

# Do Employees Have Useful Information About Firms' ESG Practices?

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## Abstract

This paper investigates whether employees have useful information for assessing firms' environmental, social, and governance (ESG) practices. I analyze 10.4 million anonymous employee reviews via a word-embedding model to construct an inside view of corporate ESG practices. The inside view offers significant information beyond external ratings in predicting a firm's future misconduct, governance issues, downside risk, growth, and valuation. In addition, the inside view appears robust to greenwashing, theoretically and empirically. In various settings, including a novel court ruling, I show that low-cost changes in a firm's stated ESG policies do not affect the inside view, while costlier changes do.

**Keywords:** ESG, CSR, greenwash, cheap talk, employees, word-embedding, Glassdoor.

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## 1. Introduction

Investors are increasingly using environmental, social, and governance (ESG) criteria in their investment policies. According to the Principles for Responsible Investment (PRI), an investing network, investors committing to ESG investing controlled over 100 trillion dollars of assets in 2020, or twice the size of the US stock market. Given this trend, companies have been voluntarily disclosing more about their ESG policies and commitments, which are inputs into ESG ratings by external agencies, such as MSCI and Refinitiv. While those external ratings can be useful in assessing firms' ESG practices, their reliance on firms' voluntary disclosure makes these ratings prone to corporate greenwashing (i.e., ESG cheap talk) and calls for approaches in assessing ESG practices that are more robust to such behavior.

In this paper, I investigate whether a firm's employees can provide useful information about the firm's ESG practices, especially when the employees are allowed to share their views anonymously and thus have less of an incentive to greenwash the firm's image. Theoretically, employees' views could be uninformative if they do not care about ESG practices or do not observe such practices. However, if they do, their views could be useful in assessing firms' ESG policies and helpful in testing whether firms engage in greenwashing, i.e., not walking the ESG talk.

To answer these questions, I analyze 10.4 million anonymous reviews written by employees about their employers on Glassdoor.com, a career intelligence site. I aggregate the views of many employees into an index that represents an inside view of a firm's ESG practices. The inside view predicts not only a firm's future misconduct, accounting issues, shareholder activism, and downside risk, but also its valuation, growth, and likelihood of entering Fortune's list of 100 Best Companies to Work For. The inside view adds significant information relative to the MSCI ESG ratings when predicting these outcomes. Moreover, the inside view appears robust to corporate greenwashing as low-cost changes in a firm's ESG policies do not affect the inside view while more expensive changes do, across multiple settings, including a novel court ruling as an exogenous shock. Thus, perhaps unsurprisingly, the inside view has a low correlation with a firm's stated ESG policies and ratings, implying that corporate greenwashing may be pervasive.

My findings rely on capturing an inside view of ESG practices from Glassdoor reviews, which offers unique advantages. First, Glassdoor reviews are anonymous, allowing the reviewers to share opinions about a firm without fear of retaliation or an incentive to greenwash the firm’s public image. In addition, Glassdoor has many policies to ensure review quality, such as the give-to-get policy, which requires each Glassdoor user to contribute to the site before accessing its full content. This policy motivates more people to write reviews, making Glassdoor reviews less prone to typical selection concerns with online reviews (Marinescu et al. (2021)). Consequently, my findings are robust to different selection concerns, as discussed in Section 5. Moreover, each Glassdoor review has two open-ended sections in which an employee describes the pros and the cons of working at a firm. This feature allows me to capture an inside view of a firm’s ESG practices by how often its employees mention ESG topics in the pros relative to the cons sections. This approach is novel because it naturally differentiates positive and negative views of ESG practices, unlike other studies using a dictionary approach, such as Li et al. (2020), which counts words related to corporate culture in earnings calls without considering their contextual polarity.

The key challenge is to form comprehensive dictionaries for ESG topics that are specific to employee reviews. To tackle this challenge, I first create a seed word list for each ESG category by retaining the most frequently used words (and phrases) about E, S, and G issues in ESG rating methodologies and academic articles. Next, I train a machine learning model to learn the meaning of all words in 10.4 million employee reviews. The model’s output allows me to extend my seed word list to the 500 most similar words in each ESG category, as in Li et al. (2020). This procedure brings my final dictionaries closer to the vocabulary employees often use to describe ESG topics. For example, it adds many meaningful ESG words, such as *biofuel* and *fertilizer* to the E category, *advocacy* and *social justice* to the S category, and *malfeasance* and *embezzlement* to the G category. My approach also allows me to study each of the ESG categories separately.

Employee reviews are likely informative about a firm’s ESG practices because the dictionaries indicate that a large fraction of employees pay attention to ESG topics. On average, 43% of reviews mention at least one ESG word. In addition, employees demonstrate attentiveness to ESG events,

as their reviews exhibit a higher frequency of ESG words during notable events like the Paris Agreement, the COVID crisis, and social unrest within the US.

The employees' inside view appears reliable in many other aspects. First, the distribution of the inside view measure on each ESG category is bell-shaped, consistent with Glassdoor having few extreme reviews. Second, very few (under 0.2%) of all reviews exhibit an all-positive or all-negative view across the ESG categories, indicating that the reviews suffer little from the halo effect, i.e., the tendency for a reviewer's judgement of one category to influence judgement of another category (Thorndike (1920)). Third, consistent with the hypothesis that a firm's internal ESG practices are persistent, I find that the lagged ESG inside view significantly predicts itself. Finally, among the largest 500 companies by total assets during 2014-2018, a ranking of ESG practices based on the inside view appears sensible (see Table 3). For example, a renewable energy firm was ranked first on E practices, while a large oil and gas company was ranked last.

Next, I examine the correlation between the inside view and existing ESG ratings. The inside view might capture information that the ESG ratings do not, making its correlation with the existing ratings low. Even within the most widely used ESG ratings, which take similar information sources as input (Chatterji et al. (2016), Christensen, Serafeim, and Sikochi (2021)), the correlation among the ratings ranges from -0.01 to 0.81 on different ESG categories (see Table 2 in Berg, Koelbel, and Rigobon (2019)). Thus, not surprisingly, I find that the rank correlation between the inside view and the MSCI rating is 0.00, 0.14, and 0.08 for the E, S, and G categories, respectively. The inside view's correlation with the ESG rating from Refinitiv is even lower.

The low correlation between the inside view and the existing ESG ratings raises the question of how informative the inside view is about ESG practices relative to the existing ESG ratings. To investigate this issue, I examine whether the inside view is associated with future indicators of ESG performance across firms. As a benchmark, I compare the predictive power of the inside view to that of the MSCI (KLD) ESG rating, instead of the Refinitiv rating due to its frequent alterations of historical data (Berg, Fabisik, and Sautner (2021)). Theoretically, whether the inside view predicts ESG performance could be different for each of the ESG categories.

For example, employees might consider environmental (E) issues less important to them or to a firm's operations. Moreover, data on firms' environmental violations and emissions are publicly available, so existing E ratings may predict these indicators better than the inside view. I find that to be the case for indicators related to environmental violations. For carbon emissions, the inside view on E practices has some marginally significant predictive power beyond the MSCI E rating.

For social (S) issues, the employees' inside view could provide significantly more information. First, employees represent a key stakeholder whose satisfaction directly affects a firm's social performance. Second, greenwashing incentives are less likely to affect anonymous employee reviews than the MSCI ratings. Thus, for social performance, the inside view is likely to add information beyond the MSCI S rating. I find that to be the case when using the S inside view to predict a firm's likelihood of joining Fortune's Best 100 Companies to Work For, one, two, or even three years ahead. Because joining the Fortune list has been shown to predict improvement in a firm's long-term performance (Edmans (2011)), I hypothesize and verify that a higher S inside view predicts a higher firm-level valuation, as measured by Tobin's Q, many years ahead. The inside view also predicts a firm's number of social violations, such as violations on workplace safety, and the associated dollar penalties. It remains a significant predictor of these S performance indicators after controlling for the MSCI S rating and the lagged S performance.

Similarly, for governance, the employees' inside view could predict future outcomes better than the MSCI governance rating. A firm's employees often observe its internal governance attributes, such as business ethics and internal communication, while outside raters like MSCI do not. In addition, employees likely consider governance important to them because good governance attributes, such as transparency and leadership, allow them to streamline their daily work. Thus, positive reviews about a firm's governance likely predict future indicators of good governance. I confirm this hypothesis in my sample. Unlike the MSCI governance rating, a higher inside view on governance predicts many years ahead a lower likelihood of internal control weaknesses, fewer lawsuits related to accounting malpractice, fewer shareholder activism events, and a higher likelihood of a firm entering Fortune's Best 100 Companies, even after controlling for these outcomes' lagged values. A higher inside view is also significantly associated with a

firm's higher future performance, as captured by sales growth and valuation (Tobin's Q). The performance result is unlikely due to reverse causality because it holds when I instrument the inside view by its past values up to a five-year lag. The result holds when I control for the halo effect as in Guiso, Sapienza, and Zingales (2015) along with industry-year fixed effects, suggesting that omitted factors related to industry trends and the halo effect are unlikely to explain the results.

Given the informativeness of the ESG inside view measures, I use them to study whether a firm's employees view its ESG practices to be consistent with its stated policies. If a firm's ESG policies have real effects on the firm's practices, then a firm with better ESG policies likely has a better inside view. However, this might not be the case if the firm establishes its ESG policies mostly to greenwash its public image. Using the number of ESG-related strengths from the MSCI KLD database to capture a firm's ESG policies, I find evidence consistent with the latter hypothesis. The association between a firm's ESG policies and its future inside view is statistically significant only for the S category and is economically negligible for all the ESG categories. These results hold after controlling for firm and year fixed effects, firm characteristics, and past ESG controversies. I provide evidence suggesting that these results are unlikely to be driven by potential measurement concerns with the inside view (see Section 5).

Instead, a likely reason for the low correlation between a firm's stated ESG policies and its inside view is that the firm often faces little cost in instituting ESG policies, i.e., low cost of greenwashing. To investigate this issue, I study two settings in which a firm shows a broad commitment to ESG policies, one without and another with a reputational cost of not following through with the commitment. The first setting is when firms signed the Business Roundtable (BRT)'s statement in 2019 committing to serving all stakeholders rather than just shareholders. These firms did not seek the approval of their shareholders or board of directors to sign the statement, so the BRT commitment was likely cheap talk (Bebchuk and Tallarita (2020)). The other setting is when firms join the UN Global Compact (UNGC), the world's largest corporate sustainability initiative. Unlike the BRT commitment, the UNGC commitment requires board approval and carries a likely large cost because firms must report annual progress or else get publicly expelled. Historically, the UNGC has expelled over 40% of its participants as of 2020.

As expected, the inside view indicates that the BRT commitment is less credible than the UNGC commitment. Signing the BRT statement is not significantly associated with a larger improvement in the inside view of ESG practices. Moreover, before signing the BRT statement, BRT firms do not have a significantly better inside view. Even among firms with a prior low E, S, or G inside view, and thus more room for improvement, signing the BRT statement is associated with no significant improvement in the E inside view and even a modest decline in the S and G inside views. By contrast, the inside view on the S and G categories significantly improves three years after a firm joins the UNGC, relative to control firms. These results hold when I control for firm characteristics directly or via propensity score matching. Overall, the high cost of an ESG commitment appears to make it more likely for a firm to follow through with the commitment, consistent with the costly signaling literature (Spence (1973)).

Finally, I test whether the inside view captures likely improvements in a firm's ESG practices when poor internal ESG practices become more costly. I do so by examining a court ruling in 2013 that exogenously raises the cost of poor corporate practices on an important ESG issue: workplace harassment. Before 2013, employers in the US could be held liable for workplace harassment when the harasser had a supervisory role over the victim. In 2013, however, the 7<sup>th</sup> Circuit Court, which set precedents for legal cases in Illinois, Indiana, and Wisconsin, unexpectedly ruled against an employer for racial and sexual harassment even when the harasser was merely a co-worker, not a supervisor, of the victim. The court ruling essentially raised the risk of harassment lawsuits and thus the incentive to improve social (S) practices for firms located in those three states (treated firms) relative to other US firms (control firms). Indeed, the S inside view increased significantly after the ruling for the treated relative to control firms. By contrast, the inside view showed no improvement on the E category, and even a decline on the G category, perhaps due to the organizational costs of changing workplace culture. Overall, firms appear to walk the ESG talk only when failing to do so is costly.

The court ruling setting also allows me to study how changes in a firm's ESG practices affect its valuation. In earlier tests, I show that both the S and G inside views are positively associated with a firm's future valuation (Tobin's Q). However, because the court ruling improved the treated

firms' S inside view but degraded their G inside view, whether the firms' valuation improved after the ruling depended on whether S practices matter more for valuation than G practices. I find that after the ruling the treated firms had significant declines in valuation (Tobin's Q), despite insignificant changes in short-term profitability and sales growth, relative to the control firms. Parallel trend graphs suggest no pre-trends in these outcomes before the court ruling. These results suggest that governance practices may matter more for firm value than social practices, consistent with the governance inside view's stronger association with firm value in the earlier tests.

This paper contributes to several literatures. First, it adds to the growing literature on corporate sustainability and ESG investing (Gillan, Koch, and Starks (2021)). Matos (2020), among others, illustrates the massive growth in ESG investing, necessitating a better understanding of firms' ESG practices. Grewal and Serafeim (2020), however, emphasize that measuring firms' ESG performance is the least developed area of research. My paper addresses this issue directly. It shows that employees have information about a firm's ESG practices beyond existing ESG ratings and such information is robust to corporate greenwashing. These insights are important for investors who wish to navigate ESG investing, rating agencies who wish to improve their ESG rating methodologies, and regulators and academics who wish to evaluate corporate greenwashing.

Second, the paper contributes to the literature on the informativeness of employee reviews. Using survey data from the Great Place to Work Institute, prior studies show that employee reviews are informative about future accounting and stock return performances (Edmans (2011), Guiso, Sapienza, and Zingales (2015), Gartenberg, Prat, and Serafeim (2018)). In the context of online reviews, Green et al. (2019), Sheng (2019), and Welch and Yoon (2020) show that Glassdoor reviews predict firms' future performance as well. While these prior studies show that employee reviews are informative about firms' financial performance, this paper shows that employee reviews are informative about firms' non-financial performance, namely ESG practices, with varying degrees of informativeness depending on the ESG category.

Third, this paper contributes to the literature on corporate cheap talk. Guiso, Sapienza, and Zingales (2015) show that the values that firms publicly advertise are not correlated with firms' financial performance. More closely related to greenwashing, Raghunandan and Rajgopal (2020)



show that firms that signed the Business Roundtable statement (BRT firms) had committed more E&S violations than other firms, while Bebchuk and Tallarita (2022) and Bebchuk, Kastiel, and Tallarita (2023) argue that the BRT firms and corporations in general have done little in stakeholders' interests. Li and Wu (2020) show that public firms that join the UN Global Compact do not see declines in their negative ESG incidents. While these studies rely on publicly disclosed information to assess firms' ESG practices, my paper relies on employee reviews, which are less influenced by greenwashing. By focusing on what employees say about a firm's ESG practices, my approach also differs from simply including employee satisfaction as an indicator of a firm's ESG performance, as in Chava, Du, and Malakar (2021) and Heath et al. (2023). The Internet Appendix IA1 provides further literature review and elaborates the paper's central hypotheses.

The paper proceeds as follows. Section 2 describes how I measure the ESG inside view and describes its basic properties. Section 3 studies whether the inside view predicts future ESG-related outcomes. Section 4 tests whether firms walk the ESG talk in various settings. Section 5 discusses robustness checks, and Section 6 concludes.

## **2. Data, measurements, and descriptive statistics**

### *2.1. Data*

I obtain employee reviews from Glassdoor.com, a career intelligence website. Glassdoor was launched in 2008, aiming to collect anonymous reviews from employees about employers. Glassdoor quickly became so popular that it started to provide job search services as well and became the number 2 job search site by user base in 2017. Glassdoor employs many mechanisms to control the quality of reviews and claims to review every contribution by its users.

I collect 10.4 million Glassdoor reviews for over 300,000 employers as of May 2021. A typical Glassdoor review contains a review title, date written, employee title, employee status (former vs. current), city and state of location, years in the company, numerical ratings for overall, work-life balance, culture, compensation, and management, and text fields containing the pros and the cons of working at the company. The Internet Appendix IA4 shows an example.

To capture the outside view of a firm's ESG practices, I collect the MSCI (KLD) ESG ratings, which have been used extensively in the ESG literature. MSCI employs over 100 analysts to annually rate companies on ESG issues. For each issue, the analysts record a positive indicator of whether a company has a strength on that issue. Similarly, the analysts record a negative indicator for each issue if a company has a weakness on that issue. I take the number of strengths relative to weaknesses within each ESG category as my main MSCI ESG ratings (Gao, He, and Wu (2021)).

I also collect firms' violations with regulatory agencies from the Corporate Research Project of Good Jobs First's Violation Tracker. The database covers over 400,000 violation records between 2000 and 2020, totaling over \$600 billion in penalties. It sorts violations into nine groups: environment, consumer protection, employment, healthcare, competition, financial, government contracting, miscellaneous, and safety-related offenses. The first group captures environmental (E) violations. The next four groups capture social (S) violations. For the safety-related group, I deem violations with the Nuclear Regulatory Commission, the Food and Drug Administration, and the Energy Department as E violations, and other safety-related offenses as S violations.

Finally, I collect firms' internal control weaknesses and accounting malpractice lawsuits from Audit Analytics, stock returns from CRSP, accounting data from Compustat, mergers from SDC Platinum, institutional ownership from WRDS Thomson Reuters Stock Ownership, COVID exposure from Koren and Peto (2020), and the list of cyber-attacks from Kamiya et al. (2021).

To construct my sample, I start with 7,851 US companies having 100 or more Glassdoor reviews as of July 2020. I match these firms to Compustat data during 2008-2020 using stock tickers and company names to arrive at my main sample of 1,936 public firms. My sample is larger than those in other studies using Glassdoor data, such as Green et al. (2019) with 1,238 firms.<sup>1</sup> My sample's industry composition (Internet Appendix Table IA1) appears similar to that of similarly sized Compustat firms in the same period, except that my sample has more business services and retail firms and fewer banking and pharmaceutical firms, similar to Green et al. (2019).

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<sup>1</sup> Green et al. (2019) uses a cutoff of minimum 15 reviews per quarter for their sample. When I use a similar cutoff, my sample still has above 1,600 firms, likely because firms tend to have more reviews as Glassdoor user base grows.

I then merge my sample with the MSCI ESG ratings and the Violation Tracker data, as detailed in the Internet Appendix IA2. Before merging, I aggregate the number of violations and the penalty amount on environmental and social violations to the parent firm-year level. I impute the number of violations and the penalty amount for those missing from Violation Tracker to be zero.

The final sample is a panel of 27,104 firm-years between 2008, Glassdoor inception year, and 2021, with 12,360 non-missing observations for the MSCI ESG ratings and 22,186 non-missing observations for the Glassdoor reviews data. This sample covers 2,444,040 Glassdoor reviews in total. Table 1 shows the summary statistics for the main variables.

## *2.2. Measuring an inside view of ESG practices*

To measure employees' inside view of ESG practices, I identify the words that employees often use to describe ESG issues. First, I construct seed word lists for E, S, and G topics based on how academics and industry experts view these topics. Next, to ensure that my final dictionaries of ESG words are comprehensive and specific to the language of employee reviews, I employ a word-embedding technique to identify from the universe of employee reviews the words that are most similar to my seed words. Once I have the comprehensive dictionaries of ESG words, I capture the employees' inside view of ESG practices by how often the employees mention these words in their reviews' pros relative to cons sections. The following subsections describe these steps in detail.

