Analysts' reaction to media coverage on corporate misconducts

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Abstract

We examine analysts' reaction to media reporting corporate misconducts. We find that media attention on corporate environmental, social and governance (ESG) misconducts is associated with higher analyst coverage, while contributing as well positively and significantly to the earning forecast bias. Our empirical findings are consistent with the "rational overoptimism" hypothesis and with the implications of the Grossman-Stiglitz paradox. Results are robust to the use of different considered measures of forecast error, analyst overoptimism, and instrumental variable approaches.

Keywords: analysts' forecasts, market efficiency, corporate misconducts
JEL numbers:

1. Introduction

Academics and practitioners have always been interested in understanding the reliability of analysts' forecasts due to the crucial role financial analysts play in mitigating information asymmetries and in conveying crucial information about future expected corporate values to investors in financial markets. In particular, when uncertainty is high, analysts' outcomes become more valuable and investors tend to react more strongly to their revisions (Loh and Stulz, 2018). For this reason, a better understanding of the reliability of the analysts' outcomes in presence of higher uncertainty about future corporate performance is of utmost importance. Our empirical analysis aims to shed light on a novel relevant issue in this specific branch of the literature: the effects that media coverage (including new social media) on corporate misconducts have on analysts' coverage and forecasts. The question is becoming more and more important in a world where financial asset dynamics tend to be increasingly affected not just by events, but also by the intensity of media coverage, coupled with the way experts interpret these novel dynamics.

Financial analysts represent a subset of more informed agents that professionally invest in information and should therefore have an advantage over nonprofessional investors. In principle their average forecasts should be unbiased and as close as possible to the concept of "rational expectations" (Muth, 1961) since analysts' reputation depends on their forecasting accuracy. The reality is more complex since analysts can find it optimal to express overoptimistic reports with the aim of improving business relationships between the brokerage house they work for and the analysed companies (e.g., Michaely and Womack, 1999; Cowen, Groysberg and Healy, 2006, and Jegadeesh, Kim, Krische and Lee, 2004), increasing in this way the likelihood of a successful carrier (Hong and Kubik, 2003). In this perspective a positive (overoptimistic) bias is not at odds with analyst rationality as it can be the optimal outcome of a maximisation process where analysts' trade-off forecasting accuracy with the desire to build relationships with the company by providing favourable coverage (Lim, 2001). Along the same line Scherbina (2007) shows that the bad news withheld by analysts are incorporated in stock prices with delay thereby reducing market efficiency, Easterwood and Nutt (1999) show that analysts underreact to negative information and overreact to positive information, while Ashour (2019) find that analysts (with a herding behaviour) tend to supress negative information for high credit risk stock by anchoring their earning per share (EPS) forecasts to the average industry forecasts without sufficient adjustment.

Our empirical work proposes an original contribution testing another aspect of the analyst overoptimism hypothesis by analysing the reaction of analysts to media coverage of corporate misconducts on the traditional press and social media. This point of observation is original in several respects. First of all, in our case, analysts that want to keep a good relationship with the company cannot hide information - as in the Hong et al. (2000) and Scherbina (2007) stories - that has already been made public by (conventional and social) media coverage but are expected to react less unfavourably to it. As a consequence, according to our research hypothesis illustrated in the next section, the forecast bias is expected to increase in (conventional and social) media coverage intensity on corporate misconducts.

With our research, we as well aim to contribute to the literature on analysts' coverage. In particular, we expect that media coverage of corporate misconducts will raise the number of analysts covering the firm. Assuming that prior to news arrival the stock price was in its steady state, the presence of new information on corporate fundamentals to which analysts on average give an overoptimistic interpretation creates in fact room for entry of new analysts that may exploit this market opportunity. This second research hypothesis dates back to the seminal theoretical work of Grossman and Stiglitz (1980) acknowledging that investors will not rationally incur the expenses of gathering information unless they expect to be rewarded by higher gross returns.

Given the characteristics of our main variable of interest our paper contributes as well to the literature on the role of new media information on financial markets and of the specific effect that news about corporate misconducts have on forecasts and prices. We expect (conventional and social) media to be an important source of information for both financial investors and analysts. Tetlock et al. (2008) show that media give further information on corporate fundamentals that is otherwise hard to quantify in accounting and financial statements and is useful to predict earnings and stock price. Along the same line, Fang and Peress (2009) find evidence on the role of media in alleviating information asymmetries by showing that absence of media coverage is associated with higher stock returns with respect to companies with high media coverage. In our inquiry, we decide to focus our attention on media reporting corporate misconducts related to the environmental, governance and social (ESG) domain by exploiting a novel source (RepRisk) measuring the relevance of such misconducts media attention. The

choice to focus on the ESG domain is motivated by the fact that corporate social responsibility (CSR) is assuming an increasing role in financial markets.[1]

Our empirical findings are consistent with the hypothesis that analysts tend to increase their coverage when a company is affected by negative media attention, while contributing as well positively and significantly to a positive forecast bias. We show that our results are robust to the use of different measures of forecast error, analyst overoptimism, and instrumental variable approaches.

Our results contribute to the literature on analysts' ooveroptimism by showing that analysts "rationally" under evaluate the effect of corporate misconducts on corporate performance and have relevant implications in terms of market efficiency. Overoptimistic forecasts could prevent investors from evaluating accurately the effect that corporate misconducts and negative media attention have on corporate performance affecting in this way the informativeness of market prices (Grossman and Stiglitz, 1980) and, consequently, market efficiency. Along this line of research, Barberis et al. (1998) show that investors suffer from conservatism bias and do not update their beliefs sufficiently when they observe public information, while Engelberg et al. (2018) show that abnormal returns on the earning announcement date are due to biased expectations. We therefore show with our findings a new channel that could explain why prior literature finds that "bad news travel slow" (Hong et al.,2000), why investors tend to underreact to bad news and how news affects the momentum profitability strategy market anomaly. Finally, Bulkley and Harris (1997) show that high volatility and underpricing could be explained by forecast errors. If this is the case our paper could also partially contribute to explain excess stock price volatility by showing that higher negative media attention on corporate misconducts can be a source of it.

