-0.233 (-0.19)	0.964*** (5.08)	1.106*** (4.29)
Observations	908	2,607	255	1,322	583

Table 15. Regression Results of ESG Controversies on ESG Scores, by Year

The table presents of is the same logistic regression model as Table 5 specification (1) . The sample is split by Year. With the dummy dependent variable ESGC: 1 if there is any controversies for firm *i* in year *t*, 0 if not. The independent variables are the lag two-year of ESGC, Refinitiv ESG scores . The control variables are log of market capitalization (LgMC) , advertisement expense ratio (Ad_R), an indicator if company has advertising expense and the standard deviation of stock return over 12 month. The result suggests that a higher ESG score associated with an increased likelihood of ESG controversies.

	ESGC									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	
ESGScore2	0.026**	0.012	0.015	0.022**	0.030***	0.034***	0.026***	0.019***	0.011*	
	(2.80)	(1.40)	(1.76)	(3.09)	(4.48)	(5.38)	(4.86)	(4.00)	(2.23)	
ESGC2	1.46***	0.98***	1.43***	1.13***	1.04***	0.74***	0.80***	1.00***	1.03***	
	(5.50)	(3.62)	(5.56)	(5.10)	(4.78)	(3.44)	(4.02)	(5.35)	(6.07)	
Observations	522	519	753	892	940	1,022	1,186	1,296	1,342	

	ESGC									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	
ESGScore2	0.015**	0.018***	0.016**	0.018***	0.0066	0.018***	0.020***	0.013***	0.013***	
	(3.16)	(3.74)	(2.81)	(3.61)	(1.45)	(4.26)	(5.31)	(4.13)	(4.25)	
ESGC2	1.50***	1.14***	1.22***	1.21***	1.58***	1.11***	1.29***	1.53***	1.41***	
	(8.85)	(6.72)	(5.99)	(6.94)	(8.05)	(7.04)	(8.80)	(11.99)	(11.70)	
Observations	1,410	1,363	1,321	1,492	2,099	2,598	3,250	3,832	3,973	

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 16. ESG Controversies Cumulative Abnormal Return

Panel A is the summary statistics for cumulative abnormal return of [-5,5] for company with ESG controversies. The return is calculated using CAPM model, market return is the value weighted market index from the Center for Research in Security Prices, The parameter is estimated using [-250,-50]. Panel B is regression results on ESG controversies cumulative abnormal return The dependent variable is the cumulative abnormal return of [-5,5] for company with ESG controversies The independent variables are the lag two-year of ESGC, Refinitiv ESG scores. The control variables are log of market capitalization (LgMC) , advertisement expense ratio (Ad_R), an indicator if company has advertising expense and the standard deviation of stock return over 12 month.

Panel A. the Summary Statistics for Cumulative Abnormal Return

	Mean	T-stat	Min	Med	Max	Perc pos.%	N
CAR	-0.4%	-8.09	-26.72%	-0.31%	23.48%	47 %	20509

Panel B. Regression Results on ESG Controversies Cumulative Abnormal Return

	ESGScore2	ESGC2	LgMC	Ad_R	Ad_dummy	std	Rg
Coefficient	0.00000336	-0.00326*	0.00215***	0.0113	-0.0000163	-0.00427	0.00426
T-statistics	(0.09)	(-2.32)	(4.39)	(0.37)	(-0.01)	(-0.33)	(1.75)

t-statistics in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$