### *2.2.1. Preparing the seed word lists for ESG topics.*

To prepare the seed word lists for ESG topics, I first collect clearly defined lists of E, S, and G issues from various sources. From industry experts, I rely on ESG rating agencies, whose methodology documents often include a list of issues for each ESG category. I focus on the five major rating agencies studied in Berg, Koelbel, and Rigobon (2019), namely MSCI, Refinitiv, RobecoSAM, Sustainalytics, and Vigeo-Eiris. I then add RepRisk for its aggregation of negative ESG news and CSRHub for its attempt to synthesize ESG issues from many rating agencies. Less well-known agencies rarely publicize their proprietary rating methodology. From academic experts, I find few papers that clearly specify lists of E, S, or G issues, except Bessec and Fouquau

(2021) with a list of E issues from dictionaries like the EPA’s glossary and Baier, Berninger, and Kiesel (2020) with 300 ESG words collected from the annual reports of America’s 25 biggest firms. Overall, I obtain 37 lists of ESG issues, as shown in the Internet Appendix Table IA2.

Next, I identify the words (and phrases) that appear most often across the lists of issues for each ESG category. I rank each word by its relative frequency, which is how often it appears in one category relative to others. Then, I find the top 25 words and the top 25 two-word phrases with the highest average relative frequency for each ESG category that also appear in employee reviews. This forms a list of 50 words that industry experts and academic papers often use to describe each ESG category (see the Internet Appendix Table IA2 Panel B).<sup>2</sup>

### 2.2.2. *Extending the ESG word lists using machine learning*

To make my ESG word lists comprehensive and specific to the language of employee reviews, I follow Hanley and Hoberg (2019) and Li et al. (2020) to find the words that share similar meanings to my ESG seed words, by training *word2vec* (Mikolov et al. (2013)), a word-embedding model, on 10.4 million employee reviews. *Word2vec* is a two-layered neural network that takes a word as input and returns a predicted distribution of neighboring words. The middle layer of this network thus retains the model’s knowledge of what words often surround the input word in a review. Naturally, *word2vec* uses the middle layer as the vector representing the input word. I follow Li et al. (2020) to clean text data and train my *word2vec* model (detailed in the Internet Appendix IA5).

After training the *word2vec* model, I use it to refine my seed word lists. First, I calculate the average of the vectors representing the seed words in each ESG category to represent that category. This allows me to remove noisy seed words for any ESG category by removing words outside of the most similar words for that category.<sup>3</sup> In addition, I consider diversity issues as an S issue and

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<sup>2</sup> I use a cutoff of 25 because beyond that, the relative frequency of many words starts to become the same, so ranking them becomes impossible. I adjust the raw frequency of each word by the tf.idf convention in textual analysis.

<sup>3</sup> In particular, I remove words outside of the 1000 words with the highest cosine similarity with the category’s average vector. Changing the cutoff from 1000 to 500 does not change the final seed word lists substantially. The final dictionary containing all ESG key words produced by the two cutoffs overlaps by 93.1%.

thus remove diversity-related words from the G seed word list. I further remove four noisy words to arrive at the final seed word lists shown in Table 2 Panel A.<sup>4</sup> The refined seed word lists include meaningful ESG words, such as *biodiversity* and *carbon footprint* for E topics, *community* and *age discrimination* for S topics, and *corruption* and *day-to-day operation* for G topics.

After refining my seed word lists, I obtain the full dictionary on each ESG category by finding the 500 words with the highest similarity to the average vector representing that category, following Li et al. (2020). When a word appears in multiple categories, I keep it only in the category to which it is most similar, as in Li et al. (2020), so the final ESG dictionaries have only 1,382 unique words in total. Table 2 Panel B shows that these steps add meaningful words, such as *biofuel* and *fertilizer* on E topics, *advocacy* and *social justice* on S topics, and *malfeasance* and *embezzlement* on G topics. The Internet Appendix Table IA3 includes the full ESG dictionaries.

For robustness, the semi-final panel in the Internet Appendix Table IA3 shows how the final dictionary would look like with different cutoffs for the dictionary's size. It shows that even when each dictionary extends to 1000 words, most, if not all, of the added words have meanings that are tightly related to ESG topics, such as *pollute* and *hazardous* for the E category, *donation-charity* and *watchdog* for the S category, and *inner working* and *nonperformance* for the G category.

This step of extending the ESG word lists is important. Without it, I find in un-tabulated analyses that my resulting ESG inside view measures become less informative about future ESG-related outcomes, such as whether a firm lands in Fortune's Best 100 Companies to Work For.

### 2.2.3. Scoring firms by counting ESG words

After generating the full dictionaries of ESG words, I measure the inside view at the review level by the percentage of ESG words in the pros section relative to the cons section of each review. Averaging this measure across reviews in a firm-year creates my main measure of the inside view. I winsorize the measure at the 1 and 99 percentiles to reduce the effect of outliers.

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<sup>4</sup> Specifically, I remove *supply chain* from the E category because even when I include this phrase in the seed word list, the resulting extended dictionary (500 words) does not include it. I also remove *fundamental* from the S category, and *financial institution* and *government agency* from the G category.

My approach in measuring the inside view of ESG practices is novel. First, it distinguishes between positive and negative views of ESG practices. Previous studies, by contrast, do not. For example, Li et al. (2020) count words on culture topics in a firm's earnings calls to measure corporate culture, regardless of whether these words are mentioned in a positive or negative context. Second, my approach exploits Glassdoor's unique feature that each review contains a pros section and a cons section. With this feature, there is no need to use supervised machine learning or sentiment analysis to identify positive and negative discussions of ESG topics. Thus, my measure likely suffers less from the classification errors that often affect textual analysis.

In addition to measuring the inside view, I also measure the *inside view dispersion*, which is the standard deviation of the inside view at the review level across all the reviews in a firm-year. This measure captures how much the inside view varies across different employees' viewpoints in a firm-year. I calculate all the measures in this section for each ESG category separately.

### *2.3. How does the inside view look like?*

In this section, I examine descriptive statistics of the employees' inside view to see whether it appears useful in capturing a firm's ESG practices. First, the inside view can only be useful if employees pay significant attention to ESG issues. I therefore examine how much attention employees pay to ESG issues. Second, I examine the firms with the highest and lowest inside view to see whether ranking firms based on the inside view appears sensible. Third, I compare the inside view with two major ESG ratings. While both the inside view and the existing ratings might correlate little at the firm level, they are likely to agree about the aggregate trends in corporate ESG practices if both contain significant information about firms' ESG activities.

#### *2.3.1. Employees' attention to ESG issues*

I find that employees pay substantial attention to ESG issues, but more so on S and G topics than on E topics. Table 1 Panel B shows that 43% of reviews mention at least a word from the ESG dictionaries developed in Section 3.2. Specifically, 28% of reviews mention at least a word on the G category and 22% of reviews mention at least a word on the S category while 2% of reviews

mention some E key word. Even with the smaller list of ESG words using a 250-word cutoff per ESG category, over 34% of reviews mention some ESG word.

Moreover, while the frequency of ESG catchphrases like *ESG*, *CSR*, and *sustainability* in reviews has increased substantially between 2008 and 2021, the employees' attention to a broader set of ESG topics, as measured by the frequency of words from my comprehensive ESG dictionaries, has remained stable over time, suggesting that the employees have cared about ESG issues throughout the sample period. The employees' attention, nonetheless, spiked around major ESG-related events, such as the Paris Agreement, the COVID Crisis, and the death of George Floyd. The Internet Appendix IA6 provides further detail on employees' aggregate attention to ESG issues over time.

### *2.3.2. Top and bottom firms by the inside view*

In this section, I examine the firms with the highest and lowest inside view on each ESG category. Table 3 Panel A shows the top 5 firms and bottom 5 firms based on their average inside view between 2014 and 2018 for each ESG category, among the largest 500 firms by average total assets. Table 3 Panel B shows excerpts from two actual reviews of the top and bottom firms.

Based on the inside view, SunEdison Inc., a leading solar energy firm, ranked top on the E category, while Pioneer Natural Resources, a coal producer, ranked bottom. Select reviews from SunEdison indicate that the firm was growing fast in the solar energy sector with excellent energy storage technology while expanding into wind energy. Even an employee who rated SunEdison one star overall acknowledged the firm's potential to address global energy shortage. Select reviews from Pioneer Natural Resources, by contrast, highlighted the firm's poor management of oil fields and its "shifting focus to horizontal drilling", which is known to have a worse environmental impact than vertical drilling. Another employee states that Pioneer could "do more core analysis and research" before oil and gas exploitation.

Based on the employees' inside view of S practices, Umpqua Bank, a large community bank, ranked top, while Pepco Holdings, one of the largest electric utility companies in the US, ranked bottom. Select reviews from Umpqua Bank indicated that the bank "listened to employees" and

promoted “community involvement.” In particular, several employees praised the bank for providing 40 hours of paid volunteering in local communities annually. Employees from Pepco Holdings, however, complained about the lack of gender equality and poor work-life balance with “too many hours required to be worked.”

As for governance, LinkedIn, the company behind the world’s largest professional network, ranked first, while Sterling Bancorp ranked last. Select reviews from LinkedIn indicated that the firm had “outstanding leadership” and “culture and values” that were “felt throughout the organizations.” Reviews from Sterling Bancorp, by contrast, indicated that the firm was “very disorganized” and had “too much pressure for sales”, creating a toxic culture.

### *2.3.3. Comparing with existing ESG ratings*

In this section, I compare the inside view of ESG practices with the existing ESG ratings by two major rating providers: MSCI (formerly KLD) and Refinitiv. First, I assess whether on aggregate the inside view and the existing ESG ratings agree that corporate ESG practices have improved over time. Second, I examine their correlations at the firm-year level.

Theoretically, it is unclear if both the inside view and the existing ESG ratings would indicate that corporate ESG practices on aggregate have improved over time. The recent pressure for better ESG practices likely incentivizes firms to improve ESG ratings, but if all such improvements are greenwashing, then the inside view will indicate no improvement in ESG practices. However, if some proportion of firms genuinely improve their ESG practices, there could be an improvement in the average firm’s ESG inside view and thus some agreement with the existing ESG ratings.

Figure 1 confirms the latter hypothesis. It shows that the inside view of ESG practices in an average firm has improved between 2008 and 2021. This trend in the inside view agrees with the overall increasing trend in the average firm’s MSCI ESG rating. Breaking down into each ESG category, the figure indicates that the overall improvement in both the MSCI rating and the inside view comes from the S and G categories, but not the E category. The MSCI rating shows no improvement for the average firm’s E practices while the corresponding inside view shows a decline. The overall improvement is unlikely because my ESG dictionaries fail to capture



vocabulary specific to complaints on ESG issues. Training my algorithm on only the cons section of reviews changes my ESG dictionaries little, with an overlap of 90.4% with the baseline dictionaries. The results are similar when I replace the MSCI ratings by the Refinitiv ratings.<sup>5</sup>

As for the correlation between the inside view and the ESG ratings, Table 1 Panel C shows that it is low. The rank (Spearman) correlation between the inside view and the MSCI rating is 0.00, 0.14, and 0.08 for the E, S, and G categories, respectively. The correlation is not much higher in different industries either. The results are similar for the correlation between the inside view and the ESG rating from Refinitiv. The low correlation is perhaps unsurprising, given that the correlations among the existing ESG ratings are often low (Berg, Koelbel, and Rigobon (2019)). Overall, while the inside view and the existing ESG ratings are weakly correlated at the firm level, they generally agree at the aggregate level that corporate ESG practices have improved over time.

### **3. Is the inside view informative about future ESG-related outcomes?**

In this section, I examine how informative the inside view is in predicting future ESG performance indicators across firms. I regress each ESG performance indicator at year  $t+1$ ,  $t+2$ , or  $t+3$  on the inside view and the MSCI rating of the same ESG category at year  $t$ , the ESG performance indicator at year  $t$ , with control variables, also at year  $t$ , including firm size, profitability, leverage, sales growth, Tobin's  $Q$ , institutional ownership, Fama-French 48 industry fixed effects, and year fixed effects.<sup>6</sup>

#### *3.1. Predicting environmental performance indicators*

I consider various environmental (E) performance indicators from two main sources. From the Violation Tracker database, I consider two E performance indicators: an indicator of whether a

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<sup>5</sup> The Refinitiv ratings also indicate an overall improving trend in S and G practices but a declining trend in E practices from 2008 to 2019 (not shown to save space). In 2020, however, the Refinitiv ratings declined sharply in all of the ESG categories, likely because Refinitiv changed its rating methodology in 2020 (Berg, Fabisik, and Sautner (2021)).

<sup>6</sup> Because an existing literature suggests that ESG practices could act as a risk mitigation tool (e.g., Hoepner et al. (2020)), I also test and confirm that a better ESG inside view predicts a firm's lower downside risk in the future. The Internet Appendix IA7 provides further discussion.

firm has an E violation in a year, and the ratio of E violation penalties to sales. From Refinitiv's Asset4 database, I collect firms' carbon emissions to construct two indicators:  $\log(\text{emissions})$  and emissions relative to sales.

For these E performance indicators, employees' inside view may provide limited information. Employees might not consider E issues relevant to themselves, or to their employers' industry. Also, emission and violation data are publicly available so MSCI raters could easily incorporate these data into their ratings. Table 4 confirms this conjecture. It shows that a higher MSCI E rating predicts a lower likelihood of E violations (Panel A) and a lower amount of E penalty relative to sales (un-tabulated, to save space), while a higher E inside view does not. However, the E inside view does have some marginally significant power in predicting the logarithm of emissions beyond the MSCI E rating. In un-tabulated results, neither the inside view nor the MSCI rating significantly predicts emissions over sales.

### *3.2. Predicting social performance indicators*

I consider social (S) performance indicators from two sources. First, from Violation Tracker, I construct an indicator of whether a firm has an S violation in a year, and calculate the dollar amount of S violation penalties relative to the firm's sales. Second, from Alex Edmans' website, I construct an indicator of whether a firm is in the list of Fortune's Best 100 Companies to Work For in a year (Edmans (2012)). Two-thirds of the criteria underlying this list are based on surveying employees.

Employees represent a key stakeholder for social (S) issues, so their view of S practices should predict future S performance indicators. I find that to be the case. Table 5 Panel A column (1) indicates that a more positive S inside view in year  $t$  predicts a higher likelihood of a firm entering the Fortune list in year  $t+1$ . Column (2) indicates that after controlling for the MSCI S rating, the inside view remains a statistically significant predictor at the 1% level. These findings hold for the prediction over two and three years ahead (columns 4, 5, 7, and 8). Even after controlling for a firm's past indicator of being in the Fortune list, the inside view's predictive power over two or three years ahead is still statistically significant at the 5% or 10% level (columns 6 and 9).

Table 5 Panel B shows that a higher S inside view predicts a lower amount of social violation penalties relative to sales in one year ahead. The coefficient on the inside view is statistically significant at the 1% level and remains so even after controlling for the MSCI social rating and the lagged amount of social violation penalty relative to sales (columns 1 to 3). By contrast, the coefficient on the MSCI social rating is not statistically significant in any column. In un-tabulated tests, a higher S inside view also predicts a lower likelihood of and a lower number of social violations in the future, with the most statistical significance beyond the MSCI S rating (at the 1% level) for the number of social violations in the longer horizons.

Because a higher S inside view predicts a higher likelihood of a firm joining the Fortune's Best Company list, which Edmans (2011) shows to predict a firm's long-term performance, a higher S inside view could predict a higher firm value as well. Panel C shows that to be the case: a higher S inside view predicts a higher Tobin's Q in one, two, and three years ahead, with statistical significance beyond the MSCI S rating for all the horizons, and significance (at the 5% level in column (3)) beyond even the lagged Tobin's Q for the one-year horizon.

### *3.3. Predicting governance quality indicators*

I consider two sets of governance (G) quality indicators. The first set includes negative G indicators from Audit analytics, namely the number of class-action lawsuits about accounting malpractice, an indicator of an internal control weakness, and the number of Forms 13D filed by activist shareholders. Lawsuits regarding accounting malpractice are a manifestation of poor governance (Hoitash and Mkrtchyan (2021)). These lawsuits are often initiated by a firm's shareholders, so they are beyond the firm's control and thus likely an objective indicator. As for internal control weaknesses, the Sarbanes–Oxley Act of 2002 requires that a firm's management and its auditor report its internal control weaknesses over financial reporting. The external validation from an auditor makes the reported internal control weaknesses a reliable indicator of poor governance. About the number of Forms 13D, a shareholder activist is required to file such a form when she acquires over 5% ownership of a firm with an intent to alter the firm's policies. So, many Forms 13D mean that a firm's key shareholders want its policies to change, a sign of poor governance.

The second set of indicators are positive G indicators, including an indicator of whether a firm enters the Fortune's Best 100 Companies list, sales growth, and Tobin's Q. The Fortune list likely reflects good governance because one third of its criteria are about governance. Tobin's Q, a common valuation ratio, and sales growth are important firm performance metrics. All else equal, a well governed firm should have a better performance than a poorly governed firm. Prior research has shown that Tobin's Q increases with governance theoretically (e.g., Jensen and Meckling (1976)) and empirically (e.g., Gompers, Ishii, and Metrick (2003), and Aggarwal et al. (2009)).<sup>7</sup>

The employees' inside view of governance should predict future governance indicators well because the employees observe internal governance attributes frequently and closely. Consequently, the inside view could predict governance indicators better than the MSCI governance rating, an outside assessment of a firm's governance. Table 6 confirms this hypothesis.

Table 6 Panels A, B, and C show that the governance (G) inside view is negatively associated with the indicators of poor governance in the future. Panel A indicates that a standard deviation higher inside view is associated with around 16% to 18% lower likelihood of a firm having an internal control weakness in up to three years ahead (columns 1, 4, and 7).<sup>8</sup> These estimates are statistically significant at the 1% level, and remain statistically significant at the 10% level after controlling for the MSCI G rating and the indicator of past internal control weaknesses, except for the three-year-ahead prediction (columns 3, 6, and 9). The MSCI G rating, by contrast, does not significantly predict a firm's future internal control weaknesses. These results hold similarly in predicting a firm's number of internal control weaknesses in a Poisson regression (un-tabulated).

Panel B shows that a higher G inside view predicts a lower number of accounting malpractice lawsuits one year ahead (column 1). The predictive power remains unchanged after controlling for

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<sup>7</sup> I do not test whether the inside view predicts stock returns because theories indicate no clear interpretation for such tests. Pástor, Stambaugh, and Taylor (2020) argue that ESG-friendly firms should earn lower expected returns in the long-run, but may have higher realized returns when investors' preference for ESG stocks increases. Thus, finding that the inside view predicts a lower or higher stock return does not validate the measure. Nonetheless, in un-tabulated tests, I find that a higher G inside view predicts a higher return up to three years ahead while the MSCI ratings do not.

<sup>8</sup> More precisely, the *likelihood* here refers to the logarithm of the odds ratio, which is the probability of the event (having an internal control weakness) divided by the probability of the non-event (having no internal control weaknesses). Hereafter, I use a similar language when discussing other logit regression coefficients.

the MSCI G rating (column 2), and remains significant with a slightly higher economic magnitude after controlling for the lagged dependent variable (column 3). Panel C shows that a higher G inside view predicts a lower number of activists filing Forms 13D. The predictive power is most significant over the two or three years ahead (columns 4 to 9). It remains significant at the 5% level after controlling for the MSCI G rating and the lagged dependent variable (columns 6 and 9). The MSCI rating, by contrast, has insignificant predictive power. The results are similar in predicting whether a firm has at least one activist filing in a year.

Table 6 Panels D, E, and F show that the G inside view also predicts positive governance quality indicators. Panel D shows that the G inside view predicts a firm's likelihood of being in the Fortune list well. The coefficient on the G inside view is large, positive, and statistically significant at the 1% or 5% level regardless of the prediction horizon and whether I control for the MSCI G rating and the lagged indicator of the Fortune list. The coefficient grows larger and more statistically significant over a longer horizon, suggesting that the G inside view captures long-lasting information on a firm's likelihood of entering the Fortune list. The MSCI rating's predictive power, by contrast, becomes less robust over a longer horizon. In un-tabulated tests, the G inside view remains a significant predictor of the Fortune list even after controlling for the S inside view.