The paper is organized as follows. In section 2, we elaborate our research hypothesis. In section 3, we look at the structure of our dataset. In section 4, we test empirically our research

[1] The 2017 KPMG report shows that CSR reporting has become standard practice for 75% of the 4,900 surveyed large and mid-cap companies in the world. The 2018 report on *Socially Responsible Investing Trends in the United States* shows that the US-domiciled assets under management using SRI strategies grew to 12 trillion at the beginning of 2018 from 8.7 trillion at the beginning of 2016 (an increase of 38 percent), reaching the share of 1 dollar out of 4 in US assets under management.

The growing importance of CSR is witnessed by the 2018 address of Larry Fink, the CEO and founder of the largest world investment fund (Blackrock) when he argues that "society increasingly is turning to the private sector and asking that companies respond to broader societal challenges. Indeed, the public expectations of your company have never been greater. Society is demanding that companies, both public and private, serve a social purpose. To prosper over time, every company must not only deliver financial performance, but also show how it makes a positive contribution to society" and that "Without a sense of purpose, no company, either public or private, can achieve its full potential. It will ultimately lose the license to operate from key stakeholders" (Fink, 2018).

hypothesis and we deal with endogeneity concerns. In section 5 we investigate the drivers of analysts' behaviour and in section 6 we show that our results are robust when we consider different measures of analysts forecast bias. Finally, in section 7, we conclude.

2. Theoretical Framework

a) Media coverage on CSR corporate misconducts raises the number of analysts covering the firm

In their seminal work Grossman and Stiglitz (1980) argue that analysts would find optimal to invest in costly collection of information on companies if they expect that this activity can be made profitable by trading or providing information services to the market. Along the same line, Loh and Stulz (2018) empirically show that analysts find optimal to invest in costly collection of information and work harder in bad times because their outputs have a more relevant stock price impact and investors rely more on their outputs, compensating in this way the higher effort required in collecting information. From a different point of observation, Kacperczyk, Van Nieuwerburgh, and Veldkamp (2016) show that fund managers generate higher returns and their signals are more valuable by investors when the uncertainly about asset payoffs and the price of bearing risk in recession is high since their informational advantage over the unskilled increases. We argue that the same reasoning works when we replace aggregate bad times (recession) with bad times concerning single companies (and higher uncertainty around its earnings) that we assume as being correlated with negative media attention on corporate misconducts. On this point, Frankel, Kothari, and Weber (2006) show that analysts are more informative when corporate uncertainty is high. Furthermore, when a stock attracts high media attention, analysts' outcomes are as well more likely to get the attention of the media (Rees et al., 2015). For these reasons, we expect that analysts' benefits from covering the firms after the spread of bad news will be high and therefore bad news will be associated with an increase in analyst coverage.

b) Media coverage on CSR corporate misconducts enlarges analysts' forecasts bias on the side of optimism

The literature described in the introduction provides ample empirical evidence and theoretical rationales on analysts' overoptimism. What we argue in our research hypothesis is that the arrival of original new information under the form of (new and old) media coverage of corporate misconducts raises the positive analysts forecast bias. One reason for formulating this research hypothesis is that the behaviour leading to this outcome is the optimal choice for analysts, in a model where they minimize the expected earning forecast error by trading-off forecasting accuracy with good relationships with the analysed companies (and/or with the company that has business relationships with the organisation they belong to) in order to gain privileged access to private information and build good relationships between their organisation and the company itself. In particular, according to the theoretical framework introduced by Lim (2001), the less the earnings become predictable, as it is in the case of reputational losses due to media attention on corporate misconducts, the more the overoptimistic bias is expected to increase because uncertainty raises the value of privileged information and analysts have more to benefit informationally when trading off positive bias with preferential access to corporate information. For this reason, we expect that higher negative media attention will raise the overoptimistic bias allowing analysts to have preferential access to corporate private information. Along the same line, literature has also shown that analysts find optimal to withheld private information of which they are aware in advance (Hong et al., 2000), thereby reducing the speed at which stock prices incorporate this new information (Scherbina, 2007). In the case of our research object negative news are already circulating due to media coverage and therefore analysts cannot withhold them. However, as explained above we derive the prediction that analysts find it optimal to underestimate the negative effects of corporate misconducts.

3. Dataset

Our sample is composed by firms that have been included in the MSCI USA Index in the 2007-2018 period. The purpose of the index is to measure the performance of the large and mid-cap firms in the US market by covering the 85% of the free float-adjusted market capitalization.
For what concerns data of media attention on corporate misconducts, our source of information is RepRisk (www.reprisk.com), a Swiss company that is leader in collecting information on environmental, social and governance (ESG) corporate business conduct risk. The RepRisk Index (*RRI*) is widely used in the financial intermediaries, insurance providers and institutions

such as United Nations, Dow Jones, the Carbon Disclosure Project (CDP), The Financial Times Stock Exchange (FTSE) and Norwegian Global Pension Fund.

RepRisk daily screens and collects information over more than 80,000 sources, including newspapers and web media (online news, social media and blogs), on corporate business conduct risk considering the 28 ESG parameters commonly used in the corporate social responsibility literature.[2] The information is collected in more than 20 languages allowing us to evaluate the impact of the news from the moment in which they are disseminated at local level until the moment in which they are known at international level. After collecting information on corporate misconducts, a specialized team of analysts evaluate media intensity by looking at the severity of the misconducts (for example, considering if the misconduct has been deliberate or if it has been an accident) and at the source where the news has been published. Considering these parameters, a score (*RRI*) spanning from 0 to 100 is assigned. In this way, our index allows us to capture accurately the intensity of corporate negative media attention.

Our source of information on analysts' forecasts is the Institutional Brokers' Estimate System (I/B/E/S) database. The number of monthly outstanding forecasts and the monthly consensus forecast of the analysts are available among other variables in the dataset.

Finally, we retrieve balance sheet and financial information from Compustat. Our final dataset contains information on 667 firms located in the United States. The variables that are included in our final dataset are reported in table 1.

In table 2, we report corporate summary statistics that we use in our empirical models, comparing the characteristics of the firms under negative media attention with characteristics of firms that are not. Companies under negative media attention are followed by more analysts (around 17.9 against 13.1) and report a larger bias (0.06 against 0.02). At the same time, companies with negative media attention are larger, consistently with the literature that claims that size is an important determinant of media attention (i.e., Fombrun and Shanley, 1990).

4. Econometric Analysis

4.1 Analyst Coverage

In order to test hypothesis (a), we estimate the following model:

[2] Further information are included in the Appendix.

$$
\begin{aligned}
&Analyst\ Coverage_{i,t} \\
&\quad = \alpha + \beta RRI_{i,t} + \gamma Size_{i,t} + \delta Trading\ Activity_{i,t} + \zeta Firm\ Profitability_{i,t} \\
&\quad + \theta Loss_{i,t} + \mu Book\ to\ Market_{i,t} + \sum_{p=1}^{n(A)} \eta_p\ Firm\ Fixed\ Effects_{\ p} \\
&\quad + \sum_{s=1}^{n(B)} \xi_s\ DYear_s + \varepsilon_{i,t}
\end{aligned}
$$

(1)

Our dependent variable is "Analyst coverage" of firm *i* at time *t*. This variable comes from the I/B/E/S dataset and it has been computed by considering the number of analysts reporting at least one earnings forecast on firm *i* at time *t*. Our main variable of interest among regressors is the Reputational Risk Index (*RRI*), that measures the impact of media intensity on corporate misconducts.

In order to define our set of controls we follow the literature and include size, turnover, profitability, leverage and a dummy for corporate losses as controls. Size is considered an important determinant of analyst coverage since, the larger the firm, the higher is expected to be the demand for analyst service and the probability that analysts' outputs will generate transactions for their brokerage house (Bhushan, 1989). Stocks with higher turnover are expected to generate higher brokerage commissions and, for this reason, to attract more analysts (Hayes, 1998). We therefore expect that a higher turnover is associated to larger analyst coverage. Book-to-market is regarded as an important predictor of stock returns in the Fama-French multi-factor asset pricing model and, as such, it is expected to attract reduced analyst coverage due to the higher likelihood that the company can default and be delisted in the near future. We as well include financial performance variables. In particular, financial variables are known to be important determinants of corporate misconducts and could be at the same time correlated with analyst coverage. The literature shows that more profitable firms are able to generate more brokerage trading and, for this reason, are likely to have more analysts and/or coverage (Bhushan, 1989; Jegadeesh et. al, 2004). We as well follow the literature and include a dummy variable equal to one if the company reports losses during the considered quarter.

Finally, we include in our specification year dummies and firm fixed effects. The introduction of year dummies allows us to capture macroeconomic effects common to all sample companies

and the increasing trend in analyst coverage observed across sample years (i.e., Hong, Lim and Stain, 2000), while firm fixed effects allow us to capture idiosyncratic time invariant corporate characteristics.

Findings from the four estimated specifications are presented in Table 3. They show that negative media attention has a positive and statistically significant effect on analyst coverage in all specifications. All the control variables have the expected sign. In particular, firm size, trading activity and firm profitability are positively correlated with analyst coverage, while the book to market ratio is negatively correlated with analyst coverage.

Despite we are estimating the within effect corporate variation in negative media attention on analysts' coverage, endogeneity could still in principle affect our results. In particular, time varying characteristics of the firm could be correlated with both negative media attention and analyst coverage. In order to deal with endogeneity, we propose two instrumental variable approaches.

In the first approach we follow the literature and use as instrument the twelve-month lagged average industry negative media attention excluding the specific firm from the average (i.e., El Ghoul et al., 2011, Kim et al., 2014). We expect the instrument to be relevant since industries with more competitive pressure should increase corporate temptation to act unethically (Shleifer, 2004). On the other side, we expect the instrument to be exogenous. Indeed, there is no reason to believe that one-year lag negative media attention on corporate misconducts excluding the specific firm from the average could increase the number of analysts following the specific firm. Results are shown in table 4 (columns (1)-(2)). The F-test shows that the instrument is not weak and above the well-known critical value of 10. Corporate negative media attention and one-year lagged average industry negative media attention are positively correlated as expected (hence the instrument is relevant) and our coefficient of interest in the second stage is still positive and statistically significant.

In order to provide a second check on the endogeneity problem we follow the literature (see Goss and Robert, 2011) and propose as instrument the state proportion of voters for the Republican party in the last presidential election in the firm's headquarter state. The rationale is that firms with low corporate social responsibility tend to be located in Federal states with a higher share of Republican voters and, as a consequence, corporate misconducts and media coverage on them should be higher in Federal states with a higher share of Republican voters (Rubin, 2008). This is because corporate executives and other stakeholders tend to cluster around firm headquarter's location and corporate policies tend to be close to values of local stakeholders to avoid conflicts with them. Hence, areas with predominance of Republican

voters (relatively less sensitive to environmental and social issues) tend to be associated to companies with relatively lower corporate social responsibility. The instrument should therefore be relevant, while not being suspected of being not valid since there is no reason to believe that the share of Republican voters in the state where the company is headquartered affect the number of analysts covering a given company that has its headquarter in that specific state. Results are reported in table 4 (columns (3)-(4)). The F-Test confirms again that the instrument is not weak, and it is also higher than the benchmark critical value of 10. In the first stage, the instrumental variable has the expected sign, while in the second stage, the negative media attention coefficient is still positive and statistically significant.

The effect of negative media attention on corporate misconducts on analyst coverage is strong and economically meaningful. In particular, according to results reported in table 5 (column (4)), one standard deviation increase in our measure of negative media attention is associated with a 0.8 standard deviation increase in analyst coverage.

4.2 The analyst Bias

In order to test the hypothesis that negative media attention is associated with a larger analyst forecast bias, we estimate the following model in equation (2):

$$FE_{i,t,T} = \alpha + \beta RRI_{i,t} + \gamma Size_{i,t} + \delta Trading\ Activity_{i,t} + \sigma Firm\ Profitability_{i,t} + \zeta Loss_{i,t} + \theta Forecast\ Horizon_{i,t} + \varphi Standard\ Deviation\ Cash_{i,t} + \sum_{p=1}^{n(i)} \eta_p\ Firm\ Fixed\ Effects_{\ p} + \sum_{s=1}^{n(t)} \xi_s\ DYear_s + \varepsilon_{i,t}$$

(2)

The dependent variable is the "forecast error" ($FE_{i,t}$) of the i-th company at time t, built following the standard approach in the literature:

$$FE_{i,t,T} = \frac{|E(FEPS_{i,t,T}) - EPS_{i,T}|}{P_{t-1}}$$

and defined as the difference between the average one-year ahead analyst forecast formulated at time t on the i-th company earnings per share at fiscal year T, $E(FEPS_{i,t,T})$, and the value of the earnings per share realized by the i-th company in the same fiscal year T, $EPS_{i,T}$, scaled by the stock price at time t-1.