Panel E shows that a one standard deviation higher G inside view is associated with a 5% standard deviation higher sales growth, an estimate statistically significant at the 1% level. The coefficient on the inside view remains significant at the 1% or 5% level after controlling for the MSCI G rating *and* the lagged sales growth, up to two years ahead (columns 3 and 6). By contrast, the MSCI G rating does not predict future sales growth at any horizon (columns 2, 5, and 8).

Finally, Panel F shows that a one standard deviation higher G inside view is associated with a 11% standard deviation higher Tobin's Q (column 1), an estimate significant at the 1% level. This result holds for predicting Tobin's Q two or three years ahead too (columns 4 and 7). A higher MSCI G rating, by contrast, does not predict a higher Tobin's Q (columns 2, 5, and 8), suggesting that the inside view captures this dimension of governance quality better than the MSCI rating.

The inside view's ability to predict future performance outcomes like Tobin's Q and sales growth is unlikely to be explained by common endogeneity concerns. One concern is reverse

causality: when a firm is expecting to do well financially in the future, it might start to invest more in ESG practices, leading employees to have a better inside view right away. This concern is unlikely, because the inside view still predicts future Tobin's Q and sales growth after I instrument the inside view by its past values up to a 5-year lag, an approach similarly used in Gu, Hackbarth, and Li (2021), while controlling for current performance metrics like growth and ROA (Panel G).

Another concern is about omitted factors. One such factor is the halo effect, the tendency for a reviewer's overall sentiment of the firm, which is likely correlated with the firm's future performance, to affect his judgement across all the rating categories, including his inside view of the firm's governance. Guiso, Sapienza, and Zingales (2015) argue that if the halo effect is present, it should affect all the rating categories and thus, one can control for the halo effect by controlling for one of the rating categories, especially the one with a low correlation with the variable of interest to avoid removing relevant variation from it. In my sample, employees' rating of compensation on Glassdoor has the lowest correlation with the inside view measure, so I use that rating as my control for the halo effect. Other omitted factors could be industry trends, such as the recent outperformance of ESG-related industries, leading to both a higher valuation for firms in these industries and positive reviews about ESG practices in these firms. Nonetheless, Panel G columns (2), (4), (6), and (8) show that the governance inside view still predicts future Tobin's Q and sales growth after controlling for industry-year fixed effects and the halo effect.

Overall, the inside view robustly predicts indicators of governance practices, incrementally to past indicators of governance practices and better than the MSCI governance rating in most cases.

#### **4. Do firms walk the talk about ESG practices?**

In this section, I evaluate whether a firm's employees view its ESG practices to be consistent with its stated policies or commitment on ESG issues. First, I examine whether more ESG policies are associated with a better inside view. Then, I study two settings in which firms show a broad commitment to ESG policies, one without and another with a likely high cost of commitment. Finally, I study whether employees view a firm's ESG practices to improve after poor internal ESG practices become more costly due to an exogenous shock.

#### 4.1. When firms have many ESG policies

Firms often disclose many ESG policies, which are the basis of numerous ESG ratings. If these policies are effective or representative of a firm's internal ESG practices, then the firm's stated ESG policies should be positively associated with its ESG inside view. However, this might not be true if the stated ESG policies are ineffective or merely a greenwashing tool.

To evaluate these hypotheses, I count the number of ESG-related strengths from the MSCI KLD dataset to proxy for a firm's ESG policies in a year. MSCI indicates in its rating methodology (MSCI (2016, p. 13)) that these strength indicators are “designed to capture management best practices concerning ESG”, such as corporate policies like volunteer programs, and tone-at-the-top practices like promotion of women and minorities. I then regress my inside view measures in year  $t$ ,  $t+1$ ,  $t+2$ , or  $t+3$  on the measure of ESG policies in year  $t$ , with or without controlling for firm fixed effects, year and industry fixed effects, firm characteristics (ROA, size, institutional ownership, leverage, and Tobin's  $Q$ ), and the number of ESG controversies (also from MSCI KLD), all at year  $t$ . Sometimes, I allow the coefficient on ESG policies to vary with different subsample indicators to test whether the link between ESG policies and the inside view varies for different types of firms or different properties of the inside view.

Table 7 shows that there is no strong link between ESG policies and ESG inside views. To save space, the table only shows the results with the inside views measured at year  $t+1$ , but the results remain similar for other years. Panel A focuses on the E category. It shows that the coefficient on *Policies* is zero across different specifications, and not statistically significant.

Panel B focuses on the social (S) category, in which the coefficient on *Policies* is positive and statistically significant at the 1% level, but only when I do not control for firm fixed effects (columns 1 and 2). However, the coefficient is economically small (0.08). I standardize all continuous variables, so the coefficient means that a standard deviation (SD) higher in the number of policies is associated with a 0.08 SD higher in the inside view. In columns (3) and (6), the coefficient on the interaction between *Policies* and *High institutional ownership* is positive and statistically significant, consistent with institutional investors pressuring firms to care more about

ESG practices (Dyck et al. (2019)). Nonetheless, the coefficient is economically small (0.07). Columns (3) and (6) also show that the link between the inside view and ESG policies is weaker for firms with a high advertising intensity but stronger for firms with a better inside view, indicating that the link is stronger when greenwashing is less likely.

Panel C, on the governance dimension, shows that the relationship between a firm's governance policies and its inside view (column 1) is positive but weak, and is stronger (column 3) among firms with high analyst coverage or low organizational complexity (Coles, Daniel, and Naveen (2008)). However, these relationships disappear after controlling for firm characteristics, as in column (2), or firm fixed effects as in columns (4) to (6). Overall, there is no strong link between a firm's ESG policies and how the firm's employees view its ESG practices.

#### *4.2. When CEOs subscribe to the Business Roundtable's stakeholder view*

In August 2019, nearly 200 chief executive officers (CEOs) signed the new "Statement on the Purpose of a Corporation" by Business Roundtable (BRT), an association of CEOs in America's largest companies. The new statement of BRT emphasizes "a fundamental commitment to all stakeholders", which differs from its old statement since 1997 that "corporations exist principally to serve shareholders".<sup>9</sup> In this section, I examine whether employees view ESG practices to improve in BRT firms more than other firms after 2019. I collect the list of BRT firms from the BRT website. Among these firms, I find CUSIP identifiers for 183 firms. After matching with my main firm-year panel based on CUSIP, I arrive at 143 BRT firms in my sample.<sup>10</sup>

Theoretically, employees' inside view of ESG practices in a BRT firm might or might not improve after its CEO signed the stakeholder statement in 2019. On the one hand, if signing the BRT statement is a real commitment to ESG practices, then a firm with a high E, S, or G inside view in 2018 should maintain its high inside view in 2020, while a firm with a low E, S, or G inside view in 2018 should improve its inside view. On average, a real commitment could translate

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<sup>9</sup> <https://opportunity.businessroundtable.org/ourcommitment/>.

<sup>10</sup> I cannot analyze how the MSCI ESG ratings changed after the BRT commitment because MSCI discontinued their KLD ESG ratings in 2019 to start a brand new set of ESG ratings.



into an improvement in the inside view. Even though it might take time for a firm's ESG practices to change after the BRT commitment, the firm's employees could quickly judge whether the commitment is real. On the other hand, the BRT commitment could be cheap talk. Bebchuk and Tallarita (2020) document that most firms did not seek board approval in signing the BRT letter and Raghunandan and Rajgopal (2020) show that these firms had poor records of ESG practices. After signing the letter, these firms have had little change in their bylaws and compensation schemes to advance stakeholders' interests (Bebchuk and Tallarita (2022)).

To test these hypotheses, I regress the change in the inside view from 2018 to 2020 on a BRT indicator and firm characteristics. Table 8 Panel A shows that signing the BRT statement is not associated with any significant change in the inside view. The coefficient on the *BRT* indicator is statistically indistinguishable from zero in columns (1) to (3). In columns (4) to (6), I allow the coefficient on *BRT* to vary with indicators of high or low institutional ownership, analyst coverage, organizational complexity, advertising intensity, or COVID exposure (Koren and Peto (2020)). The only statistically significant result is that BRT firms with a high organizational complexity saw a larger decline in the inside view of environmental practices relative to other firms. Table 8 Panel B shows that even when I split the sample by above- or below-median prior inside view, the coefficient on *BRT* continues to be statistically indistinguishable from zero across columns. In untabulated tests, I find that the BRT firms did not have a better inside view than other firms before 2019 either. The results remain unchanged when I use propensity score matching to find appropriate control firms for each BRT firm based firm characteristics measured in 2018, as in Raghunandan and Rajgopal (2021). Overall, the results imply that employees do not view the BRT statement as a credible commitment to ESG practices.

#### *4.3. When firms commit to the United Nations Global Compact*

The United Nations Global Compact (UNGC) claims itself to be the world's largest corporate sustainability initiative. Its goal is to support companies to align themselves with ten principles across dimensions like human rights and anti-corruption. Between 2000 and 2020, more than

22,000 companies have joined the UNGC, thus explicitly stating a commitment to ESG practices. In this section, I investigate whether this commitment to ESG practices is credible.

I obtain the list of all firms that have ever joined the UNGC, henceforth UNGC firms, from the UNGC website. Of over 29,000 organizations worldwide that have ever joined the UNGC by 2021, over 22,000 are companies. Of these firms, 965 are domiciled in the US. I manually narrow this list to 203 US public firms with a valid CUSIP identifier. After matching with Glassdoor and Compustat, I arrive at a sample of 162 UNGC firms.

These firms' ESG commitment might be credible. Unlike the BRT commitment, the UNGC commitment requires board approval. In addition, the UNGC has publicly expelled over 40% of its participants for failure to communicate progress, implying a high reputational cost of the commitment. Thus, a firm might be more likely to improve its ESG practices after joining the UNGC than otherwise similar firms.

To test this hypothesis, I conduct propensity score matching to identify appropriate control firms for each firm that ever joined the UNGC, by using a logit model based on firm characteristics (size, ROA, leverage, sales growth, Tobin's Q, and institutional ownership) and lagged ESG inside views.<sup>11</sup> I then match with replacement each UNGC firm in its first year of UNGC participation with up to 10 control firms using the propensity score within a caliper of 0.1 in the same year and industry. The caliper requirement ensures that only close-enough matches are selected, so in the end my sample includes 539 unique control firms for 111 UNGC firms that have the required data. These control firms have never joined the UNGC, so my research design avoids potential caveats with using already-treated firms as controls, as detailed in Goodman-Bacon (2021).

For each firm, I calculate the change in the average E, S, or G inside view from three years before to three years after the firm joins the UNGC. I then regress it on an indicator *UNGC* of whether a firm has joined the UNGC. Basically, I am running a diff-in-diff test by stacking together panels of treated and control firms around the treatment year, i.e., a stacked regression design recommended by Baker, Larcker, and Wang (2022), but collapsing the time series information into

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<sup>11</sup> The lagged ESG inside views do not significantly predict the chance of a firm's joining the UNGC.

a pre-period and a post-period to reduce the chance of false discovery (Bertrand, Duflo, and Mullainathan (2004)) while making my test results more easily comparable to the BRT test results.

Table 9 Panel A shows the results. Without control variables, columns (1) to (3) indicate that UNGC firms improve their ESG inside view by 17% to 20% standard deviation more than control firms for the S and G categories with statistical significance at the 1% and 10% levels, respectively. After controlling for firm characteristics, the coefficients on the *UNGC* indicator becomes less statistically significant (at the 10% level in column (5)), but the economic magnitude remains significant: 11% and 17%. I also interact the *UNGC* indicator with indicators of whether a firm has high (above-sample-median) institutional ownership, analyst coverage, organizational complexity, or advertising intensity in columns (7) to (9). The only statistically significant result is with institutional ownership. The corresponding coefficient is negative, implying that employees view governance to improve less in UNGC firms with high institutional ownership.

Table 9 Panel B shows the same results in high or low ESG inside views before a firm joins the UNGC (relative to sample median). The coefficient on *UNGC* is positive and significant at the 1% level in the sub-sample with a high prior S inside view (column 3) while it is positive and significant at the 10% level in the sub-sample with a low prior G inside view (column 6). These results are hard to explain if joining the UNGC is merely cheap talk.<sup>12</sup>

#### *4.4. An exogenous shock to the incentives to walk the ESG talk.*

If the inside view captures a firm's internal ESG practices well, it likely improves when the firm has a strong incentive to walk the ESG talk, such as when poor internal ESG practices become more costly. In this section, I study such a shock regarding one important dimension of ESG practices: diversity and inclusion (D&I).<sup>13</sup>

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<sup>12</sup> In un-tabulated tests, I find that the MSCI ESG ratings improve for UNGC firms relative to other firms after joining the UNGC. The improvement is statistically significant on the E and G categories, and strongest on the joining year.

<sup>13</sup> By contrast, following a shock that increases a firm's incentive to *only* talk about ESG practices, the firm's internal ESG practices are unlikely to improve. In the Internet Appendix IA9, I consider cyber-attacks as such shocks, as Akey et al. (2021) shows that a cyber-attack induces firms to improve their ESG image, say by having more charity donations. I find that the inside view of ESG practices hardly improves after a cyber-attack.

In the United States, employers can be held liable for workplace harassment if the harasser has a supervisory role over the victim, under the Title VII of the Civil Rights Act of 1964. However, in July 2013, the 7<sup>th</sup> Circuit Court, which set precedents for legal cases in Illinois, Indiana, and Wisconsin, unexpectedly held an employer liable for sexual and racial harassment even when the harasser was merely a co-worker of the victim (*Lambert v. Peri Formworks Sys., Inc.*). Thus, the court ruling raised the risk of harassment lawsuits for firms located in those three states (treated firms) relative to firms located elsewhere (control firms). In addition, the Court ruled against the employer despite the employer's existing policies on handling harassment complaints, so the treated firms could not simply add more policies to circumvent the increased legal risk, and thus had a stronger incentive to *truly improve internal* diversity and inclusion (D&I) practices. Consequently, the treated firms were more likely to improve their inside view of social practices, which include D&I practices, after the court ruling.

I conduct a difference-in-differences test to study how the inside view changes around the 2013 D&I-related ruling for the treated firms relative to the control firms. Because employees mention social practices in under 25% of the reviews and D&I is only a subcategory of the social practices, I restrict the sample to firm-years with at least 10 reviews (25<sup>th</sup> percentile) to ensure that the inside view measure can capture meaningful changes in a firm's practices related to the court ruling.<sup>14</sup>

Table 10 Panel A shows the results. The coefficient on the *Treat\*Post* interaction is positive and statistically significant at the 1% level for the social (S) category, but negative and statistically insignificant for the environmental (E) and governance (G) categories (columns (1), (4), and (7)), suggesting that the inside view improved after the court ruling only for the S category. When I break the *Post* indicator down to indicators for individual years since the court ruling, I find that the improvement in the S inside view was most pronounced in the year of the ruling and two years later (column (5)). While there is no significant result for the E category, the same test for the G

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<sup>14</sup> Without this minimum-reviews restriction, the results are qualitatively similar, albeit with slightly lower statistical significance, as expected with noisier data. An alternative way to ensure that my measure focuses enough on the social practices most relevant to the court ruling is to capture an inside view of diversity and inclusion (D&I) directly. I do that in the Internet Appendix IA8 and find statistically significant results similar to my main findings.

category in column (8) indicates that there was a significant decline in the G inside view in the court ruling year as well, suggesting that governance practices were negatively affected by the ruling.<sup>15</sup> Finally, when I include the interactions between *Treat* and indicators for the years before the ruling, I find that the coefficients on these interactions are insignificant, assuring the parallel trend assumption in a typical difference-in-differences test. Figure IA2 plots those coefficients.<sup>16</sup>

Because the court ruling had opposite effects on S and G practices, which I show earlier to both have a positive association with firm value, the ruling could have an ambiguous effect on firm value. The treated firms' valuation could improve after the court ruling if their worsened G practices only affected their short-term performance while their improved S practices enhanced their long-term performance via improved employee satisfaction (Edmans (2011)). However, if G practices generally matter more for valuation than S practices, the worsened G practices could reduce firm value. I find evidence consistent with the latter hypothesis. Table 11 Panel B shows that after the court ruling, the treated firms experienced an overall 6% standard deviation decline in Tobin's Q (column (1)). While this decline is statistically insignificant, a breakdown of the results indicates that the decline is statistically significant up to the 5% level two years after the ruling (columns (2) and (3)). There was no similar decline in short-term performance metrics like sales growth and ROA (columns (4) to (9)). Overall, the results indicate that a firm's ESG practices matter for its valuation and the G dimension appears more important than the S dimension.<sup>17</sup>

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<sup>15</sup> Existing economic theories do suggest that improving diversity and inclusion could involve a higher organizational cost, i.e., worse governance. For example, Lang (1986) theorizes that diverse groups likely face higher communication costs and more conflicts. Even without conflicts, more ideas and information from a diverse workforce could require more time to process and thus restrict a firm's operating flexibility (Jackson (1992), Hambrick, Cho, and Chen (1996)).

<sup>16</sup> The MSCI ESG ratings do not exhibit significant changes around the ruling for treated relative to control firms.

<sup>17</sup> I do not control for time-varying characteristics like sales growth or ROA. Doing so can confound the analysis since treatment may also affect those outcomes (Angrist and Pischke (2009)). Controlling for fixed characteristics like industry fixed effects and their interactions with year indicators (industry\*year) do not change my results.

## 5. Robustness

In this section, I discuss the robustness of my findings to potential measurement issues of the inside view. I also address more general concerns like selection bias.

### *5.1. Concerns with measurement scope and noise*

Overall, I find that the inside view is informative about a firm's ESG practices, but it often looks different from the firm's stated ESG policies and external ratings, i.e., an outside view.

The weak correlation between the inside view and the outside view may be because employees and rating agencies care about different ESG topics. Nonetheless, this concern cannot explain my results, because I measure the inside view only on the set of ESG topics commonly considered by the major rating agencies. Moreover, when I restrict the inside view to a narrow ESG issue that both employees and rating agencies care about, namely diversity and inclusion (D&I), the inside view is still weakly correlated with a firm's ESG ratings. More D&I policies are not strongly associated with a better D&I inside view either. The Internet Appendix IA8 provides more detail.

The weak correlation could also be due to measurement noise in the inside view. I evaluate the consequences of such potential noise by testing whether my results remain similar in subsamples with likely less noise. Specifically, among firm-years with more reviews (above sample median), the rank correlation between the inside view and the MSCI rating remains low, at 0.01, 0.16, and 0.11 for the E, S, and G categories, respectively. In the subsample with a low dispersion in the inside view, i.e., when employees disagree less about their firm's ESG practices, the link between the inside view and a firm's policies and ratings remains weak. The results remain similar when I construct the inside view using only reviews with at least one ESG key word, or only reviews with a high frequency of ESG words, which are likely more informative about a firm's ESG practices. Finally, I evaluate the noise in the inside view directly by reading 500 randomly selected reviews. Among the reviews that mention ESG key words, I verify that Glassdoor's labeling of pros and cons correctly classifies positive and negative mentions of a firm's ESG practices in 92% of the

cases. No systematic patterns emerge for the misclassified cases. Only one review possibly features a situation in which an employee mentions a pro-ESG practice in the cons section.<sup>18</sup>

## 5.2. Selection concerns

There are two groups of potential selection issues with the inside view: selection into writing a review, and selection into viewing ESG issues differently.

Regarding selection into writing a review, one common concern with online reviews is that reviews might be predominantly written by people with an extreme view, such as disgruntled employees wanting to quit their jobs. If this is true, the inside view measures could feature a lot of extremely negative values. However, Figure 2 Panel A shows that the distribution of the inside view on each ESG category is bell-shaped, featuring a low frequency of extremely negative values. The bell shape is unlikely an artifact of my ESG word lists. Figure 2 Panel B shows that the distributions of the numerical ratings on Glassdoor are also bell-shaped.