We follow the literature and include as controls size, trading activity, cash-flow standard deviation, profitability, a dummy for corporate losses and distance from the release date. The literature shows that size is an important determinant of the analyst forecast bias since larger firms provide more information useful to improve forecasting accuracy and have more stable and predictable growth paths (Chung and Kim, 1994). We expect higher trading to be positively correlated with the bias since the former should also be associated with higher uncertainty and more mixed views among traders about future performance. Historical cash flow standard deviation is expected to affect positively uncertainty about future earnings. We therefore expect it to be associated with a larger bias in analyst forecasts. The distance to the release date is included in the specification since it is reasonable to expect that estimates will be more accurate when closer to the announcement date. On this specific point Elton et al. (1984) show that forecast errors decline as far as the distance from the release date gets shorter, even though their positive sign persists and is positively correlated with the variance of the forecast distribution. We as well include performance variables presumably affecting the bias such as profitability and a dummy variable equal to one if the firm reports a loss in the quarter. We also control for firm fixed effects in order to capture firm specific idiosyncratic time invariant factors affecting the bias. We finally include year fixed effects to capture drivers of the dependent variable related to time specific macroeconomic effects.

Econometric findings from our specification are reported in table 5. Consistently with our expectations, negative media attention has a positive and significant effect on the earnings forecast bias. Coefficients of our controls have the expected signs since cash flow standard deviation and trading activity have a positive and significant effect on the dependent variable, while forecast errors decrease for larger firms.

As in the case of the number of analysts, the observed significant relationship between negative media attention and the earnings forecast bias can be affected by endogeneity since there may be hidden drivers affecting both and creating a spurious correlation among them. In order to show that our results overcome endogeneity concerns we propose two instrumental variable approaches. In the first approach our instrument is the twelve-month lagged average industry negative media attention on corporate misconducts excluding the specific firm from the

average (table 6, column (1)- column (2)). The F-test shows that the instrument is strong, and its value is above the critical value of 10. The second stage estimate in which negative media attention is instrumented with the above variable shows again a positive and significant relationship between it and the dependent variable.

In order to refine further our approach when tackling endogeneity, we instrument our variable of interest with a measure of the distance of the corporate headquarter from the border of Canada. The rationale for using this variable is that US member states that are closer to Canada are more sensitive to environmental and social misconducts. *Ceteris paribus*, the public opinion will therefore be more sensitive for corporate misconducts that have been committed by companies that are located in the states that are closer to Canada. As a consequence, if we reasonably assume that the echo of their action will be stronger there, our Reprisk variable will capture a stronger negative reputational effect. The instrument is therefore presumed to be relevant. There are as well no reasons to believe that the instrument is not valid since it can be hardly assumed that distance from the border of Canada of the corporate headquarter can per se affect the earning forecast bias.

Our measure of distance from Canada is a dummy variable equal to one if corporate headquarters are located in a state that is on the border with Canada. Results are reported in table 6, (columns (3)-(4)). According with our hypothesis, distance from Canada is positively correlated with corporate negative media attention. The F-test shows that the instrument is strong and in the second stage our variable of interest negative media attention is still positive and statistically significant. In terms of economic significance, one standard deviation increase in negative media attention is associated with a 0.35 standard deviation increase in forecast error.

4.3 Analyst overoptimism

In order to test the hypothesis of the effect of media coverage on corporate misconducts on analysts' overoptimism bias we follow the literature and measure optimism not in absolute value. A higher value of the new dependent variable therefore indicates an higher overoptimistic analysts' forecast bias.

Results are reported in table 7. Negative media attention is associated with an increase in the optimistic bias. If we compare this finding with that on the absolute bias it seems that all the latter is explained by analysts overoptimism when evaluating corporate misconducts. The other coefficients are in line with the theoretical framework of Lim (2001). In particular, size, as we

discussed in the previous section, is a good proxy for corporate information environment and is negatively correlated with the optimistic bias. On the other side, trading activity and cash standard deviation are positively correlated with the optimistic bias, according to the hypothesis that the higher the uncertainty about the future earnings, the higher will be the optimistic analysts forecast bias.

We as well show that our results are not affected by endogeneity by employing the two instrumental variable approaches used for the absolute forecast bias and described in section 4.2. Results are shown in tables 8 and confirm that our findings are robust.

5. Investigating analyst behaviour

5.1 Do earnings become less predictable with negative media attention?

As we argued in the second research hypothesis, according to the model of Lim (2001), we expect the overoptimistic bias to be positively correlated with negative media attention because analysts' gains from building relationships with the company are larger when uncertainty about future earnings is higher. The maintained assumption is that higher negative media attention raises earning uncertainty. In this section, we investigate whether the maintained assumption holds.

In order to test this hypothesis, we consider two measures of earnings uncertainty such as the standard deviation of the earnings per share and the standard deviation of the earnings forecasts. Results are reported in table 9 (columns (1)-(2)) and show that negative media attention is positively correlated with both our measures of earnings uncertainty.

The combination of our main result with that on this test on the maintained assumption show that our findings are in line with Ackert and Athanassakos (1997) and Han, Manry, and Shaw (1998) that documents that companies with higher earnings variability or earnings forecast uncertainty are associated with more optimistic bias and with the hypothesis that analysts seek to gain corporate information access.

5.2 *Does analyst adjust their earnings per share?*

In this section we show evidence that the positive contribution of negative media attention on overoptimism does not mean that analysts do not adjust their forecasts on earnings per share in the correct direction.

In order to test this hypothesis, we create a dependent variable represented by the proportion of down reviews over total reviews and regress on it our main variable of interest using the standard controls. Results in table 9 (column (3)) show that negative media attention has a slightly positive and significant effect on the proportion of down reviews. This result, coupled with that on the positive contribution of negative media attention on overoptimism show that analysts do not adjust enough their forecasts, even though they move in the right direction.

6. Robustness check

6.1 Bias skewness as alternative measure of optimism

In order to show the robustness of our results we employ a different measure of analysts overoptimism. We use the skew of the analyst earnings forecast distribution as an alternative measure of overoptimism. This is because a positive skew is associated in the literature with suppressed negative opinions (Scherbina, 2007) that prevent forecast distributions to be symmetrically distributed.
We follow Scherbina (2007) and we construct the variable:

$$Skew_{i,t,T} = \frac{E\left(FEPS_{i,t,T}\right) - Median\ E\ (EPS_{i,t,T})}{|E(FEPS_{i,t,T})|}$$

as the difference between the mean and median earning forecast, where a positive value of this variable clearly indicates that the weight of positive forecasts is larger than that of negative forecasts in the distribution.
Results are reported in column (1) of table 10. According to our hypothesis, negative media attention is associated with a positive skew of the forecast distribution, consistently with the hypothesis of a positive relationship between negative media attention and the bias.

6.2 Scaled forecast bias and overoptimism

In a further robustness check we use an alternative measure of analyst bias overoptimismby scaling it for the one quarter lag standard deviation of the stock price. The logic is that, as

argued by Loh and Stulz (2018), the accuracy of analysts' forecasts has to been evaluated in relation to the uncertainty about profits and performance. When estimating our base specification with the new measures of the dependent variables (table 10, columns (2)-(3)), we find that *RRI* is still positive and statistically significant. This finding provides further evidence on the relevance of our main findings since also the bias scaled for uncertainty grows.

6.3 Further Robustness checks

We take into account that the spanning period we analyze includes the financial crisis, and this could potentially affect our results. In order to show that it is not the case, we drop from the sample all the observations from year 2007 until 2010. The magnitude and the significance of our results do not change.

Again, in order to check the robustness of our results, we check if outliers affect the analysis. Our results do not change when we winsorize the variables at the first and ninety-ninth percentiles.

Results are also robust when we construct our dependent variables, forecast error bias and over optimistic behaviour, using the median value of the consensus. This finding is important because it shows further evidence that our results are not driven by the earnings forecast of a few outliers but identify a behaviour that is common between analysts.

7. Conclusions

We study analysts' reaction to media spread of corporate misconducts. Our results show that higher negative media coverage on corporate misconducts produces a positive effect on analyst coverage. We as well show that an increase in media coverage about corporate misconducts significantly contributes to the earnings forecast bias. We provide evidence that our main finding can be interpreted consistently with the theoretical framework of Lim (2001) showing that negative media attention is associated with higher uncertainty about future earnings, thereby increasing the value of access to privileged information and further stimulating analysts to build relationships with the company they analyse and gain management information access. We as well show that our results are not affected by endogeneity and are not sensitive to the use of different measures of the dependent variable and to further robustness checks.

More specifically, we provide an original result in this perspective, showing that the arrival of new negative media coverage and its effect on corporate performance are not incorporated in unbiased analyst forecasts. Our research brings a novel contribution by showing that analysts rationally increase their coverage once the spread of bad news affect a company but at the same time adjust less than they should their forecasts to bad news.

Our results highlight several consequences analysts' incentives could have on market efficiency. In particular, they show that when analyst forecasts should be more useful to bridge the information asymmetries in financial markets, analysts have more incentives to provide biased information. Further research is needed to understand the potential consequences that this behaviour could have on market efficiency.

References

Ackert, L. F., & Athanassakos, G. (1997). Prior uncertainty, analyst bias, and subsequent abnormal returns. *Journal of Financial Research*, *20*(2), 263-273.

Ashour, S. (2019). Do analysts really anchor? Evidence from credit risk and suppressed negative information. *Journal of Banking & Finance*, *98*, 183-197.

Barberis, N., Shleifer, A., & Vishny, R. (1998). A model of investor sentiment. *Journal of Financial Economics*, *49*(3), 307-343.

Bhushan, R. (1989). Firm characteristics and analyst following. *Journal of Accounting and Economics*, 11(2-3), 255-274.

Bulkley, G., & Harris, R. D. (1997). Irrational analysts' expectations as a cause of excess volatility in stock prices. *The Economic Journal*, *107*(441), 359-371.

Chung, H. Y., & Kim, J. B. (1994). The Use of Multiple Instruments for Measurement of Earnings Forecast Errors, Firm Size Effect And The Quality of Analysts'forecast Errors. *Journal of Business Finance & Accounting*, *21*(5), 707-727.

Cowen, A., Groysberg, B., & Healy, P. (2006). Which types of analyst firms are more optimistic?. *Journal of Accounting and Economics*, *41*(1-2), 119-146.

Elton, E. J., Gruber, M. J., & Gultekin, M. N. (1984). Professional expectations: Accurary and diagonosis of errors. *Journal of Financial and Quantitative Analysis*, *19*(4), 351-363.

El Ghoul, S., Guedhami, O., Kwok, C. C., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital?. *Journal of Banking & Finance*, *35*(9), 2388-2406.

Engelberg, J., McLean, R. D., & Pontiff, J. (2018). Anomalies and news. *The Journal of Finance*, *73*(5), 1971-2001.

Easterwood, J. C., & Nutt, S. R. (1999). Inefficiency in analysts' earnings forecasts: systematic misreaction or systematic optimism?. *The Journal of Finance*, *54*(5), 1777-1797.

Fang, L., & Peress, J. (2009). Media coverage and the cross-section of stock returns. *The Journal of Finance*, *64*(5), 2023-2052.

Fink L., 2018, A sense of purpose, posted on Harvard Law School Forum on Corporate Governance and Financial Regulation, accessed at https://corpgov.law.harvard.edu/2018/01/17/a-sense-of-purpose/

Fombrun, C., & Shanley, M. (1990). What's in a name? Reputation building and corporate strategy. *Academy of Management Journal*, *33*(2), 233-258.

Frankel, R., Kothari, S. P., & Weber, J. (2006). Determinants of the informativeness of analyst research. *Journal of Accounting and Economics*, *41*(1-2), 29-54.

Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking & Finance*, *35*(7), 1794-1810.

Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *The American Economic Review*, *70*(3), 393-408.

Han, B. H., Manry, D., & Shaw, W. (1998). Uncertainty about future earnings as a determinant of bias in analysts' earnings forecasts. *Available at SSRN 2574*.