On the flip side, firms might have an incentive to boost reviews (Mayzlin, Dover, and Chevalier (2014)). For example, a *Wall Street Journal* article argues that some firms encourage employees to write glossy reviews on Glassdoor.<sup>19</sup> The article's authors identified potential cases of firms manipulating Glassdoor reviews by examining firms with an unusually large spike in the number of reviews in a single month. I follow their methodology to identify such spikes and find that removing these spikes changes my inside view measure little, with the resulting measure having a correlation of above 0.94 with my baseline measure on each ESG category. The predictive power of the inside view measure also changes little.<sup>20</sup>

Regarding selection into viewing ESG issues differently, employees across different firms have differences that might induce them to write differently about ESG practices, such as

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<sup>18</sup> Among the 500 reviews, the most frequent ESG key words include *energy*, *industrial*, and *chemical* on the E category, *employee*, *health*, and *safety* on the S category, and *culture*, *leadership*, and *decision* for the G category.

<sup>19</sup> <https://www.wsj.com/articles/companies-manipulate-glassdoor-by-inflating-rankings-and-pressuring-employees-11548171977>

<sup>20</sup> A firm-month is considered as a spike if the number of reviews in that firm-month is three standard deviations above the mean of the firm's review counts in the 6 months before and the 6 months after that month.

differences on political leaning, job functions, skill levels, and industries in which they work. For example, employees might discuss ESG issues more in an ESG-related industry, such as oil and gas. Thus, the inside view measure could simply capture ESG-relatedness. To control for that, I have industry fixed effects and firm characteristics in all my tests. As for job title and skill level, higher-ranked and more educated employees might be more pro-ESG and write about ESG issues differently. Nonetheless, my results remain similar when I remove reviews written by high-ranked employees, as classified by their job titles using an algorithm described in the Internet Appendix IA5. Finally, as a more general way to capture individual reviewers' attitude toward ESG issues, I measure attention to ESG issues at the review level, and find that my results remain similar among the reviews featuring a high attention to ESG issues.

### 5.3. *Other concerns*

Another common concern with reviews data is the halo effect (Thorndike (1920)): the tendency for a reviewer's overall sentiment to affect his judgement across all rating categories. If the halo effect is prevalent among reviews, I should observe many reviews with all high or all low inside views across categories. I find no such results. Figure 2 Panel C shows that under 0.2% of reviews in my sample indicate a positive view across all three ESG categories. Under 2% of reviews indicate a positive view for two out of three ESG dimensions. The results are similar for negative views. The fraction of all-positive or all-negative reviews is also low for the numerical ratings (under 10%). Removing these reviews changes the inside view little, as the resulting measure has a correlation of 0.97 with the baseline. Lastly, only 30% of reviews have ratings that are all below 3 or all above 3, so most employees consider both the negatives and the positives in their reviews.

A concern related to the halo effect is that the inside view might merely capture how much employees like a firm. This concern is unlikely, because the rating called *overall* on Glassdoor, a reasonable proxy for how much employees like a firm, does not strongly predict the inside view, as shown in Table IA5 in the Internet Appendix. Instead, the table indicates that the lagged inside view strongly predicts itself on each of the ESG categories, and well beyond all the numerical



ratings on Glassdoor, suggesting that the inside view captures a persistent component of a firm's ESG practices that is distinct from how employees rate the firm across many dimensions.

Finally, 43% of Glassdoor reviews are written by a firm's former employees, so these reviews might not provide current information about the firm. Nonetheless, I keep these reviews because they could inform about a firm's persistent ESG practices. When I remove these reviews in measuring the inside view, the resulting measure has a high correlation (above 0.7) with the baseline measure. In addition, removing those reviews does not change my main results.

## **6. Conclusion**

In this paper, I analyze 10.4 million anonymous employee reviews and find that employees have useful information about firms' environmental, social, and governance (ESG) practices. Employees discuss ESG topics in 43% of reviews, thereby providing substantial information about firms' ESG practices. The employees' inside view predicts various indicators of a firm's future ESG-related outcomes, beyond the existing ESG ratings, particularly on the S and G dimensions. Using the inside view, I show that a firm's stated ESG policies often differ from its employees' view of its practices. In various settings, low-cost changes in a firm's ESG policies, i.e., greenwashing, do not affect the inside view, while more expensive changes do.

This paper has important implications for both industry practices and academic research. For industry practices, investors and rating agencies should not take firms' voluntary disclosure at face value in assessing their ESG practices. In addition, ESG rating agencies could consider incorporating employee reviews into their rating methodology more broadly. For future research, researchers can examine the reasons for and implications of the gap between external ESG ratings and the inside view. Moreover, since employee reviews cover both public and private firms, future research can study whether public ownership affects ESG practices. Finally, my approach of measuring ESG practices could be generalized to measuring traditionally hard-to-measure issues, such as discrimination and fraud.

## References

- Aggarwal, Reena, Isil Erel, René Stulz, and Rohan Williamson, 2009, Differences in Governance Practices Between U.S. and Foreign Firms: Measurement, Causes, and Consequences, *Review of Financial Studies* 22, 3131–3169.
- Akey, Pat, Stefan Lewellen, Inessa Liskovich, and Christoph Schiller, 2021, Hacking Corporate Reputations, *Rotman School of Management Working Paper*.
- Albuquerque, Rui, Yrjö Koskinen, and Chendi Zhang, 2019, Corporate Social Responsibility and Firm Risk: Theory and Empirical Evidence, *Management Science* 65, 4451–4469.
- Angrist, Joshua D., and Jörn-Steffen Pischke, 2009, *Mostly Harmless Econometrics: An Empiricist's Companion* (Princeton university press).
- Baier, Philipp, Marc Berninger, and Florian Kiesel, 2020, Environmental, Social and Governance Reporting in Annual Reports: A Textual Analysis, *Financial Markets, Institutions & Instruments* 29, 93–118.
- Baker, Andrew C., David F. Larcker, and Charles C.Y. Wang, 2022, How Much Should We Trust Staggered Difference-in-Differences Estimates?, *Journal of Financial Economics* 144, 370–395.
- Bebchuk, Lucian A., Kobi Kastiel, and Roberto Tallarita, 2020, For Whom Corporate Leaders Bargain, *S. Cal. L. Rev.* 94, 1467.
- Bebchuk, Lucian A., Kobi Kastiel, and Roberto Tallarita, 2023, Stakeholder Capitalism in the Time of COVID, *Forthcoming, Yale Journal on Regulation* 40.
- Bebchuk, Lucian A., and Roberto Tallarita, 2020, The Illusory Promise of Stakeholder Governance, *Cornell L. Rev.* 106, 91.
- Bebchuk, Lucian A., and Roberto Tallarita, 2022, Will Corporations Deliver Value to All Stakeholders?, *Forthcoming, Vanderbilt Law Review* 75.
- Berg, Florian, Kornelia Fabisik, and Zacharias Sautner, 2021, Rewriting History II: The (Un)predictable Past of ESG Ratings, *Working Paper*.
- Berg, Florian, Julian F. Koelbel, and Roberto Rigobon, 2019, Aggregate Confusion: The Divergence of ESG Ratings, *Forthcoming Review of Finance*.
- Bernile, Gennaro, Vineet Bhagwat, and Scott Yonker, 2018, Board Diversity, Firm Risk, and Corporate Policies, *Journal of Financial Economics* 127, 588–612.

- Bertrand, Marianne, Esther Dufo, and Sendhil Mullainathan, 2004, How Much Should We Trust Differences-in-Differences Estimates?, *The Quarterly Journal of Economics* 119, 249–275.
- Bessec, Marie, and Julien Fouquau, 2021, Green Sentiment in Financial Markets: A Global Warning, *Working Paper*.
- Campbell, Dennis, and Ruidi Shang, 2021, Tone at the Bottom: Measuring Corporate Misconduct Risk from the Text of Employee Reviews, *Management Science: Forthcoming*.
- Chatterji, Aaron K., Rodolphe Durand, David I. Levine, and Samuel Touboul, 2016, Do Ratings of Firms Converge? Implications for Managers, Investors and Strategy Researchers, *Strategic Management Journal* 37, 1597–1614.
- Chava, Sudheer, Wendi Du, and Baridhi Malakar, 2021, Do Managers Walk the Talk on Environmental and Social Issues?, *Available at SSRN 3900814*.
- Chen, Shuang, 2022, Green Investors and Green Transition Efforts: Talk the Talk or Walk the Walk?, *Available at SSRN 4254894*.
- Christensen, Dane M., George Serafeim, and Anywhere Sikochi, 2021, Why is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings, *The Accounting Review* 97, 147–175.
- Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen, 2008, Boards: Does One Size Fit All?, *Journal of Financial Economics* 87, 329–356.
- Douglas, Elyse, Tracy Van Holt, and Tensie Whelan, 2017, Responsible Investing: Guide to ESG Data Providers and Relevant Trends, *Journal of Environmental Investing* 8, 91–114.
- Dube, Svenja, and Chenqi Zhu, 2021, The Disciplinary Effect of Social Media: Evidence from Firms' Responses to Glassdoor Reviews, *Journal of Accounting Research* 59, 1783–1825.
- Durand, Rodolphe, and Anne Jacqueminet, 2015, Peer Conformity, Attention, and Heterogeneous Implementation of Practices in MNEs, *Journal of International Business Studies* 46, 917–937.
- Dyck, Alexander, Karl V. Lins, Lukas Roth, and Hannes F. Wagner, 2019, Do Institutional Investors Drive Corporate Social Responsibility? International Evidence, *Journal of Financial Economics* 131, 693–714.
- Edmans, Alex, 2011, Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices, *Journal of Financial Economics* 101, 621–640.
- Edmans, Alex, 2012, The Link Between Job Satisfaction and Firm Value, with Implications for Corporate Social Responsibility, *Academy of Management Perspectives* 26, 1–19.

Edmans, Alex, 2021, *Grow the Pie: How Great Companies Deliver Both Purpose and Profit—Updated and Revised* (Cambridge University Press).

Ellul, Andrew, and Vijay Yerramilli, 2013, Stronger Risk Controls, Lower Risk: Evidence from U.S. Bank Holding Companies: Stronger Risk Controls, Lower Risk, *The Journal of Finance* 68, 1757–1803.

Ferrell, Allen, Hao Liang, and Luc Renneboog, 2016, Socially Responsible Firms, *Journal of Financial Economics*, 22.

Flammer, Caroline, 2015, Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach, *Management Science* 61, 2549–2568.

Gao, Lei, Jie Jack He, and Juan Julie Wu, 2021, Standing Out from the Crowd Via CSR Engagement: Evidence from Non-Fundamental-Driven Price Pressure, *Journal of Financial and Quantitative Analysis*, 1–50.

Gartenberg, Claudine Madras, Andrea Prat, and George Serafeim, 2018, Corporate Purpose and Financial Performance. SSRN Scholarly Paper, Social Science Research Network, Rochester, NY.

Gillan, Stuart L., Andrew Koch, and Laura T. Starks, 2021, Firms and Social Responsibility: A Review of ESG and CSR Research in Corporate Finance, *Journal of Corporate Finance* 66, 101889.

Godfrey, Paul C., Craig B. Merrill, and Jared M. Hansen, 2009, The Relationship Between Corporate Social Responsibility and Shareholder Value: An Empirical Test of the Risk Management Hypothesis, *Strategic Management Journal* 30, 425–445.

Gompers, Paul, Joy Ishii, and Andrew Metrick, 2003, Corporate Governance and Equity Prices, *The Quarterly Journal of Economics* 118, 107–156.

Goodman-Bacon, Andrew, 2021, Difference-in-Differences with Variation in Treatment Timing, *Journal of Econometrics* 225, 254–277.

Gorton, Gary B, and Alexander K Zentefis, 2020, Corporate Culture as a Theory of the Firm, .

Green, T. Clifton, Ruoyan Huang, Quan Wen, and Dexin Zhou, 2019, Crowdsourced Employer Reviews and Stock Returns, *Journal of Financial Economics* 134, 236–251.

Grewal, Jody, and George Serafeim, 2020, Research on Corporate Sustainability: Review and Directions for Future Research, *Foundations and Trends® in Accounting* 14, 73–127.

Gu, Lifeng, Dirk Hackbarth, and Tong Li, 2021, Inflexibility and leverage, *Working Paper*.

- Guiso, Luigi, Paola Sapienza, and Luigi Zingales, 2015, The Value of Corporate Culture, *Journal of Financial Economics* 117, 60–76.
- Guo, Feng, Chenxi Lin, Adi Masli, and Michael S. Wilkins, 2021, Auditor Responses to Shareholder Activism, *Contemporary Accounting Research* 38, 63–95.
- Hambrick, Donald C., Theresa Seung Cho, and Ming-Jer Chen, 1996, The Influence of Top Management Team Heterogeneity on Firms' Competitive Moves, *Administrative science quarterly*, 659–684.
- Hanley, Kathleen Weiss, and Gerard Hoberg, 2019, Dynamic Interpretation of Emerging Risks in the Financial Sector, *The Review of Financial Studies*.
- Heath, Davidson, Daniele Macciocchi, Roni Michaely, and Matthew C. Ringgenberg, 2023, Does Socially Responsible Investing Change Firm Behavior?, *Review of Finance*.
- Himmelberg, Charles P., R. Glenn Hubbard, and Darius Palia, 1999, Understanding the Determinants of Managerial Ownership and the Link Between Ownership and Performance, *Journal of Financial Economics* 53, 353–384.
- Hoepner, Andreas G. F., Ioannis Oikonomou, Zacharias Sautner, Laura T. Starks, and Xiaoyan Zhou, 2020, ESG Shareholder Engagement and Downside Risk, *SSRN Electronic Journal*.
- Hoitash, Udi, and Anahit Mkrtchyan, 2021, Internal Governance and Outside Directors' Connections to Non-Director Executives, *Journal of Accounting and Economics*, 101436.
- Huang, June, and Shirley Lu, 2022, ESG Performance and Voluntary ESG Disclosure: Mind the (Gender Pay) Gap, *SSRN Electronic Journal*.
- Jackson, Susan E., 1992, Consequences of group composition for the interpersonal dynamics of strategic issue processing, *Advances in strategic management* 8, 345–382.
- Jensen, C, and H Meckling, 1976, Theory Of The Firm: Managerial Behavior, Agency Costs And Ownership Structure, *Journal of Financial Economics*, 56.
- Jo, Hoje, and Haejung Na, 2012, Does CSR Reduce Firm Risk? Evidence from Controversial Industry Sectors, *Journal of Business Ethics* 110, 441–456.
- Kacperczyk, Marcin T., and Jose-Luis Peydro, 2021, Carbon Emissions and the Bank-Lending Channel, *SSRN Electronic Journal*.

- Kamiya, Shinichi, Jun-Koo Kang, Jungmin Kim, Andreas Milidonis, and René M. Stulz, 2021, Risk Management, Firm Reputation, and the Impact of Successful Cyberattacks on Target Firms, *Journal of Financial Economics* 139, 719–749.
- Klein, April, and Emanuel Zur, 2009, Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors, *The Journal of Finance* 64, 187–229.
- Koren, Miklós, and Rita Peto, 2020, Business Disruptions from Social Distancing, *Plos one* 15.
- Lang, Kevin, 1986, A Language Theory of Discrimination, *The Quarterly Journal of Economics* 101, 363–382.
- Larcker, David F., and Brian Tayan, 2019, Loosey-Goosey Governance: Four Misunderstood Terms in Corporate Governance, *Rock Center for Corporate Governance at Stanford University Closer Look Series: Topics, Issues and Controversies in Corporate Governance No. CGRP-79*.
- Li, Jun, and Di (Andrew) Wu, 2020, Do Corporate Social Responsibility Engagements Lead to Real Environmental, Social, and Governance Impact?, *Management Science* 66, 2564–2588.
- Li, Kai, Feng Mai, Rui Shen, and Xinyan Yan, 2020, Measuring Corporate Culture Using Machine Learning, *The Review of Financial Studies*, 104.
- Lins, Karl V., Henri Servaes, and Ane Tamayo, 2017, Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis: Social Capital, Trust, and Firm Performance, *The Journal of Finance* 72, 1785–1824.
- Luo, Xueming, and C. B. Bhattacharya, 2009, The Debate over Doing Good: Corporate Social Performance, Strategic Marketing Levers, and Firm-Idiosyncratic Risk, *Journal of Marketing* 73, 198–213.
- Marinescu, Ioana, Andrew Chamberlain, Morgan Smart, and Nadav Klein, 2021, Incentives Can Reduce Bias in Online Employer Reviews., *Journal of Experimental Psychology: Applied* 27, 393.
- Matos, Pedro, 2020, ESG and Responsible Institutional Investing Around the World: A Critical Review, *CFA Institute Research Foundation*.
- Mayzlin, Dina, Yaniv Dover, and Judith Chevalier, 2014, Promotional Reviews: An Empirical Investigation of Online Review Manipulation, *American Economic Review* 104, 2421–2455.
- Mikolov, Tomas, Ilya Sutskever, Kai Chen, Greg S. Corrado, and Jeff Dean, 2013, Distributed Representations of Words and Phrases and Their Compositionality, *Advances in Neural Information Processing Systems*.

MSCI, 2016, MSCI ESG KLD STATS: 1991-2015 Data Sets Methodology, (MSCI).

Oikonomou, Ioannis, Chris Brooks, and Stephen Pavelin, 2012, The Impact of Corporate Social Performance on Financial Risk and Utility: A Longitudinal Analysis, *Financial Management* 41, 483–515.

Pástor, Lubos, Robert F. Stambaugh, and Lucian A. Taylor, 2020, Sustainable Investing in Equilibrium, *Journal of Financial Economics*.

Raghunandan, Aneesh, and Shiva Rajgopal, 2021, Do Socially Responsible Firms Walk the Talk?, *SSRN Electronic Journal*, 45.

Raghunandan, Aneesh, and Shivaram Rajgopal, 2020, Do the Socially Responsible Walk the Talk?, *SSRN Electronic Journal*.

Schiller, Christoph, 2017, Global Supply-Chain Networks and Corporate Social Responsibility, *SSRN Electronic Journal*.

Shapira, Roy, 2011, Corporate Philanthropy as Signaling and Co-Optation, *Fordham L. Rev.* 80, 1889.

Sheng, Jinfei, 2019, Asset Pricing in the Information Age: Employee Expectations and Stock Returns, *SSRN Electronic Journal*.

Spence, Michael, 1973, Job Market Signaling, *The Quarterly Journal of Economics* 87, 355–374.

Thorndike, Edward L., 1920, A Constant Error in Psychological Ratings, *Journal of Applied Psychology* 4, 25–29.

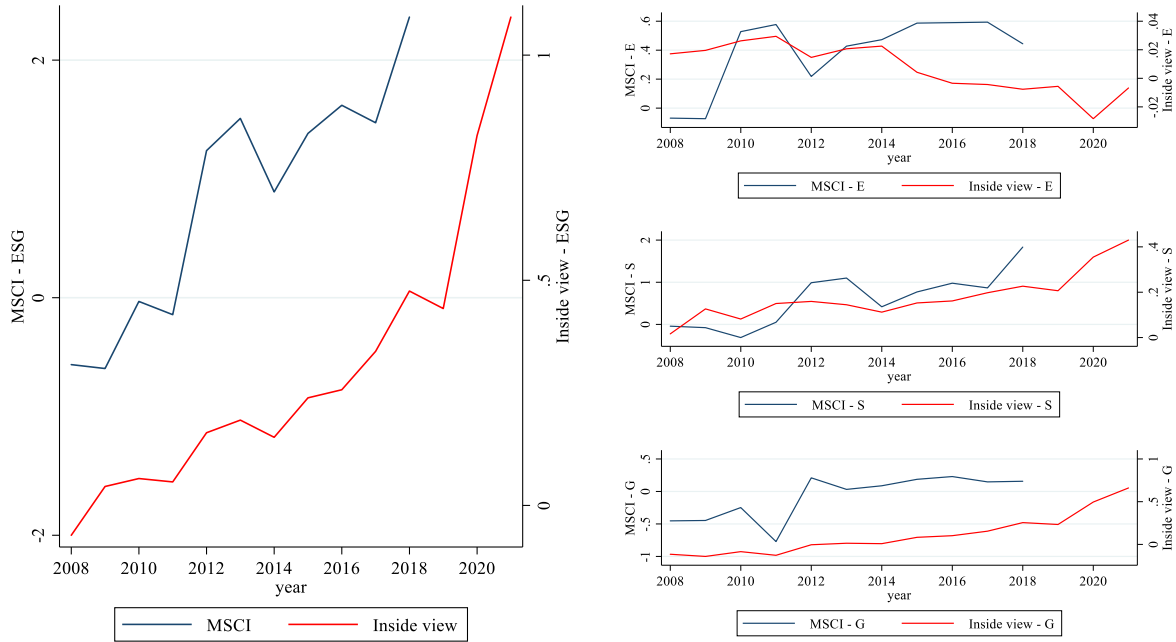
Welch, Kyle, and Aaron Yoon, 2020, Do High Ability Managers Choose ESG Projects that Create Shareholder Value? Evidence from Employee Opinions, *SSRN Journal*.