Hayes, R. M. (1998). The impact of trading commission incentives on analysts' stock coverage decisions and earnings forecasts. *Journal of Accounting Research*, *36*(2), 299-320.

Hong, H., Lim, T., & Stein, J. C. (2000). Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies. *The Journal of Finance*, *55*(1), 265-295.

Hong, H., & Kubik, J. D. (2003). Analyzing the analysts: Career concerns and biased earnings forecasts. *The Journal of Finance*, *58*(1), 313-351.

Jegadeesh, N., Kim, J., Krische, S. D., & Lee, C. M. (2004). Analyzing the analysts: When do recommendations add value?. *The Journal of Finance*, *59*(3), 1083-1124.

Kacperczyk, M., Van Nieuwerburgh, S., & Veldkamp, L. (2016). A rational theory of mutual funds' attention allocation. *Econometrica*, *84*(2), 571-626.

Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking & Finance*, *43*, 1-13.

Lim, T. (2001). Rationality and analysts' forecast bias. *The Journal of Finance*, 56(1), 369-385.

Loh, R. K., & Stulz, R. M. (2018). Is Sell-Side Research More Valuable in Bad Times?. *The Journal of Finance*, *73*(3), 959-1013.

Michaely, R., & Womack, K. L. (1999). Conflict of interest and the credibility of underwriter analyst recommendations. *The Review of Financial Studies*, *12*(4), 653-686.

Muth, J. F. (1961). Rational expectations and the theory of price movements. *Econometrica: Journal of the Econometric Society*, 315-335.

Rees, L., Sharp, N., & Twedt, B. (2015). Who's heard on the Street? Determinants and consequences of financial analyst coverage in the business press. *Review of Accounting Studies*, *20*(1), 173-209.

Rubin, A. (2008). Political views and corporate decision making: The case of corporate social responsibility. *Financial Review*, *43*(3), 337-360.

Scherbina, A. (2007). Suppressed negative information and future underperformance. *Review of Finance*, *12*(3), 533-565.

Shleifer, A. (2004). Does competition destroy ethical behavior?. *American Economic Review*, *94*(2), 414-418.

Tetlock, P. C., Saar-Tsechansky, M., & Macskassy, S. (2008). More than words: Quantifying language to measure firms' fundamentals. *The Journal of Finance*, *63*(3), 1437-1467.

Table 1. Variables

Panel A: Firm Characteristics

Variable name	Definition
Log (Market value)	Logarithm of the firm market value
Trading Activity	Ratio of the common share traded quarterly over the total shares issued
Profitability	Ratio of the total revenues over total assets
Loss	Dummy variable that takes a value equal to one if the firm reports a loss during the quarter
Book-to-Market	Ratio of the corporate book value (total assets minus total liabilities) over the market value
Cash Standard Deviation	Standard deviation of cash-flow quarterly data
Republicans	The proportion of Republican votes in the state where the firm is headquartered in the last presidential elections.
Canadian Border	The dummy variable equal to one if the state where the firm is headquartered has border with Canada, 0 otherwise.

Panel B: Corporate Negative Media Attention

Variable name	Definition
RRI	*Current Reputational Risk Index*
Industry Average RRI	*Average industry-year RRI*

Panel C: Analysts

Variable name	Definition
Analyst Coverage	Number of analysts report an earnings forecast for the given firm
Forecast Error	Absolute value of the difference between the average one-year ahead earnings Consensus forecast and the realized value of the earnings scaled for the one-month lagged stock price
Optimistic Bias	Difference between the average one-year ahead earnings Consensus forecast and the realized value of the earnings scaled by one-month lagged stock price
Standard deviation of the forecasts	Standard deviation of the earnings forecasts
Standard deviation of EPS	Standard deviation of earnings per share computed in the fiscal year window
Proportion of Down Estimates	The proportion of downward revisions over the total number of estimates
Skew	Difference between the average and the median earnings forecast consensus scaled by the absolute mean earnings forecast consensus
Optimistic Bias scaled for one-year lag stock volatility	Difference between the average one-year ahead earnings Consensus forecast and the realized value of the earnings scaled by one-quarter lagged stock price volatility
Forecast Error scaled by one-year stock volatility	The absolute value of the difference between the average one-year ahead earnings Consensus forecast and the realized value of the earnings scaled for one-quarter lagged stock price volatility

Table 2. Summary statistics

Panel A. Companies with zero media attention on corporate misconducts (RRI=0)

Variables	*Observations*	*Mean*	*SD*	*25th perc.*	*50th perc.*	*75th perc.*
Analyst Coverage	34744	13.109	7.405	7	12	18
Forecast Error	33747	0.037	0.507	0.001	0.002	0.008
Optimistic Bias	33747	0.020	0.507	-0.003	-0.001	0.002
Log (Market value)	35663	8.551	1.030	7.996	8.584	9.178
Trading activity	33987	0.704	0.598	0.374	0.553	0.857
Roe	34436	0.197	0.180	0.081	0.151	0.252
Loss	36821	0.003	0.059	0	0	0
Book-to-Market	35648	0.454	1.264	0.211	0.378	0.630
Cash Standard Deviation	34542	142.228	486.854	21.512	57.691	133.339
Republicans	33255	0.442	0.093	0.370	0.442	0.508
Canadian Border	35707	0.225	0.418	0	0	0
Standard Deviation of Earning Forecasts	33904	0.135	0.389	0.020	0.050	0.120
Standard Deviation of EPS	36583	0.662	1.643	0.096	0.220	0.596
Proportion of Downward Revisions	34744	0.208	0.328	0.000	0.067	0.286
Skew	34692	-0.003	0.272	-0.003	0.000	0.004
Optimistic Bias scaled by one-quarter lagged stock price volatility	12782	0.001	0.037	-0.003	-0.001	0.001
Forecast error scaled by one-quarter lagged stock price volatility	12782	0.009	0.036	0.001	0.002	0.006

Panel B. Companies with media attention on corporate misconducts (RRI>0)

Variables	***Observations***	***Mean***	***SD***	***25th perc.***	***50th perc.***	***75th perc.***
Analyst Coverage	48190	17.890	8.009	12	17	23
Forecast Error	46749	0.079	3.692	0.001	0.002	0.007
Optimistic Bias	46749	0.064	3.693	-0.003	0.000	0.002
RRI	49108	22.345	11.794	16	22	25
Log (Market value)	48745	9.614	1.276	8.806	9.552	10.396
Trading activity	45546	0.630	0.637	0.311	0.453	0.712
Roe	46618	0.214	0.185	0.087	0.165	0.282
Loss	49108	0.001	0.023	0	0	0
Book-to-Market	48745	0.165	13.898	0.222	0.393	0.660
Cash Standard Deviation	46578	482.512	1215.312	60.077	167.941	429.947
Republicans	39507	0.444	0.092	0.371	0.447	0.504
Canadian Border	47744	0.298	0.457	0	0	1
Standard Deviation of Earning Forecasts	47811	0.153	0.663	0.030	0.070	0.140
Standard Deviation of EPS	49019	1.404	16.981	0.140	0.307	0.794
Proportion of Downward revisions/Tot. Estimates	48190	0.231	0.311	0.000	0.105	0.333
Skew	48159	-0.003	0.379	-0.003	0.000	0.003
Optimistic Bias scaled by one-quarter lag stock price volatility	15222	0.003	0.102	-0.003	-0.001	0.002
Forecast error scaled by one-quarter lag stock price volatility	15222	0.010	0.101	0.001	0.003	0.007

Table 3. The impact of negative media attention on analyst coverage

VARIABLES	(1) OLS	(2) OLS	(3) OLS
RRI	0.192***	0.0255***	0.0183***
	(0.00196)	(0.00228)	(0.00162)
Log (Market value)		3.777***	1.548***
		(0.0307)	(0.0363)
Trading activity		2.967***	0.486***
		(0.107)	(0.0525)
Book-to-Market		-0.0288***	-0.00256
		(0.00487)	(0.00291)
Roe		5.134***	0.615***
		(0.126)	(0.231)
Loss		-3.986***	1.497***
		(0.481)	(0.562)
Firm Fixed Effects	*No*	*No*	*Yes*
Year Fixed Effects	*No*	*No*	*Yes*
Constant	13.39***	-22.25***	-4.947***
	(0.0355)	(0.311)	(0.544)
Observations	82,934	74,000	74,000
R-squared	0.114	0.330	0.822

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4. The impact of negative media attention on analyst coverage (Instrumental Variable estimates)

VARIABLES	(1) First Stage RRI	(2) Second Stage Analyst Coverage	(3) First Stage RRI	(4) Second Stage Analyst Coverage
One Year Lag Industry Average RRI	0.459***			
	(0.0158)			
Republicans			6.252***	
			(0.514)	
RRI		0.203***		0.565***
		(0.0152)		(0.0664)
Log (Market value)	0.204***	1.361***	6.323***	0.258
	(0.0751)	(0.0394)	(0.0512)	(0.419)
Trading activity	0.260***	0.481***	2.805***	1.448***
	(0.0866)	(0.0549)	(0.117)	(0.210)
Book-to-market	-0.0120**	-0.00268	-0.0731***	0.0129**
	(0.00498)	(0.00195)	(0.00741)	(0.00577)
Roe	-3.674***	1.588***	5.372***	2.473***
	(0.612)	(0.296)	(0.264)	(0.419)
Loss	-0.335	0.443	2.268**	-4.259***
	(1.115)	(0.645)	(1.054)	(0.739)
Firm Fixed Effects	*Yes*	*Yes*	*No*	*No*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Constant	16.63***	-6.686***	6.037***	-11.71***
	(1.052)	(0.741)	(1.998)	(1.326)
Kleibergen-Paap rk LM statistic (p-value)	746.862 (0.00)		139.881 (0.00)	
Observations	68,958	68,958	62,583	62,583
R-squared	0.681	0.799	0.348	0.482

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5. The impact of negative media attention on the absolute earning forecast error

VARIABLES	(1) OLS	(2) OLS	(3) OLS
RRI	0.00259***	0.00472***	0.00437***
	(0.000916)	(0.00166)	(0.00154)
Log (Market value)		-0.0909***	-0.360***
		(0.0172)	(0.0974)
Trading activity		0.0926***	0.145***
		(0.0251)	(0.0470)
Roe		-0.168***	0.181***
		(0.0648)	(0.0530)
Loss		10.59***	11.71***
		(3.759)	(4.193)
SD Devation Cash		0.000183***	0.000194***
		(3.70e-05)	(4.93e-05)
Forecast Horizon		-0.00127	-0.00140
		(0.00263)	(0.00284)
Firm Fixed Effects	*No*	*No*	*Yes*
Year Fixed Effects	*No*	*No*	*Yes*
Constant	0.0281***	0.742***	2.841***
	(0.00477)	(0.152)	(0.759)
Observations	80,496	71,403	71,403
R-squared	0.000	0.025	0.105

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6. The impact of negative media attention on the absolute earning forecast error (Instrumental Variable estimates)

VARIABLES	(1) First Stage RRI	(2) Second Stage Forecast Error	(3) First Stage RRI	(4) Second Stage Forecast Error
One year lagged mean industry RRI	0.454***			
	(0.0160)			
Canadian Border			1.692***	
			(0.0977)	
RRI		0.0112**		0.0769***
		(0.00488)		(0.0243)
Log (Market value)	0.198**	-0.356***	5.810***	-0.501***
	(0.0794)	(0.102)	(0.0552)	(0.143)
Trading activity	0.406***	0.180***	2.887***	-0.131**
	(0.0939)	(0.0487)	(0.116)	(0.0635)
Roe	-2.966***	0.153***	6.983***	-0.705***
	(0.608)	(0.0548)	(0.259)	(0.229)
Loss	-1.195	13.62***	-1.221	10.65***
	(1.104)	(4.865)	(1.134)	(3.746)
SD devation cash	0.000220***	0.000215***	0.00176***	4.89e-05
	(5.55e-05)	(5.10e-05)	(0.000103)	(4.87e-05)
Forecast Horizon	0.0102	-0.00305	-0.000770	-0.00157
	(0.00911)	(0.00291)	(0.0125)	(0.00308)
Firm Fixed Effects	Yes	Yes	No	No
Year Fixed Effects	Yes	Yes	Yes	Yes
Constant	21.14***	2.841***	-52.67***	4.459***
	(1.133)	(0.886)	(0.540)	(1.299)
Kleibergen-Paap rk LM statistic	723.687		297.061	
(p-value)	(0.00)		(0.00)	
Observations	66,046	66,046	69,519	69,519
R-squared	0.684	0.114	0.364	0.117