Wong, Christina, Aiste Brackley, and Erika Petoy, 2019, Rate the Raters 2019, *Sustainability.com*.

Yang, Ruoke, 2019, What Do We Learn From Ratings About Corporate Social Responsibility?, *Working Paper*, 78.

**Figure 1: Aggregate trend in the inside view**

This figure depicts the aggregate trend in the employees' inside view and the MSCI rating of ESG practices between 2008 and 2021. Each point on the line of each graph represents the average across firms in a year. For each firm-year, the inside view on each ESG category is the percentage of words belonging to that category in an average review's pros relative to cons sections during that firm-year, while the MSCI rating on each category is the number of strengths relative to weaknesses on that ESG category reported by MSCI for that firm-year. To aggregate across categories for a measure, I simply sum it up across categories.

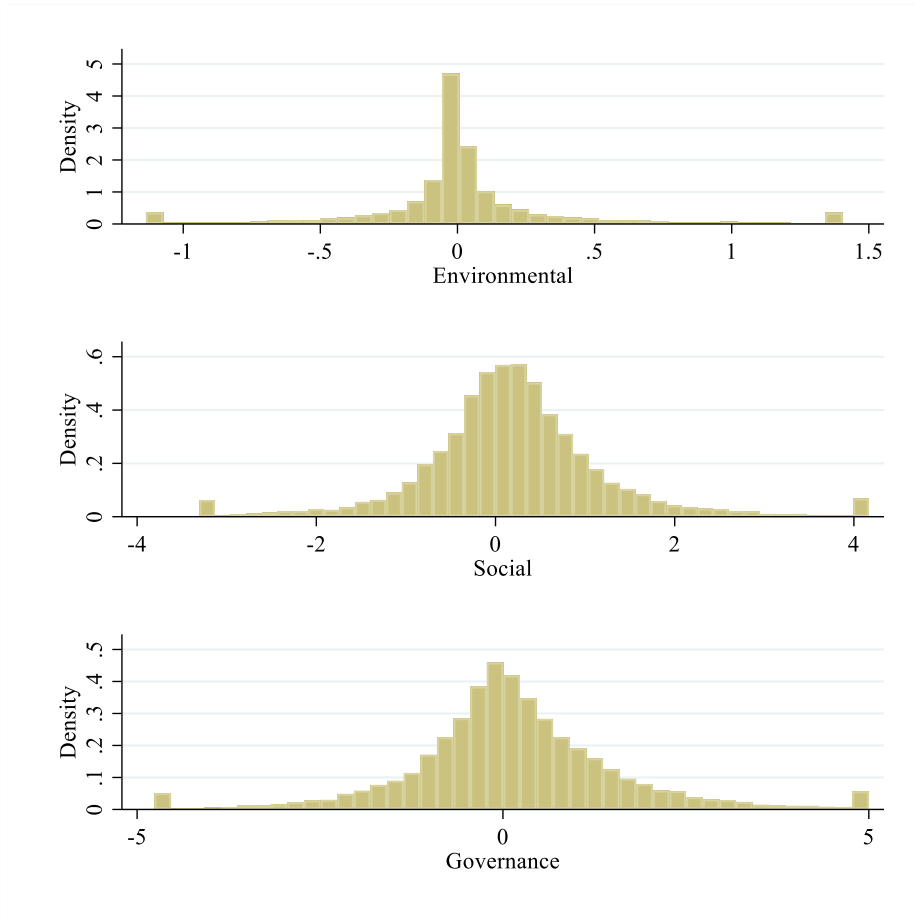




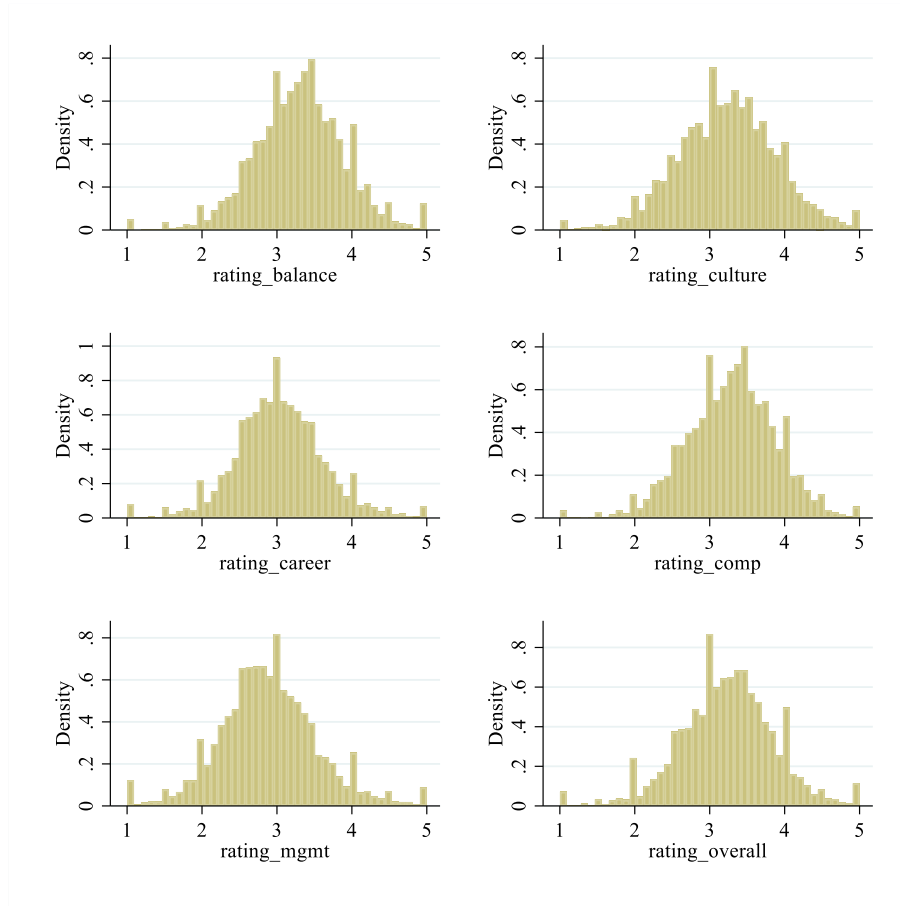
### Figure 2: Distribution of ESG inside views

In this figure, Panel A plots the histogram for the inside view on each ESG category at the firm-year level. In constructing these histograms, I exclude firm-years with no mentioning of ESG topics in their reviews. The inside view measure at the firm-year level is the average inside view measure across reviews in that firm-year. The inside view measure at the review level is the percentage of E, S, or G words in the review's pros relative to cons sections. Panel B plots the histograms of the average numerical ratings across reviews at the firm-year level, for six categories: overall, work-life balance, corporate culture, career opportunities, compensation, and management. Panel C shows the percentages of reviews in my sample that have all positive or all negative views or ratings across categories.

#### Panel A: Distribution of ESG inside views



**Panel B: Distribution of numerical ratings**



**Panel C: The percentage of all positive or all negative reviews**

	N	Percentage
Mentioning at least one ESG word	2,444,040	42.74
All positive on E, S, and G	2,444,040	0.03
All negative on E, S, and G	2,444,040	0.10
Positive 2 out of 3 E-S-G	2,444,040	1.91
Negative 2 out of 3 E-S-G	2,444,040	2.92
All numerical ratings are 5	2,444,040	9.05
All numerical ratings are 1	2,444,040	2.60
All ratings above 3	2,444,040	24.99
All ratings below 3	2,444,040	6.18

**Table 1: Summary statistics**

This table presents summary statistics for the main variables in my sample. Panel A presents summary statistics at the firm-year level. See the Internet Appendix IA3 for variable description. Panel B presents summary statistics at the review level. Panel C presents the rank (Spearman) correlation between the inside view and the ESG rating from either MSCI or Refinitiv at the firm-year level for each of the ESG categories and the combined (equally weighted) ESG score across the ESG categories. Each column in Panel C corresponds to the full sample or the subsample by different industries under the Fama-French five industry classification.

**Panel A: Summary statistics at the firm-year level**

	N	Mean	Std. Dev.	p10	Median	p90
No. of reviews	22186.00	108.46	360.30	3.00	28.00	206.00
Inside view E	22186.00	0.01	0.27	-0.11	0.00	0.12
Inside view S	22186.00	0.19	1.03	-0.82	0.09	1.28
Inside view G	22186.00	0.12	1.43	-1.36	0.00	1.75
MSCI rating of E	12281.00	0.40	1.02	0.00	0.00	2.00
MSCI rating of S	12287.00	0.63	2.15	-2.00	0.00	3.00
MSCI rating of G	7202.00	-0.22	0.78	-1.00	0.00	1.00
BRT	25998.00	0.08	0.27	0.00	0.00	0.00
UNGC	25998.00	0.04	0.20	0.00	0.00	0.00
E violation indicator	25998.00	0.13	0.33	0.00	0.00	1.00
S violation indicator	25998.00	0.26	0.44	0.00	0.00	1.00
E violation penalty/sales	20305.00	2.50	15.70	0.00	0.00	0.00
S violation penalty/sales	20305.00	50.60	285.55	0.00	0.00	15.62
Carbon emission/sales (ton/mil)	4208.00	418.72	1167.63	5.66	43.22	860.70
Fortune Best 100 indicator	25998.00	0.02	0.13	0.00	0.00	0.00
IC weakness indicator	20462.00	0.04	0.19	0.00	0.00	0.00
Number of IC weaknesses	20462.00	0.16	1.21	0.00	0.00	0.00
Accounting malpractice lawsuits	20425.00	0.01	0.18	0.00	0.00	0.00
Shareholder activism filings	20507.00	0.56	1.42	0.00	0.00	2.00
Downside volatility	19170.00	0.02	0.01	0.01	0.02	0.03
Tail risk	19177.00	0.08	0.05	0.03	0.06	0.13
Size (log assets)	20085.00	7.95	1.95	5.52	7.86	10.49
Tobin's Q	17976.00	2.12	1.79	0.99	1.56	3.83
Leverage (liabilities/assets)	20020.00	0.29	0.26	0.00	0.24	0.69
ROA (return on assets)	19137.00	0.11	0.23	0.01	0.12	0.25
Sales growth	19375.00	0.06	0.19	-0.12	0.05	0.27

**Panel B: Summary statistics at the review level**

Variable	Obs	Mean	Std. Dev.	Min	Max
Review contains ESG word	2444040	0.43	0.49	0.00	1.00
Review contains E word	2444040	0.02	0.13	0.00	1.00
Review contains S word	2444040	0.24	0.42	0.00	1.00
Review contains G word	2444040	0.28	0.45	0.00	1.00
Word count - Pros	2444040	17.20	22.57	0.00	2311.00
Word count - Cons	2444040	27.57	49.57	1.00	4917.00
Word count - Total	2444040	44.77	61.41	2.00	5030.00
Inside view E	2444038	-0.00	1.04	-80.00	60.00
Inside view S	2444038	0.28	4.24	-100.00	100.00
Inside view G	2444038	0.33	5.28	-100.00	100.00
Employee high-ranked	2444040	0.17	0.38	0.00	1.00
Overall rating not extreme	2444040	0.67	0.47	0.00	1.00

**Panel C: Correlation between the inside view and major ESG ratings**

**Correlation with the MSCI ESG rating**

	Full sample	Consumer	Manufacturing	High tech	Healthcare	Others
ESG	0.15***	0.15***	0.08***	0.19***	0.12***	0.19***
E	0.00	-0.04*	-0.01	0.07***	-0.00	-0.02
S	0.14***	0.15***	0.08***	0.17***	0.20***	0.14***
G	0.08***	0.09***	0.02	0.11***	0.05	0.11***

**Correlation with the Refinitiv ESG rating**

	Full sample	Consumer	Manufacturing	High tech	Healthcare	Others
ESG	0.07***	0.10***	0.08***	0.04**	0.02	0.13***
E	0.00	-0.04*	0.01	0.05**	-0.06	-0.01
S	0.11***	0.11***	0.10***	0.08***	0.12***	0.13***
G	0.01	0.03	0.00	0.03	0.01	0.03*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

**Table 2: ESG word lists**

Panel A presents the seed word lists on ESG topics. I obtain these lists by selecting the most frequently used words and phrases across ESG rating methodologies and select academic papers, as detailed in Section 3.2. Panel B presents the 50 words and phrases with the highest cosine similarity with the average vector representing each ESG category's seed word list. The full ESG dictionaries are included in the final panel of the Internet Appendix Table IA3.

**Panel A: Seed word lists**

Environmental	Social	Governance
environmental, emission, energy, water, carbon, biodiversity, pollution, green, packaging, renewable, recycle, footprint, disposal, greenhouse, raw material, renewable energy, carbon footprint, oil spill, global footprint, global warming, environmental protection, environmental sustainability, noise pollution, fossil fuel, electric vehicle, solar energy, solar panel, plastic bag, air pollution, wind turbine, nuclear power, natural gas	human, employee, health, safety, labor, community, labour, social, relation, philanthropy, workforce, citizenship, occupational, human capital, corporate citizenship, occupational health, community involvement, race ethnicity, discrimination harassment, medicaid medicare, collective bargaining, human resource, age discrimination, gender racial, racial ethnic, unfair dismissal, human trafficking, threat violence, charitable donation, charitable giving	board, governance, shareholder, ethic, practice, corruption, instability, bribery, committee, executive, transparency, ownership, audit, level, diversity, business, code conduct, board director, insider trading, daytoday operation, tax evasion, money laundering, policy procedure, regulatory scrutiny, track record, unethical behavior, law violation, nepotism cronyism

**Panel B: Top 50 words added**

Environmental	Social	Governance
co2, biofuel, hydrocarbon, irrigation, fertilizer, ethanol, agricultural, pollutant, recycling, purification, geothermal, ammonia, herbicide, fracke, ecological, thermal, forestry, electricity, dioxide, pesticide, hydroelectric, petrochemical, landfill, mining, consumption, compost, agriculture, compressor, lubricant, chemical, nuclear, biodegradable, gas turbine, polymer, lng, wastewater, aluminium, recyclable, contamination, industrial, electric utility, filtration, biomass, synthetic, vegetation, ewaste, reservoir, coolant, groundwater, stormwater	advocacy, sustainability, social justice, diversity inclusion, environmental protection, stewardship, equality, inclusion diversity, environmental sustainability, inclusion, eeo, humanitarian, awareness, diversity equality, justice, society, representation, gender equality, refugee, antidiscrimination, outreach, cultural competency, reproductive health, indigenous, antiracism, community outreach, glbt, environmental stewardship, mental health, racial justice, racial equity, nondiscrimination, systemic racism, domestic violence, prevention, racial gender, safeguard, hivaids, consciousness, constitutional, hiv, participant, latino, lgbtq, antibullye, cultural diversity, volunteerism, hse, dei, anticorruption	leadership, compliance, malfeasance, institutional, doj, organization, legal compliance, regulator, unethical practice, stakeholder, cronyism, integrity, embezzlement, regulatory compliance, impropriety, noncompliance, accountability, csuite, conflict interest, organizational, regulatory, strategic, fraudulent activity, partnership, due diligence, cfpb, risk aversion, operational, decisionmake, council, systemic, strategic planning, misuse fund, misconduct, irresponsibility, cronyism nepotism, political correctness, indict, discriminatory practice, ethical, opacity, mismanagement, bod, antitrust, decision making, watchdog, entity, governmental, ftc, misappropriation

**Table 3: Top and bottom firms by the inside view**

In this table, Panel A shows the top 5 firms and bottom 5 firms based on their average inside view of E, S, or G practices between 2014 and 2018. Before ranking the firms, I restrict the sample to the largest 500 firms by the average total assets between 2014 and 2018. Panel B shows excerpts from two actual reviews of the top and bottom firms in each category. These excerpts are from the pros (for the top firms) and the cons (for the bottom firms) of the reviews.

**Panel A: Top and bottom firms**

Ranked by employees' inside view of ESG practices		
Environmental	Social	Governance
Top 5		
Sunedison	Umpqua Bank	Linkedin
American Water	Old National Bancorp	Salesforce
Nextera Energy, Inc.	Gap Inc.	Yum!
Portland General Electric	Investors Bank	Microchip Technology
Albemarle	CNO Financial Group	Ceridian
Bottom 5		
ConocoPhillips	Opus Bank	FirstEnergy
Alpha Natural Resources	Intercontinental Exchange	Laureate Education
Freeport-Mcmoran	Tenneco	FirstMerit
Altria	Precision Castparts	Capital Bank
Pioneer Natural Resources	Pepco Holdings	Sterling Bancorp

**Panel B: Select reviews from the top and bottom firms.**

Company	Employee title	Year	Glassdoor overall rating	Select text
Top E - Sunedison	Business Development	2015	5.0	The company has excellent potential to capture market share in a rapidly growing sector ( <b>renewable energy</b> ). With the recent acquisition of First Wind the company is now expanding beyond <b>solar into wind energy</b> . Combined with our work on <b>energy storage technology ...</b>
	Project Engineer	2014	1.0	<b>It's solar</b> . Great way to help <b>the world's energy shortage and go green</b> . Some very excellent and helpful employees...
Bottom E - Pioneer Natural Resources	Anonymous Employee	2016	4.0	They need to do more core analysis and research for better <b>reservoir characterization</b> .
	Operations Technician	2015	4.0	<b>Poor management in Field Operations</b> . Going through a change in focus currently by shifting focus to <b>horizontal drilling...</b>
Top S - Umpqua Bank	Universal Associate	2015	4.0	Listens to <b>employees, community involvement</b> , rewards for performance.
	Accountant III	2017	5.0	<b>Paid 40 Hours</b> Annually to <b>Volunteer in the Community</b> . Treats you like a professional not Micro-managing.
Bottom S - Pepco Holdings	Anonymous Employee	2015	4.0	Work ethics and bad management . <b>No gender equality</b> .
	Tax Accountant	2016	5.0	Management doesn't listen to lower-level employees, <b>too many hours</b> are required to be worked, <b>bad work life balance</b>
Top G - LinkedIn	Sales	2014	4.0	... Jeff Weiner is an inspiration, and the other execs are all driving towards a <b>shared vision</b> . The <b>culture and values</b> of the company are held in high esteem and they're <b>felt throughout</b> the organizations...
	Anonymous Employee	2017	5.0	<b>Company values and adherence</b> to them (be open, honest & constructive). <b>Transparency</b> is not just a word; it's shown in actions by the executive team. The <b>outstanding leadership</b> team and commitment to <b>developing leaders</b> within the company...
Bottom G - Sterling Bancorp	Client Service Associate	2018	2.0	Too much <b>pressure for sales</b> ; Don't care about employees; Horrendous <b>leadership</b>
	Client Service	2016	1.0	Very <b>disorganized</b> . Your <b>work ethic</b> will not go a long way

**Table 4: Predicting future environmental performance indicators.**

This table shows the regressions at the firm-year level of environmental (E) performance indicators in year  $t+1$ ,  $t+2$ , or  $t+3$  on the E inside view and the MSCI E rating at year  $t$ . The dependent variable (Y) is an indicator whether a firm has an E violation in a year in Panel A, the associated penalty relative to the firm's sales (un-tabulated), and the logarithm of carbon emissions for Panel B. The models underlying all regressions are either OLS for continuous dependent variables, or Logit for indicator dependent variables. All regressions include as controls: Fama-French 48 industry fixed effects, year fixed effects, size, leverage, Tobin's Q, sales growth, return on assets, and institutional ownership, all measured at year  $t$ . All variables except for indicator variables are standardized to have a zero mean and a unit standard deviation. Standard errors (in parentheses) are clustered by firms.