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7. The impact of negative media attention on forecast optimism

VARIABLES	(1) OLS	(2) OLS	(3) OLS
RRI	0.00277***	0.00429***	0.00420***
	(0.000916)	(0.00166)	(0.00154)
Log (Market value)		-0.0705***	-0.321***
		(0.0173)	(0.0976)
Trading activity		0.0642**	0.0954**
		(0.0257)	(0.0480)
Roe		-0.133**	0.152***
		(0.0648)	(0.0526)
Loss		10.26***	11.81***
		(3.773)	(4.201)
SD Deviation Cash		0.000161***	0.000189***
		(3.70e-05)	(4.93e-05)
Forecast Horizon		-0.00294	-0.00327
		(0.00263)	(0.00285)
Firm Fixed Effects	*No*	*No*	*No*
Year Fixed Effects	*No*	*No*	*Yes*
Constant	0.00966**	0.573***	2.307***
	(0.00477)	(0.153)	(0.765)
Observations	80,496	71,403	71,403
R-squared	0.000	0.022	0.102

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8. The impact of negative media attention on forecast optimism (Instrumental Variable estimates)

VARIABLES	(1) First Stage RRI	(2) Second Stage Optimistic Bias	(3) First Stage RRI	(4) Second Stage Optimistic Bias
One year lagged mean industry RRI	0.454***			
	(0.0160)			
Canadian Border			1.695***	
			(0.0973)	
RRI		0.0135***		0.0689***
		(0.00490)		(0.0241)
Log (Market value)	0.195**	-0.326***	5.772***	-0.434***
	(0.0788)	(0.101)	(0.0552)	(0.141)
Trading activity	0.409***	0.118**	2.863***	-0.138**
	(0.0940)	(0.0509)	(0.116)	(0.0623)
Roe	-2.948***	0.140**	6.940***	-0.612***
	(0.608)	(0.0552)	(0.257)	(0.225)
Loss	-1.210	13.51***	-1.272	10.31***
	(1.104)	(4.883)	(1.133)	(3.763)
SD devation cash	0.000221***	0.000210***	0.00177***	3.94e-05
	(5.55e-05)	(5.10e-05)	(0.000103)	(4.86e-05)
Forecast Horizon	0.0103	-0.00497*	0.00248	-0.00339
	(0.00911)	(0.00293)	(0.0124)	(0.00305)
Firm Fixed Effects	*Yes*	*Yes*	*No*	*No*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Constant	21.14***	2.521***	6.714***	2.135**
	(1.129)	(0.878)	(2.013)	(0.870)
Kleibergen-Paap rk LM statistic	702.431		293.123	
(p-value)	(0.00)		(0.00)	
Observations	66,069	66,069	61,924	61,458
R-squared	0.684	0.110	0.677	0.114

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9 The effect of negative media attention on the Proportion of Downward Revisions/Total Estimates, Standard Deviation of EPS and Standard Deviation of Earning Forecasts

VARIABLES	(1) Standard Deviation of EPS	(2) Standard Deviation of Forecasts	(3) Proportion of Downward Revisions
RRI	0.0170***	0.00104***	0.000733***
	(0.00413)	(0.000285)	(0.000138)
Log (Market value)	-0.190***	-0.0227	-0.0454***
	(0.0598)	(0.0146)	(0.00303)
Trading activity	0.529***	0.100***	0.0393***
	(0.111)	(0.0119)	(0.00459)
Roe	-1.192***	0.0280	-0.345***
	(0.0967)	(0.0223)	(0.0275)
Loss	0.398	1.407**	-0.0137
	(0.676)	(0.552)	(0.0433)
SD cash	7.32e-05***	4.73e-05***	7.34e-06***
	(1.70e-05)	(8.83e-06)	(1.67e-06)
Forecast Horizon	0.000308	0.0102***	0.00866***
	(0.00346)	(0.000602)	(0.000319)
Firm Fixed Effects	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*
Constant	2.750***	0.517***	0.602***
	(0.611)	(0.123)	(0.0403)
Observations	71,874	70,910	71,886
R-squared	0.146	0.256	0.111

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10. The impact of negative media attention on different measures of the dependent variables.

VARIABLES	(1) Skew	(2) Forecast Error scaled by one-quarter lag stock price volatility	(3) Optimistic Bias scaled by one-quarter lag stock price volatility
RRI	0.000344**	0.000124**	0.000128**
	(0.000156)	(5.52e-05)	(5.57e-05)
Log (Market value)	-0.00131	-0.00447**	-0.00660***
	(0.00496)	(0.00226)	(0.00227)
Trading activity	-0.0114*	0.00961***	0.0109***
	(0.00641)	(0.00213)	(0.00216)
Roe	-0.000657	-0.00353	-0.0146***
	(0.0141)	(0.00270)	(0.00342)
Loss	0.0357	0.0321*	0.0643**
	(0.0750)	(0.0170)	(0.0321)
SD cash	-4.03e-06	5.94e-06	5.04e-06
	(4.88e-06)	(4.17e-06)	(4.19e-06)
Forecast Horizon	-0.000515	0.000920***	7.42e-05
	(0.000434)	(5.91e-05)	(6.53e-05)
Firm Fixed Effects	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*
Constant	-0.0208	0.00879	0.0221*
	(0.0715)	(0.0133)	(0.0134)
Observations	71,814	25,117	25,117
R-squared	0.023	0.532	0.515

Appendix

Reputational Risk Index Criteria

Environment

Climate change, GHG emissions, and global pollution
Local pollution
Impacts on landscapes, ecosystems, and biodiversity
Overuse and wasting of resources
Waste issues
Animal mistreatment

Social

Community Relations
Human rights abuses,
corporate complicity
Impacts on communities
Local participation issues
Social discrimination

Employee Relations
Forced labor
Child labor
Freedom of association and collective bargaining
Discrimination in employment
Occupational health and safety issues
Poor employment conditions

Governance

Corruption, bribery, extortion, money laundering
Executive compensation issues
Misleading communication, e.g. “greenwashing”
Fraud
Tax evasion
Tax optimization
Anti-competitive practices