**Panel A: Dependent variable (Y) is E violation indicator.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	0.00 (0.03)	-0.00 (0.03)	-0.01 (0.03)	0.03 (0.03)	0.02 (0.03)	0.01 (0.03)	0.02 (0.03)	0.02 (0.03)	0.01 (0.03)
MSCI <sub>t</sub>		-0.08* (0.04)	-0.07* (0.04)		-0.08* (0.04)	-0.07 (0.04)		-0.09* (0.05)	-0.08* (0.05)
Y <sub>t</sub>			1.01*** (0.14)			1.14*** (0.14)			0.81*** (0.15)
Obs.	12806	9688	9688	11536	9687	9687	10262	8628	8628
Pseudo R <sup>2</sup>	0.40	0.38	0.40	0.40	0.39	0.41	0.40	0.39	0.40
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel B: Dependent variable (Y) is Log(Carbon Emissions).**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	-0.01* (0.01)	-0.02* (0.01)	0.00 (0.00)	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.00)	-0.02* (0.01)	-0.01* (0.01)	-0.00 (0.00)
MSCI <sub>t</sub>		-0.02 (0.01)	-0.00 (0.00)		-0.02 (0.01)	0.00 (0.00)		-0.02 (0.02)	-0.00 (0.00)
Y <sub>t</sub>			0.95*** (0.01)			0.92*** (0.02)			0.91*** (0.03)
Obs.	3188	3022	2715	2890	2764	2313	2577	2455	1928
R <sup>2</sup>	0.71	0.71	0.97	0.71	0.71	0.96	0.71	0.71	0.95
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes



**Table 5: Predicting future social performance indicators.**

This table shows the regressions at the firm-year level of social (S) performance indicators in year  $t+1$ ,  $t+2$ , or  $t+3$  on the inside view on S practices and the MSCI S rating at year  $t$ . The dependent variable (Y) is an indicator whether a firm is in the Fortune's Best 100 Companies in a year for Panel A, the ratio of social violation penalty to sales in Panel B, and Tobin's Q in panel C. All regressions are OLS for continuous dependent variables, or Logit for indicator dependent variables. All regressions control for Fama-French 48 industry fixed effects, year fixed effects, size, leverage, Tobin's Q, sales growth, ROA, and institutional ownership, all at year  $t$ , except that when the dependent variable is Tobin's Q, the control variables do not automatically include Tobin's Q itself. All variables except for indicator variables are standardized to have a zero mean and a unit standard deviation. Standard errors (in parentheses) are clustered by firms.

**Panel A: Dependent variable (Y) is Fortune Best 100 indicator.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	0.55*** (0.08)	0.47*** (0.09)	0.15 (0.14)	0.52*** (0.08)	0.45*** (0.09)	0.19** (0.08)	0.49*** (0.08)	0.40*** (0.09)	0.14* (0.09)
MSCI <sub>t</sub>		0.84*** (0.10)	0.44*** (0.10)		0.78*** (0.10)	0.35*** (0.11)		0.75*** (0.12)	0.28** (0.12)
Y <sub>t</sub>			6.35*** (0.31)			5.38*** (0.32)			4.83*** (0.35)
Obs.	10192	7496	7496	9040	7378	7378	7813	6387	6387
Pseudo R <sup>2</sup>	0.19	0.27	0.72	0.20	0.25	0.60	0.19	0.24	0.53
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel B: Dependent variable (Y) is S violation penalty relative to sales.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	-0.02*** (0.01)	-0.02*** (0.01)	-0.02*** (0.01)	-0.01* (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
MSCI <sub>t</sub>		0.01 (0.02)	0.01 (0.02)		0.01 (0.02)	0.01 (0.01)		0.02 (0.02)	0.02 (0.02)
Y <sub>t</sub>			0.11*** (0.03)			0.08*** (0.02)			0.10*** (0.02)
Obs.	13437	10182	10182	11788	10063	10063	10205	8791	8791
R <sup>2</sup>	0.03	0.04	0.05	0.04	0.04	0.05	0.04	0.04	0.05
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel C: Dependent variable (Y) is Tobin's Q**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	0.04*** (0.01)	0.03*** (0.01)	0.01** (0.00)	0.03*** (0.01)	0.02*** (0.01)	0.01 (0.01)	0.03*** (0.01)	0.02** (0.01)	0.01 (0.01)
MSCI <sub>t</sub>		0.08*** (0.01)	0.01*** (0.00)		0.09*** (0.02)	0.02*** (0.01)		0.09*** (0.02)	0.03*** (0.01)
Y <sub>t</sub>			0.88*** (0.02)			0.84*** (0.03)			0.81*** (0.04)
Obs.	13326	10104	9917	11733	9953	9728	10168	8775	8579
R <sup>2</sup>	0.22	0.26	0.78	0.20	0.23	0.63	0.18	0.22	0.57
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Table 6: Predicting future governance quality indicators.**

This table shows the regressions at the firm-year level of governance performance indicators in year  $t+1$ ,  $t+2$ , or  $t+3$  on the inside view of governance practices and the MSCI governance rating at year  $t$ . The dependent variable ( $Y$ ) is an indicator for internal control weaknesses in Panel A, the number of lawsuits related to accounting malpractices in Panel B, the number of shareholder activism filings in Panel C, Fortune's Best 100 indicator in Panel D, sales growth in Panel E, and Tobin's  $Q$  in Panel F. All regressions are Logit for indicator dependent variables, Poisson for count dependent variables, and OLS otherwise. All regressions control for Fama-French 48 industry fixed effects, year fixed effects, size, leverage, Tobin's  $Q$ , sales growth, ROA, and institutional ownership (all at year  $t$ ), except that some regressions predicting Tobin's  $Q$  (sales growth) do not control for Tobin's  $Q$  (sales growth). Panel G reports results of the 2SLS regressions in which I instrument the governance inside view by its 2- or 5-year lag, while controlling for industry\*year fixed effects and the compensation rating on Glassdoor, to address common endogeneity concerns. In these 2SLS regressions, Wald F Stat. denotes the Cragg-Donald Wald F-statistic for weak identification. Detailed variable descriptions are in Appendix B. All variables except for indicator variables and count variables are standardized to have a zero mean and a unit standard deviation. Standard errors (in parentheses) are clustered by firms.

**Panel A: Dependent variable ( $Y$ ) is Internal Control Weakness Indicator**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub><math>t</math></sub>	-0.18*** (0.05)	-0.16* (0.09)	-0.17* (0.09)	-0.16*** (0.06)	-0.20** (0.10)	-0.21** (0.10)	-0.16*** (0.06)	-0.02 (0.07)	-0.03 (0.07)
MSCI <sub><math>t</math></sub>		-0.03 (0.14)	-0.01 (0.13)		0.08 (0.14)	0.08 (0.14)		-0.08 (0.15)	-0.08 (0.16)
$Y_t$			2.10*** (0.27)			0.99*** (0.34)			0.64** (0.32)
Obs.	13157	5266	5266	11544	5096	5096	9992	4494	4494
Pseudo R <sup>2</sup>	0.10	0.16	0.20	0.09	0.14	0.15	0.09	0.13	0.13
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel B: Dependent variable ( $Y$ ) is Number of Accounting Malpractice Lawsuits**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub><math>t</math></sub>	-0.21** (0.10)	-0.28* (0.14)	-0.23* (0.14)	-0.08 (0.17)	-0.10 (0.25)	0.02 (0.23)	-0.16 (0.15)	-0.36 (0.25)	-0.31 (0.26)
MSCI <sub><math>t</math></sub>		-0.11 (0.12)	0.00 (0.13)		-0.06 (0.15)	0.01 (0.17)		-0.12 (0.15)	-0.05 (0.15)
$Y_t$			0.31*** (0.10)			0.40*** (0.10)			0.43*** (0.14)
Obs.	10105	3741	3741	8377	3129	3129	6736	2775	2775
Pseudo R <sup>2</sup>	0.23	0.32	0.34	0.13	0.25	0.28	0.11	0.25	0.27
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel C: Dependent variable (Y) is Number of Shareholder Activism Filings**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	-0.06** (0.03)	0.03 (0.04)	-0.00 (0.04)	-0.08*** (0.03)	-0.05 (0.04)	-0.07** (0.03)	-0.10*** (0.03)	-0.08* (0.04)	-0.09** (0.04)
MSCI <sub>t</sub>		0.06 (0.05)	0.07 (0.05)		-0.00 (0.05)	-0.00 (0.05)		0.01 (0.05)	0.01 (0.05)
Y <sub>t</sub>			0.35*** (0.02)			0.28*** (0.02)			0.21*** (0.02)
Obs.	13488	5593	5593	11918	5512	5512	10341	4893	4893
Pseudo R <sup>2</sup>	0.11	0.11	0.23	0.11	0.11	0.18	0.11	0.11	0.15
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel D: Dependent variable (Y) is Fortune Best 100 Indicator**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	0.53*** (0.08)	0.33*** (0.11)	0.13 (0.16)	0.57*** (0.09)	0.40*** (0.10)	0.38*** (0.15)	0.58*** (0.08)	0.40*** (0.09)	0.51*** (0.12)
MSCI <sub>t</sub>		0.25** (0.11)	0.23 (0.17)		0.29** (0.11)	0.34** (0.15)		0.21* (0.11)	0.17 (0.15)
Y <sub>t</sub>			7.18*** (0.51)			6.37*** (0.56)			5.96*** (0.56)
Obs.	10192	4050	4050	9040	3999	3999	7813	3467	3467
Pseudo R <sup>2</sup>	0.19	0.20	0.74	0.20	0.22	0.67	0.20	0.23	0.62
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel E: Dependent variable (Y) is Sales Growth**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	0.05*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.05*** (0.01)	0.02** (0.01)	0.02** (0.01)	0.03*** (0.01)	0.01 (0.01)	0.01 (0.01)
MSCI <sub>t</sub>		0.01 (0.01)	0.01 (0.01)		-0.00 (0.01)	-0.01 (0.01)		0.01 (0.01)	0.00 (0.01)
Y <sub>t</sub>			0.17*** (0.02)			0.01 (0.02)			0.10*** (0.02)
Obs.	13210	5622	5620	11599	5542	5539	10037	4866	4864
R <sup>2</sup>	0.21	0.22	0.25	0.17	0.18	0.18	0.15	0.16	0.17
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel F: Dependent variable (Y) is Tobin's Q**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )			Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )		
Inside view <sub>t</sub>	0.11*** (0.01)	0.06*** (0.01)	0.01 (0.01)	0.10*** (0.01)	0.06*** (0.01)	0.01 (0.01)	0.09*** (0.01)	0.05*** (0.01)	0.01 (0.01)
MSCI <sub>t</sub>		-0.03*** (0.01)	-0.00 (0.00)		-0.04*** (0.01)	-0.01* (0.01)		-0.02 (0.01)	-0.00 (0.01)
Y <sub>t</sub>			0.91*** (0.02)			0.88*** (0.05)			0.80*** (0.07)
Obs.	13326	5644	5522	11733	5585	5438	10168	4909	4792
R <sup>2</sup>	0.23	0.28	0.79	0.21	0.26	0.66	0.19	0.25	0.57
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel G: Addressing common endogeneity concerns in predicting Tobin's Q and sales growth**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Instrumenting inside view by its 2-year lag</i>				<i>Instrumenting inside view by its 5-year lag</i>			
	Tobin's Q <sub>t+1</sub>		Sales growth <sub>t+1</sub>		Tobin's Q <sub>t+1</sub>		Sales growth <sub>t+1</sub>	
Inside view <sub>t</sub>	.591*** (.103)	.512*** (.107)	.279*** (.075)	.249*** (.079)	.427*** (.138)	.354** (.14)	.282*** (.106)	.256** (.105)
Comp. rating <sub>t</sub>		.088* (.047)		.035 (.029)		.181*** (.065)		.047 (.044)
Observations	11133	11090	11660	11619	7570	7533	7902	7867
R-squared	.03	.091	.105	.125	.17	.203	.093	.108
Wald F stat.	214.559	186.598	213.015	188.374	118.428	115.396	121.057	118.310
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes
Industry*Year F.E.	no	yes	no	yes	no	yes	no	yes

*Standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

**Table 7: Do more ESG policies translate into a better inside view?**

This table shows the regressions at the firm-year level of the inside view at year  $t+1$  on a measure of E, S, or G policies in year  $t$ . Panels A, B, and C focus on the E, S, and G categories, respectively. The measure of ESG policies (*Policies*) is the number of E, S, or G-related strengths in the MSCI KLD dataset. Control variables include size (log of assets), leverage (total debt/assets), Tobin's Q, ROA, sales growth, and institutional ownership, all at year  $t$ . The industry fixed effects are based on the Fama-French 48 industry classifications. *Controversies* captures the number of concerns per ESG category in the MSCI KLD dataset. *High institutional ownership* is an indicator equaling one if a firm has an above-sample-median institutional ownership in a year and zero otherwise. Similarly defined are the indicator variables *High analyst coverage*, *High complexity*, *High advertising intensity*, and *High E, S, or G inside view*, where analyst coverage is the number of analysts following a firm in a year, complexity is a measure of organizational complexity as in Coles, Daniel, and Naveen (2008), and advertising intensity is the ratio of advertising over sales. Detailed variable descriptions are in Appendix B. In regressions with an interaction term, I control for the corresponding stand-alone variables, without showing them to save space. All variables are standardized to have a zero mean and a unit standard deviation. Standard errors (in parentheses) are clustered by firms.

**Panel A: Inside view of environmental practices**

	(1)	(2)	(3)	(4)	(5)	(6)
Policies	0.00 (0.01)	0.02 (0.02)	0.01 (0.10)	-0.01 (0.02)	-0.00 (0.02)	-0.02 (0.10)
Policies x High institutional ownership			-0.00 (0.03)			-0.07** (0.03)
Policies x High analyst coverage			0.06 (0.08)			0.08 (0.08)
Policies x High complexity			-0.04 (0.05)			-0.02 (0.05)
Policies x High advertising intensity			-0.03 (0.03)			-0.01 (0.04)
Policies x High E inside view			0.00 (0.01)			0.00 (0.01)
Controversies		0.01 (0.02)	0.01 (0.02)		0.04 (0.03)	0.04 (0.03)
Observations	11444	10432	10065	11297	10285	9920
R-squared	0.03	0.03	0.04	0.19	0.19	0.20
Industry & year FE	yes	yes	yes	yes	yes	yes
Firm FE	no	no	no	yes	yes	yes
Controls	no	yes	yes	no	yes	yes

**Panel B: Inside view of social practices**

	(1)	(2)	(3)	(4)	(5)	(6)
Policies	0.08*** (0.01)	0.07*** (0.01)	0.02 (0.04)	-0.00 (0.02)	-0.01 (0.02)	-0.09 (0.05)
Policies x High institutional ownership			0.07*** (0.02)			0.06** (0.02)
Policies x High analyst coverage			0.03 (0.04)			0.09* (0.05)
Policies x High complexity			0.01 (0.03)			0.01 (0.04)
Policies x High advertising intensity			-0.02 (0.02)			-0.06** (0.03)
Policies x High S inside view			0.01 (0.01)			0.03*** (0.01)
Controversies		-0.06*** (0.01)	-0.04*** (0.01)		-0.03 (0.02)	-0.02 (0.02)
Observations	11449	10438	10071	11306	10295	9930
R-squared	0.03	0.03	0.05	0.22	0.23	0.25
Industry & year FE	yes	yes	yes	yes	yes	yes
Firm FE	no	no	no	yes	yes	yes
Controls	no	yes	yes	no	yes	yes

**Panel C: Inside view of governance practices**

	(1)	(2)	(3)	(4)	(5)	(6)
Policies	0.03** (0.01)	0.01 (0.01)	-0.05 (0.05)	0.02 (0.01)	0.02 (0.02)	0.03 (0.06)
Policies x High institutional ownership			0.01 (0.03)			-0.01 (0.03)
Policies x High analyst coverage			0.09* (0.05)			0.02 (0.06)
Policies x High complexity			-0.06* (0.03)			-0.03 (0.04)
Policies x High advertising intensity			0.02 (0.02)			0.00 (0.03)
Policies x High G inside view			-0.01 (0.01)			0.00 (0.01)
Controversies		-0.03** (0.01)	-0.02* (0.01)		-0.02 (0.02)	-0.02 (0.02)
Observations	6588	5920	5566	6436	5761	5397
R-squared	0.03	0.04	0.07	0.30	0.30	0.33
Industry & year FE	yes	yes	yes	yes	yes	yes
Firm FE	no	no	no	yes	yes	yes
Controls	no	yes	yes	no	yes	yes

**Table 8: Do employees view ESG practices to improve after the Business Roundtable**

In this table, I present coefficient estimates from cross-sectional regressions in which the dependent variable is the change in employees' view of E, S, or G practices between 2018 and 2020, i.e., before and after a firm signed the Business Roundtable's new statement that emphasizes a corporation's purpose is to serve all stakeholders rather than just shareholders. The explanatory variables are *BRT*, an indicator for whether a firm signed the Business Roundtable's statement in 2019, and firm characteristics as controls, including size (log of total assets), market-to-book ratio of assets (Tobin's *Q*), ROA, leverage, and sales growth, all measured in 2018. All regressions include Fama-French 48 industry fixed effects. In some specifications, I allow the *BRT* indicator to interact with indicators of whether a firm has above-sample-median institutional ownership, analyst coverage, organizational complexity, or advertising intensity during 2014-2018. In Panel A, I show the results for the full sample. In Panel B, I perform the same regression for different subsamples: samples of firms with a high or low (above or not above median) E, S, or G inside view in 2018. Robust standard errors, clustered at the industry level, are reported in parentheses.

**Panel A: Change in ESG inside view – full sample**

	(1) E	(2) S	(3) G	(4) E	(5) S	(6) G
BRT	-0.12 (0.17)	-0.04 (0.12)	0.01 (0.11)	1.19*** (0.31)	0.75** (0.30)	0.08 (0.25)
BRT x High institutional ownership				0.22 (0.29)	0.06 (0.29)	0.01 (0.23)
BRT x High analyst coverage				-0.09 (0.32)	-0.56 (0.40)	0.16 (0.33)
BRT x High complexity				-1.30*** (0.26)	-0.41 (0.49)	-0.22 (0.34)
BRT x High advertising intensity				-0.17 (0.29)	0.36 (0.30)	0.01 (0.26)
BRT x High COVID exposure				0.16 (0.30)	-0.12 (0.39)	0.18 (0.23)
Observations	1022	1022	1022	880	880	880
R-squared	0.07	0.04	0.06	0.08	0.06	0.07
Controls	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes

**Panel B: Change in ESG inside view – sub-sample by prior ESG inside view**

	(1) High E	(2) Low E	(3) High S	(4) Low S	(5) High G	(6) Low G
BRT	0.02 (0.19)	-0.40 (0.24)	0.19 (0.21)	0.01 (0.14)	0.06 (0.13)	0.05 (0.14)
Observations	665	349	300	713	452	565
R-squared	0.23	0.17	0.17	0.07	0.10	0.14
Controls	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes

*Standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$



**Table 9: Do employees view ESG practices to improve after firms join the UN Compact?**

In this table, I present coefficient estimates from regressions in which the dependent variable is the change in the average E, S, or G inside view 3 years before to 3 years after a firm joins the UN Global Compact. The main explanatory variable is an indicator (*UNGC*) equaling one for firms that join the UN Global Compact, and zero for control firms. In some specifications, I allow the *UNGC* indicator to interact with indicators of whether a firm has a high average institutional ownership, analyst coverage, organizational complexity, or advertising intensity in the three years before joining the UNGC. I select up to 10 control firms for each firm that ever joins the UNGC based on the propensity score estimated using a logit model with the following covariates: lagged ESG inside views and other firm characteristics (size, ROA, leverage, sales growth, Tobin's Q, and institutional ownership). I require that control firms belong to the same year and Fama-French 48 industry classification with the UNGC firm and that the gap between the propensity score of the UNGC firm and that of any control firm be smaller than 0.1 (i.e., caliper is 0.1). If a firm is selected as a control firm in multiple years, I keep only the first year as a pseudo-treatment year for that control firm. All regressions include Fama-French 48 industry fixed effects. Control variables, when included, are size, ROA, leverage, sales growth, Tobin's Q, and institutional ownership. In Panel A, I show the results for the full sample. In Panel B, I perform the same regression for different subsamples: samples of firms with a high or low (above or not above median) E, S, or G view by employees before a firm joins the UNGC. Robust standard errors, clustered at the industry level, are reported in parentheses.

**Panel A: Change in ESG inside view – full-sample**

	(1) E	(2) S	(3) G	(4) E	(5) S	(6) G	(7) E	(8) S	(9) G
UNGC	-0.20 (0.13)	0.17*** (0.05)	0.20* (0.10)	-0.19 (0.13)	0.11* (0.06)	0.17 (0.10)	-0.37 (0.27)	0.14 (0.20)	0.66* (0.33)
x High inst. ownership							0.08 (0.19)	-0.11 (0.17)	-0.41** (0.18)
x High analyst coverage							-0.14 (0.29)	-0.06 (0.12)	-0.21 (0.23)
x High complexity							0.30 (0.32)	-0.11 (0.11)	-0.21 (0.22)
x High advertising intensity							0.06 (0.18)	0.26* (0.13)	-0.07 (0.15)
Observations	632	632	632	632	632	632	632	632	632
R-squared	0.07	0.10	0.10	0.08	0.13	0.14	0.08	0.14	0.16
Controls	no	no	no	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel B: Change in ESG inside view – sub-sample by prior ESG inside view**

	(1) High E	(2) Low E	(3) High S	(4) Low S	(5) High G	(6) Low G
UNGC	-0.15 (0.14)	-0.20 (0.16)	0.29*** (0.09)	-0.09 (0.06)	0.09 (0.15)	0.21* (0.11)
Observations	232	397	290	342	286	344
R-squared	0.24	0.20	0.30	0.20	0.30	0.18
Controls	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes

*Standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

**Table 10: Do employees view ESG practices to improve after a court ruling?**

This table examines how the employees' inside view of E, S, and G practices (Panel A) and performance metrics (Panel B) changed in firms headquartered in the states covered by the Seventh Circuit Court (treated firms) relative to other US firms (control firms) around the court ruling in July 2013 that increased the risk of discrimination lawsuits for the treated firms, as described in Section 5. I restrict the sample to firm-years with at least 10 reviews. The results are similar with a higher cutoff like 15, 20, or 28 (sample median) reviews. Here, I regress the inside view on different ESG categories on the interactions between the *Treat* indicator (for treated firms) and different time indicators: *Post(t)* for the year 2013, *Post(t+1)* for the year 2014, *Post(t+2)* for the year 2015, and *Post(t+3)* for the years 2016 onwards. I also test for pre-trends by interacting the *Treat* indicator with indicators for the years before 2013: *Pre(t-2)* to *Pre(t-3)*. The indicator for the year t-1, or 2012, is omitted because 2012 is chosen as the reference year for the related regressions. The indicator *Post* without a time subscript equals one for any years since 2013 and zero for the years before that. All regressions include a constant, firm fixed effects, and year fixed effects. Detailed variable definitions are in the Internet Appendix IA3. Standard errors, clustered at the state level, are reported in parentheses.

**Panel A: The inside views after the court ruling**

	(1) E	(2) E	(3) E	(4) S	(5) S	(6) S	(7) G	(8) G	(9) G
Treat * Post	-0.02 (0.03)			0.09*** (0.03)			-0.06 (0.07)		
Treat * Post (t)		0.07 (0.05)	0.10 (0.11)		0.21*** (0.07)	0.18*** (0.05)		-0.24*** (0.07)	-0.31*** (0.08)
Treat * Post (t+1)		0.02 (0.04)	0.05 (0.10)		0.05 (0.08)	0.02 (0.06)		0.05 (0.06)	-0.01 (0.07)
Treat * Post (t+2)		-0.13 (0.10)	-0.10 (0.06)		0.12*** (0.03)	0.09*** (0.03)		-0.09 (0.08)	-0.15* (0.08)
Treat * Post (t+3)		-0.03 (0.04)	-0.00 (0.06)		0.06* (0.04)	0.03 (0.05)		-0.04 (0.07)	-0.11 (0.08)
Treat * Pre (t-3)			0.05 (0.11)			-0.05 (0.08)			-0.11 (0.07)
Treat * Pre (t-2)			0.03 (0.08)			-0.05 (0.06)			-0.08 (0.06)
Observations	16353	16353	16353	16353	16353	16353	16353	16353	16353
R-squared	0.21	0.21	0.21	0.29	0.29	0.29	0.41	0.41	0.41
Controls	No	No	No	No	No	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

**Panel B: Financial performance after the court ruling**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Tobin's Q			Sales growth			Return on assets		
Treat * Post	-0.06 (0.05)			0.00 (0.06)			0.01 (0.03)		
Treat * Post (t)		-0.03 (0.05)	-0.02 (0.04)		0.02 (0.07)	0.07 (0.06)		0.02 (0.03)	0.01 (0.05)
Treat * Post (t+1)		-0.07* (0.04)	-0.06* (0.04)		-0.08 (0.05)	-0.02 (0.07)		0.01 (0.04)	-0.00 (0.05)
Treat * Post (t+2)		-0.08 (0.06)	-0.08** (0.04)		-0.01 (0.06)	0.04 (0.08)		0.00 (0.04)	-0.01 (0.04)
Treat * Post (t+3)		-0.07 (0.06)	-0.06 (0.05)		0.02 (0.07)	0.07 (0.08)		0.00 (0.04)	-0.01 (0.05)
Treat * Pre (t-3)			-0.00 (0.04)			0.04 (0.08)			-0.02 (0.07)
Treat * Pre (t-2)			0.05 (0.06)			0.16* (0.10)			-0.01 (0.03)
Observations	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
R-squared									
Controls	No	No	No	No	No	No	No	No	No
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

## INTERNET APPENDIX

### IA1: Hypothesis Development and Economic Framework

#### Can employee reviews provide useful information about ESG practices?

Companies have an incentive to appear ESG-friendly given the recent trend in sustainable investing. Globally, 36% of all professionally managed assets was invested according to some ESG criteria in 2020.<sup>21</sup> The sustainable investing industry has become so large that, globally, over 600 agencies were rating firms on ESG issues in 2018 (Wong, Brackley, and Peto (2019)), creating an even more direct incentive for firms to appear more ESG-friendly.

Given such an incentive, existing ESG ratings likely suffer from a greenwashing bias, especially when most ESG ratings rely on data sources that firms can influence, such as corporate ESG reports, annual reports, and news (Douglas, Van Holt, and Whelan (2017)). For example, firms can inflate ratings by emphasizing immaterial ESG practices like charity donations, while neglecting costlier practices, such as diversity. Worse yet, ESG rating agencies often involve the rated firm in the rating process, further enabling the firm to influence its ratings. For instance, Dow Jones Sustainability Index provides companies with “feedback to help them improve and enhance their score and performance.”<sup>22</sup> Empirically, Chen (2022) documents a positive correlation between firms hiring green communication specialists and higher environmental ratings.

The corporate greenwashing bias, however, is less likely to affect employees’ inside view of ESG practices. A firm’s employees have little incentive to greenwash its ESG image, especially under anonymity. Anonymous employees could share sensitive information, such as harassment or frauds without fear of retaliation. In addition, employees could have information about ESG practices because firms may design ESG policies with employees as an intended audience (Shapira (2011)). Empirically, Campbell and Shang (2021) show that employee reviews predict corporate misconduct. Thus, the employees’ inside view could be useful in evaluating whether firms walk the ESG talk, in a way that an outside view could not.

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<sup>21</sup> Source: <http://www.gsi-alliance.org/>.

<sup>22</sup> See <https://corpgov.law.harvard.edu/2017/07/27/esg-reports-and-ratings-what-they-are-why-they-matter/>.

In addition, a growing literature demonstrates that employee reviews contain substantial fundamental information about firms. Edmans (2011) shows that employees-voted Best 100 Companies to Work For exhibit significantly more positive earnings surprises and earn significant abnormal returns, an annual four-factor alpha of 3.5% from 1984 to 2009. Green et al. (2019) show that sorting firms based on quarterly changes in Glassdoor ratings could earn a four-factor alpha of 0.78% per month, or 9.8% annually. Sophisticated investors, such as hedge funds, appear to trade using Glassdoor ratings (Sheng (2019)). Welch and Yoon (2020) show that sorting on both Glassdoor ratings and ESG scores improves abnormal returns even further.

Since employee reviews contain information about a firm's fundamentals, they could also contain meaningful information about the firm's ESG practices. This is especially true for S issues because employees are a major stakeholder in a firm and their satisfaction is a key social issue. The mere presence of employee reviews has been shown to induce firms to improve corporate social policies (Dube and Zhu (2021)). For governance, employee reviews could be informative too because employees observe their firms' governance daily. On these two dimensions, employee reviews likely add information to the existing ESG ratings. On the E dimension, however, it is unclear if employee reviews could add much information since the existing E ratings incorporate quantitative data from regulatory agencies, such as the Environmental Protection Agency (EPA).

Taken together, it is an empirical question whether the inside view adds significant information to the existing ESG ratings. I expect, however, that it is more likely to add information on the S and G dimensions than on the E dimension. Formally stated, the hypotheses I test are as follows:

***H1a:*** *The inside view does not add significant information to the existing ratings in predicting future indicators of environmental performance.*

***H1b:*** *The inside view adds significant information to the existing ratings in predicting future indicators of social performance.*

***H1c:*** *The inside view adds significant information to the existing ratings in predicting future indicators of governance quality.*

### **Do companies walk the talk about ESG practices?**

Given the recent trend in ESG investing, companies have talked increasingly more about their commitments to ESG practices. These commitments, however, might be cheap talk. Raghunandan and Rajgopal (2020) study the firms that signed the Business Roundtable's 2019 letter stating a commitment to all stakeholders rather than just shareholders, and find that that these firms committed more misconduct than their peers before 2019. Yang (2019) finds that a high E or S rating does not predict a lower frequency of negative news related to E or S issues. Focusing on a specific ESG issue, Huang and Lu (2022) find that firms with a larger gender pay gap often disclose more about gender diversity issues and have a higher S rating. Focusing on merger transactions, Bebchuk, Kastiel, and Tallarita (2020) show that corporate leaders often negotiate to obtain gains for shareholders, executives, and directors, but not other stakeholders. Finally, Kacperczyk and Peydro (2021) document that after banks cut lending to high-emissions firms, these firms improve their communications on E issues but show little change in E expenditures and emissions.

Nonetheless, there are reasons for companies to genuinely want to follow through with their ESG commitments. For G commitments, as Larcker and Tayan (2019) define, good governance "improves decision making and reduces the likelihood of poor outcomes..." For E and S, companies have an incentive to do good because corporate social responsibility can pay off financially (Edmans (2021)). For example, Edmans (2011) shows that firms with better employee satisfaction have higher future financial performance, while Flammer (2015) documents that a firm's performance improves after the firm adopts E and S shareholder proposals. Similarly, Schiller (2017) shows that a firm's financial performance improves after its E&S policies improve due to regulations in the firm's global supply chains. Furthermore, Ferrell, Liang, and Renneboog (2016) show that well-governed firms invest more in E&S activities, suggesting that these activities are consistent with value maximization. Finally, Hoepner et al. (2020) show that a firm's downside risk declines after investors' ESG engagement with the firm, while Lins, Servaes, and Tamayo (2017) show that ESG-friendly firms were more resilient during the 2008 financial crisis.

However, even when a firm's leaders truly want to follow through with their ESG commitments, these commitments might not permeate the firm. For example, Gorton and Zentefis

(2020) theorize that a firm's corporate culture, a key ESG issue, depends on its entire history, making culture hard to change. Empirically, Durand and Jacqueminet (2015) show that a firm's subsidiaries often do not implement its top-down ESG policies. Thus, it is an empirical question whether firms follow through on their ESG commitments. Formally stated, the null hypothesis is:

***H2a:*** *When a firm discloses a commitment to ESG practices, its ESG practices do not improve relative to the ESG practices of a comparable firm that does not state a similar commitment.*

The alternative hypothesis could hold or not depending on factors affecting firms' greenwashing decision. In the model of Pástor, Stambaugh, and Taylor (2020), a firm trades off the costs and the benefits of improving its ESG image to arrive at an optimal amount of investment in ESG practices. Although the model does not distinguish between greenwashing and a genuine ESG commitment, it suggests that a firm would choose greenwashing if the cost of greenwashing is low or the benefit of greenwashing is high, relative to following through with the commitment.

The relative cost of greenwashing might be low in several cases. First, when a firm operates in an opaque information environment, like one with few analysts or institutional investors monitoring the firm, the chance of detecting greenwashing is low. Second, when a firm is complex, greenwashing is likely easier than truly transforming the firm's ESG practices. Third, when an ESG commitment involves no external party's verification, the cost of non-compliance is low. In these cases, a firm is less likely to follow through with its ESG commitment. More monitoring from analysts and investors, however, could create more pressure for a firm to greenwash its image.

The relative benefit of greenwashing might be high when the firm advertises a lot about ESG issues, allowing its greenwashing to influence many external stakeholders: customers and shareholders. This logic predicts that firms with more advertising might greenwash more. However, a high advertising intensity could proxy for the importance of customer relations, which motivates firms to care more for customers, a key stakeholder. Thus, it is an empirical question whether firms greenwash more when they advertise more. Overall, I test the following hypothesis:

***H2b:*** *A firm is less likely to follow through with its ESG commitment when the firm has low analyst coverage, low institutional ownership, high complexity, low compliance cost, and high advertising.*

### **IA2: Sample construction and merging across datasets.**

I start with the list of 7,851 US-headquartered companies with at least 100 reviews on Glassdoor as of July 2020. For each firm on Glassdoor, there is a unique Glassdoor ID. Firms' tickers and names help me match these unique Glassdoor IDs to other databases. I then match these Glassdoor IDs to the companies available on Compustat during 2008-2020 using stock tickers, when available, and company names. There are 1,780 firms with a unique stock ticker in the Glassdoor dataset. For firms without a unique stock ticker, I conduct fuzzy matching based on names using the *matchit* package in Stata. To improve matching quality, I remove common string patterns, such as Inc., Co., Limited, ... I manually verify the matches and keep only the matches with above 95% similarity. Matching on names, however, sometimes creates multiple CUSIP matches for each Glassdoor ID in some year. In these cases (below 70 observations), I keep only the CUSIP for which the associated firm has the highest total asset.

Similarly, I match my firm-year data with the MSCI KLD dataset using tickers and names. Around 70% of US firms in the MSCI dataset during 2008-2018 have a unique ticker. For these firms, I exact-match them with firms in my Glassdoor-Compustat dataset. For the other 30% of firms and firms that cannot be matched to a Glassdoor firm based on ticker, I conduct a fuzzy match based on names using the *matchit* package in Stata. To improve matching quality, I remove common string patterns among company names, such as Corp., Inc., Co., Limited, Holdings...I manually verify the matches and decide to keep only the matches with above 89% similarity. I allow for a smaller cutoff here because manual inspection of the matches reveals that the matching quality is still high up to that cutoff point.



### IA3: Variable description

This table shows detailed description for variables used in my analyses. All variables are at the firm-year level.


Variable	Definition	Source
No. of reviews	The number of reviews per firm-year	Glassdoor
Inside view (E, S, or G)	At the review level, it is the percentage of environmental, social, or governance key words in the pros section minus the percentage of environmental, social, or governance key words in the cons section in the review, respectively; Averaging this measure across all reviews in a firm-year gives the inside view (E, S, or G) at the firm-year level.	Glassdoor
MSCI (rating E, S, or G)	The number of environmental, social, or governance strengths minus the number of E, S, or G concerns per firm-year	MSCI
Policies (E, S, or G)	The number of environmental, social, or governance strengths per firm-year in the MSCI KLD dataset	MSCI
Controversies (E, S, or G)	The number of environmental, social, or governance concerns or controversies per firm-year in the MSCI KLD dataset	MSCI
BRT	An indicator equaling 1 for firms whose CEOs signed the Business Roundtable statement in 2019	BRT website
UNGC	An indicator equaling 1 for firm-years during which a firm is a member of the UN Global Compact	UNGC website
E violation indicator	An indicator equaling 1 if a firm has a settlement of an environmental violation in a year. I classify a violation as environmental if Violation Tracker deems it as an environment-related offense or a safety-related offense with the following agencies: NRC, DOE, and FDA.	Violation tracker
S violation indicator	An indicator equaling 1 if a firm has a settlement of a social violation in a year. I classify a violation as social if Violation Tracker deems it as consumer-protection-related, employment-related, healthcare-related, or safety-related (excluding cases involving NRC, DOE, and FDA).	Violation tracker
E violation penalty to sales	The penalty in dollar terms due to environmental violation(s) in a year, scaled by sales in million dollars.	Violation tracker
S violation penalty to sales	The penalty in dollar terms due to social violation(s) in a year, scaled by sales in million dollars.	Violation tracker
Carbon emission / sales	Total CO2 Equivalent Emissions to Revenues USD in millions	Asset4 (Refinitiv)
Fortune Best 100 indicator	An indicator equaling one if a firm belongs to Fortune's Best 100 Companies to Work For in a year	Alex Edman's website
IC weakness indicator	An indicator equaling one if a firm's auditor reports that the firm has at least one internal control weakness over financial reporting in a year	Audit Analytics
Number of IC weaknesses	The number of internal control weaknesses reported by a firm's auditor in a year	Audit Analytics

Variable	Definition	Source
Number of accounting malpractice lawsuits	The number of class-action lawsuits that Audit Analytics classifies as related to accounting malpractices (category number 2) that a firm faces in a year	Audit Analytics
Number of shareholder activism filings	The number of Forms 13D filed with a firm in a year for which Audit Analytics classifies as concern, dispute, control, or discussion (following Klein and Zur (2009), Guo et al. (2021))	Audit Analytics
Downside volatility	The standard deviation of daily returns that are negative in year for a firm's stock	CRSP
Tail risk	The average absolute value of the 5% lowest daily returns in a year for a firm's stock	CRSP
Size (log assets)	Logarithm of a firm's total assets in millions, the latest accounting number available in a year	Compustat
Tobin's Q	(total assets - book equity - current liabilities + market equity)/total assets; or (at-ceq-txdtc+mkvalt)/at	Compustat
ROA (return on assets)	EBITDA/lagged assets	Compustat
Leverage	Total liabilities over total assets; or lt/at	Compustat
R&D	Research and Development expense (xrd) over total assets, and zero if missing xrd.	Compustat
Sale growth	The change in the logarithm of a firm's net sales in a year relative to its lag	Compustat
Institutional Ownership	The sum of dollar value of institutional ownership, divided by the sum of market value across securities per firm-year	Thomson Reuters 13F
High institutional ownership	An indicator equaling one if a firm has an above-sample-median institutional ownership in a year and zero otherwise.	Thomson Reuters 13F
High analyst coverage	An indicator equaling one if a firm has an above-sample-median analyst coverage in a year and zero otherwise; where analyst coverage is the number of unique analysts making at least one earnings forecast for the firm in that year.	I/B/E/S
High complexity	An indicator equaling one if a firm has an above-sample-median complexity score in a year and zero otherwise; where the complexity score is the first factor in a factor analysis of business segments, natural logarithm of sales, and leverage (see Coles, Daniel, and Naveen, 2008).	Compustat; Compustat Segments
High advertising intensity	An indicator equaling one if a firm has an above-sample-median advertising over sales in a year and zero otherwise; firm-years with missing advertising data is assumed to have zero advertising.	Compustat
High COVID exposure	An indicator equaling one if a firm belongs to a NAICS-3-digit industry with a COVID exposure score above median across industries; where the COVID exposure score is the communication_interact_share score provided by Koren and Peto (2020).	Koren and Peto (2020)

#### IA4: Glassdoor review data

This appendix has two panels. Panel A shows an example of a Glassdoor review. Panel B shows the types of employers with at least one review on Glassdoor as of July 25, 2020.

##### Panel A: example review of Amazon



### "Hit or miss"

3.0 ★ ★ ★ ★ ★ ▼ Current Employee - Delivery Driver in Austin, TX

Work/Life Balance

★ ★ ★ ★ ★

Culture & Values

★ ★ ★ ★ ★

Diversity & Inclusion

★ ★ ★ ★ ★

Career Opportunities

★ ★ ★ ★ ★

Compensation and Benefits

★ ★ ★ ★ ★

Senior Management

★ ★ ★ ★ ★

☒ Recommends

☒ Positive Outlook

☒ Approves of CEO

I have been working at Amazon full-time

**Pros**

The atmosphere is overall pretty good.

**Cons**

**Long hours**, management not on the same page. Cut corners as far as safety is concerned.

**Advice to Management**

Please listen to employees ideas more.

##### Panel B: Types of employers reviewed on Glassdoor

	At least 1 review	At least 10 reviews
Company - Private	197,992	58,834
Company - Public	31,131	9,804
Nonprofit	19,853	6,221
Subsidiary/Segment	8,205	4,835
Government	7,235	2,560
Private Practice	6,508	1,088
School	5,592	1,271
College	3,790	2,629
Contract	3,464	594
Franchise	3,020	852
Hospital	2,614	1,253
Self-employed	1,127	88
Other Organization	4,470	829
Unknown	6,550	1,105
<b>Total</b>	<b>301,551</b>	<b>91,963</b>

### **IA5: Training the word2vec model**

Before feeding the reviews into the word2vec model, I apply several preprocessing steps to clean the raw reviews. First, I convert each review into its lower-case form and remove all punctuations. Second, I convert each review into a list of individual words. Third, I apply lemmatization on each word, a common practice in natural language processing to convert each word into its standard dictionary form. Fourth, I use the Python package *Spacy* to remove from all reviews any digits and stop words, such as a, an, the, too, all..., which do not convey much meaning. Finally, I identify commonly used two-word phrases (bigrams) in my reviews using the *Phraser* module of the *Genism* library in Python. For each two-word phrase, I concatenate the two words and treat them as a single word and only retain a phrase in my corpus if it appears at least 50 times in all reviews. All these steps follow Li et al. (2020) except that I only model bigrams instead of trigrams to reduce computational costs.

Next, I train the word2vec model by employing all the 10.4 million English reviews available in my data. Each review contains a pro section and a con section, so my input into the word2vec model includes 20.8 million units of text. I follow all the default settings of word2vec in training my model, except that I set the vector size to be 300 and the number of iterations over the training data (epochs) to be 20 as in Li et al. (2020).

Besides using the word2vec model to find words that are most similar to ESG categories, I use the model to classify employees into high-ranked and low-ranked employees in one robustness test. Specifically, I classify employees who write a review into high and low ranks based on their titles. I do so by comparing how similar an employee's title is to a list of high-ranked job titles relative to a list of low-ranked job titles, both are from Glassdoor's official guide to the hierarchy of job titles, available at <https://www.glassdoor.com/blog/guide/hierarchy-of-job-titles/>. I group C-suite titles and manager titles into the high-ranked list, and individual contributors and entry-level titles into the low-ranked list. I then transform each title into bigrams or unigrams and only keep those that are in my word2vec model's vocabulary. Then, I calculate the average vector representing all the remaining words in each list. I then compare the two vectors representing the low-ranked and the high-ranked job titles to the average vector representing words in an employee

title to decide if the employee title indicates a high-ranked employee. If an employee's title is anonymous or unknown, I deem the employee to be low-ranked.

I find that 17% of reviews were written by a high-ranked employee. Removing these reviews changes the inside view measure little, with the resulting measure having a correlation of above 0.93 with the baseline measure.

#### **IA6: Employees' attention to ESG issues over time**

Given the recent rise in ESG investing, employees are likely to mention ESG catchphrases more over time. Figure IA1a shows that to be the case. The frequency of *ESG*, *CSR*, *sustainable*, and *sustainability*, while small, has increased significantly between 2008 and 2021. The word *ESG* alone did not even appear in employee reviews until 2015.

However, employees' attention to ESG issues more broadly, as captured by my comprehensive ESG dictionaries, might not show an increasing trend over time. A firm's employees are likely to have always cared about many ESG issues like employee treatment and business ethics, regardless of whether the firm's investors care about these issues. Indeed, Figure IA1b shows that the overall attention to ESG issues by employees has remained rather stable over time. One alternative explanation could be that my ESG dictionaries over-represent ESG words often used in the earlier period relative to the later period, leading to the flattening of the otherwise increasing trend in the employees' attention to ESG issues. Nonetheless, when I train my model on only reviews in the later period (2015-2021), the resulting ESG dictionaries overlap 94.4% with the baseline dictionaries. By contrast, consistent with the employees' stable attention to ESG issues over time, I find in un-tabulated tests that the employees' inside view predicts future ESG performance indicators in both the earlier and the later sample periods.

Despite its overall flat trend, the employees' attention spiked around major ESG events. The attention to E issues was the highest in 2008 when Barrack Obama, who promised to reform environmental law enforcement, won the U.S. Presidential Election. The attention to E issues was also high in 2015 when world leaders signed the Paris Agreement, an international treaty on climate change. On S issues, the most noticeable spikes were in 2020 when the Global Pandemic

first hit the US and again when the death of George Floyd raised massive racial protests in the country. Finally, about governance, the most noticeable spikes were during the 2008 Financial Crisis and 2020 Pandemic when companies' governance was put to the test. In unreported graphs that zoom in at higher frequencies, I find that the ESG attention fits the timing of these ESG events.

#### **IA7: Predicting downside risk.**

Prior research has shown a negative link between a firm's environmental and social performance and its risk. This literature includes Luo and Bhattacharya (2009), Godfrey, Merrill, and Hansen (2009), Jo and Na (2012), Oikonomou, Brooks, and Pavelin (2012), Albuquerque, Koskinen, and Zhang (2019), Hoepner et al. (2020). On governance, many papers show that better governance is associated with lower realized risk but focus on different aspects of governance, such as managerial ownership (Himmelberg, Hubbard, and Palia (1999)), board composition (Bernile, Bhagwat, and Yonker (2018)), and risk management (Ellul and Yerramilli (2013)). So, if the inside view reflects a firm's ESG practices, a higher inside view likely predicts a lower downside risk.

Following Hoepner et al. (2020), I capture downside risk using two measures. The first is downside volatility, or the standard deviation of daily returns that are negative during a year. The second is tail risk, or the average absolute value of the lowest 5% of daily returns during a year.

Table IA4 shows the results of regressing a firm's future downside risk on its ESG inside views and MSCI ESG ratings, while controlling for other firm characteristics (including leverage and R&D as proxies for risk-taking), lagged downside risk, and industry and year fixed effects. In Panel A, where the dependent variable is downside volatility, while the coefficients on the E, S, and G inside views are all negative, only the coefficient on the G inside view is economically distinguishable from zero (-0.02 in column 1) and significant at the 1% level after controlling for the lagged downside volatility. By contrast, the coefficient on the MSCI rating is negative and statistically significant only for the E category (-0.01 in column 2). These results imply that the inside views and the MSCI ratings contain different information about a firm's downside risk. In fact, the coefficients on the MSCI E rating and the G inside view remain significant at the 5% level after controlling for each other in predicting downside volatility one year ahead (column 3).

Over two or three years ahead (columns 4 to 9), however, the predictive power of the MSCI rating disappears while that of the inside view remains, implying that the inside view captures longer-lasting information about downside risk. All the results hold similarly with the tail risk measure (Panel B). In un-tabulated analyses, I find similar results for other measures of risk, including total volatility and upside risk, and the results with downside risk hold after controlling for total volatility. These findings imply that good ESG practices act as a stabilizer, as they reduce not just a firm's total volatility, but also both its upside and downside components.

#### **IA8: An inside view of a narrower ESG issue: diversity and inclusion**

To measure an inside view of a firm's diversity and inclusion (D&I) practices, I follow all the steps of measuring the inside view of ESG practices, unless stated otherwise. First, I specify the seed words for the D&I topic to include *diversity*, *inclusion*, *discrimination*, *inequality*, and words with the same roots, such as *diverse*, *inclusive*, and *discriminating*. The main results in my paper do not change significantly if I omit *discrimination*, *inequality*, and their related words, or if I keep the seed word lists separately for D&I and discrimination/inequality. Since the seed word list of each ESG topic has 50 words, I expand the D&I seed word list to the 50 most similar words using Google's own word2vec model pretrained on a news dataset.<sup>23</sup> From this expanded seed word list for the D&I topic, I use my word2vec model, trained on 10.4 million employee reviews, to find the top 500 most similar words to be by final dictionary of D&I key words. With the D&I dictionary, I count D&I words in my reviews and average the D&I word frequency in the pros relative to the cons sections across reviews per firm-year to calculate my measure of the D&I inside view.

I find that the rank correlation between the D&I inside view and the D&I ratings from Refinitiv and MSCI to be low, at 0.19 and 0.10, respectively. With a regression framework similar to that in Table 8 in the main paper, Table IA4 shows that a firm's D&I policies, captured by MSCI's count of the strengths in the policies related to diversity management, have a weak association

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<sup>23</sup> <https://drive.google.com/file/d/0B7XkCwpI5KDYNINUTTISS21pQmM/edit?usp=sharing>

with the inside view on D&I practices. The coefficient on *Policies* is small across columns, only statistically significant at the 5% level in two columns, and reverses its sign with firm fixed effects.

### **IA9: Do firms walk the ESG talk after a cyber-attack**

I study cyber-attacks as an exogenous shock to a firm's incentive to improve its ESG image. Akey et al. (2021) argue that a cyber-attack and especially its timing are likely exogenous to a firm. They show that after controlling for industry-year and firm fixed effects, "observable characteristics cannot reliably predict which firms will experience data breaches" (p. 29). Thus, it is unlikely that a firm can anticipate or control when it might get a cyber-attack. Moreover, Akey et al. (2021) document that attacked firms attempt to recover their reputation by improving their E&S policies, such as increasing charity donations, while Kamiya et al. (2021) show that those firms subsequently improve their risk management policies, a dimension of governance.

While the literature shows that a firm improves its ESG policies after a cyber-attack, the improvement in ESG policies might not permeate the firm. If the firm simply donates more to charities to greenwash its reputation, then I expect no change in how its employees view its ESG practices after the attack. However, if the firm truly wants to transform its ESG practices, the employees' inside view could improve after the attack. This is more likely for the governance category because an attacked firm likely wants to truly improve its risk management, a governance issue, as doing so can improve the firm's response to future attacks. A cyber-attack could also distract a firm from issues like pollution and discrimination, leading to a lower E&S inside view.

To investigate these hypotheses, I conduct a difference-in-differences analysis comparing how the inside view changes differently after an attack in attacked relative to non-attacked firms. I collect the list of 165 cyber-attacks from Kamiya et al. (2021) for which the authors find no confounding events by searching related news. Then I identify control firms using propensity score matching based on the following characteristics measured at the year before an attack: size, Tobin's Q, ROA, leverage, sales growth, institutional ownership, and the E, S, and G inside views. I match with replacement each attacked firm with up to 10 control firms with the closest propensity



score within a caliper of 0.1 in the same year and industry.<sup>24</sup> Once I have a sample of attacked firms and control firms in the three years before and after an attack, I regress the inside view measures on a *Post* indicator for each attacked firm in the years after the attack while controlling for firm and industry-year fixed effects, as in Kamiya et al. (2021) and Akey et al. (2021).<sup>25</sup>

Table IA6 shows the results. Panel A and B show that there is no statistically significant improvement in how employees view environmental and social practices in attacked firms relative to control firms. In Panel C where the focus is on the inside view of governance practices, the results are the same, except that the coefficient on an indicator for the year of the attack, *Post(t)*, is negative and statistically significant at the 5% level, suggesting that employees view a firm's governance practices to worsen in the year of the attack. The coefficients on the indicators for the years following an attack, *Post(t+1)* to *Post(t+3)*, however, are less negative or even slightly positive, but not statistically significant, implying that the employees' inside view of governance practices subsequently improves back to a level comparable to other firms without an attack. Overall, while a firm might appear to improve all aspects of its ESG practices after a cyber-attack, its employees only view the improvement on the governance dimension to be credible.

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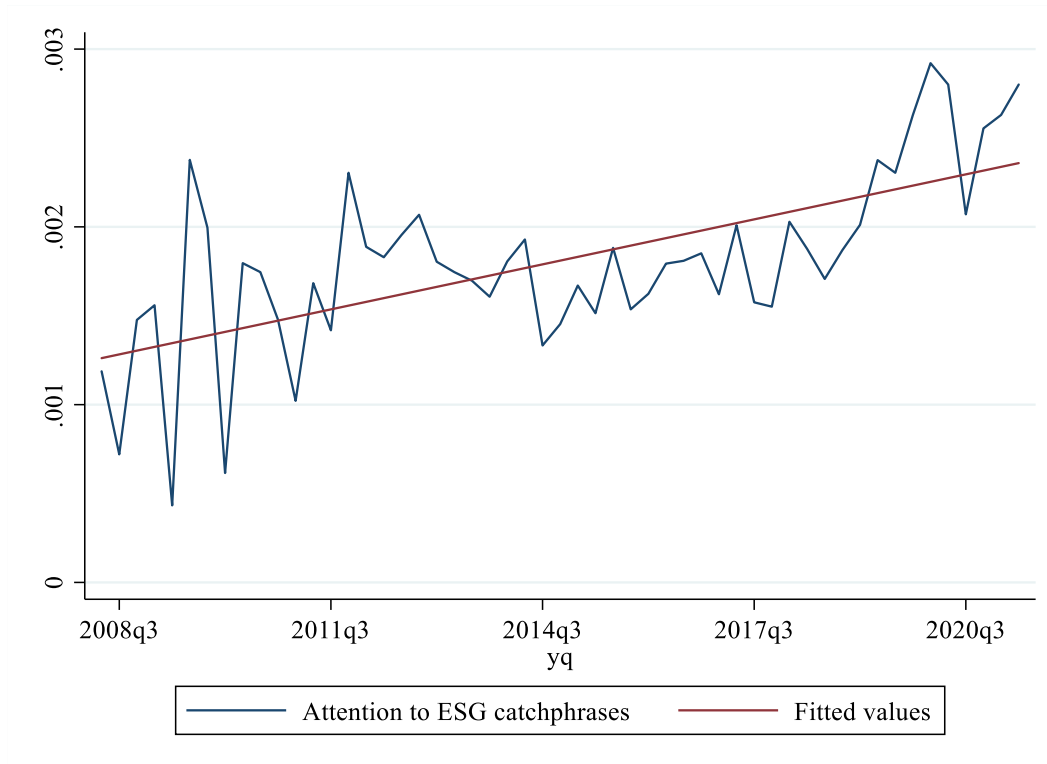
<sup>24</sup> The main results are unchanged if I match each treated firm to only one control firm without replacements. The results are the same if I match only on size, or size and ROA, or size and ROA and Tobin's Q.

<sup>25</sup> In un-tabulated tests, I follow Akey et al.'s main specification and confirm that a firm's overall MSCI ESG score improves in the four years after a cyber-attack in my sample. However, the improvement is only statistically significant for the E category. These findings, nonetheless, have a few caveats. First, Akey et al. use only a subset of MSCI ESG indicators to form their ESG measure, to which I do not have access. Second, their set of cyber-attacked firms are different from my set of cyber-attacked firms, which is from Kamiya et al. (2021).

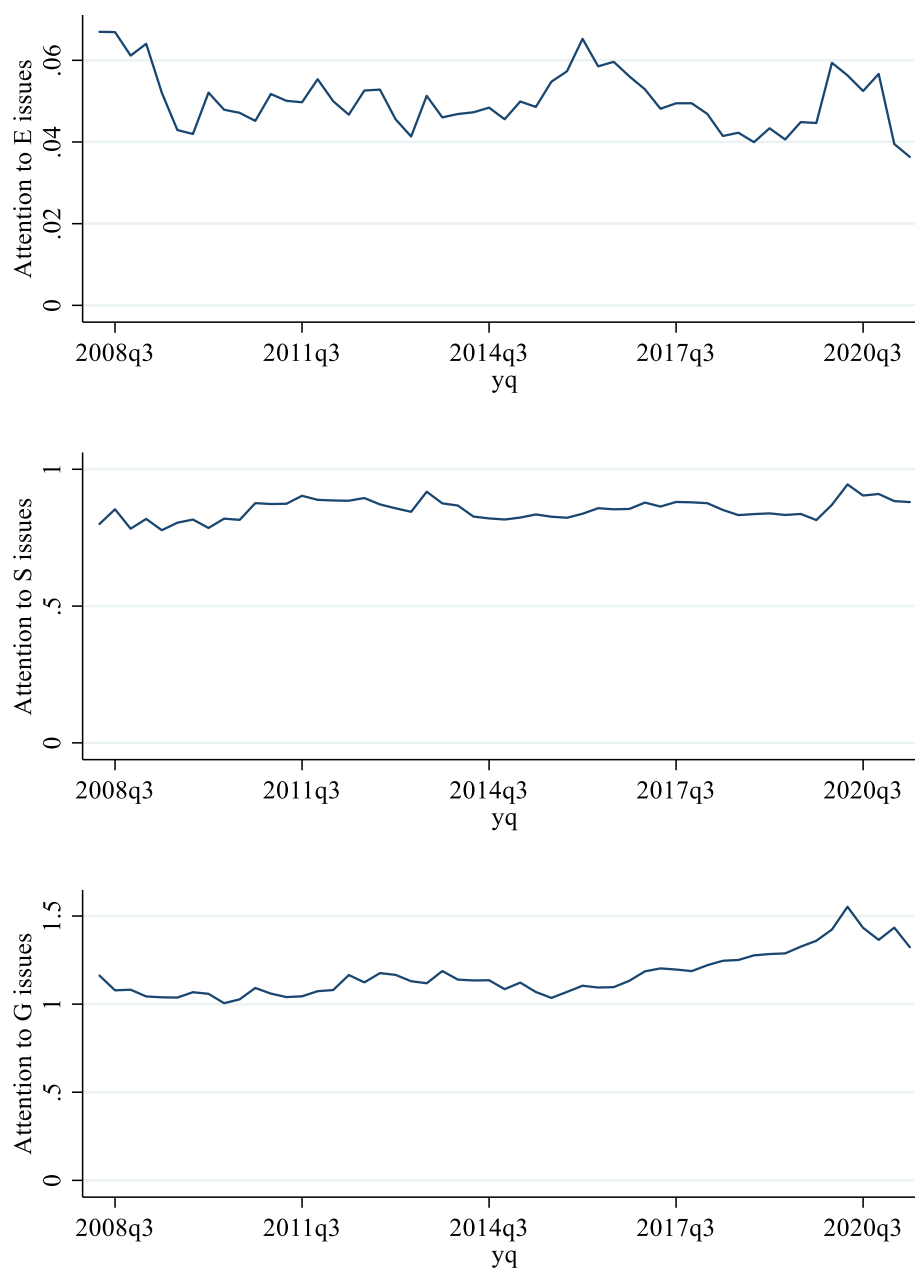
### Figure IA1: Trends in employees' attention to ESG issues

Figure a plots the percentage of ESG catchphrases, namely *ESG*, *CSR*, *sustainable*, and *sustainability*, in an average review from 2008 to 2021. Figure b plots the average attention to E, S, and G issues across reviews for each quarter between 2008 and 2021. Before aggregating to the quarter level, I measure the attention to each ESG category for each review by the percentage of words on each category, from my comprehensive ESG dictionaries, in each review.

**Figure IA1a: Attention to ESG catchphrases**

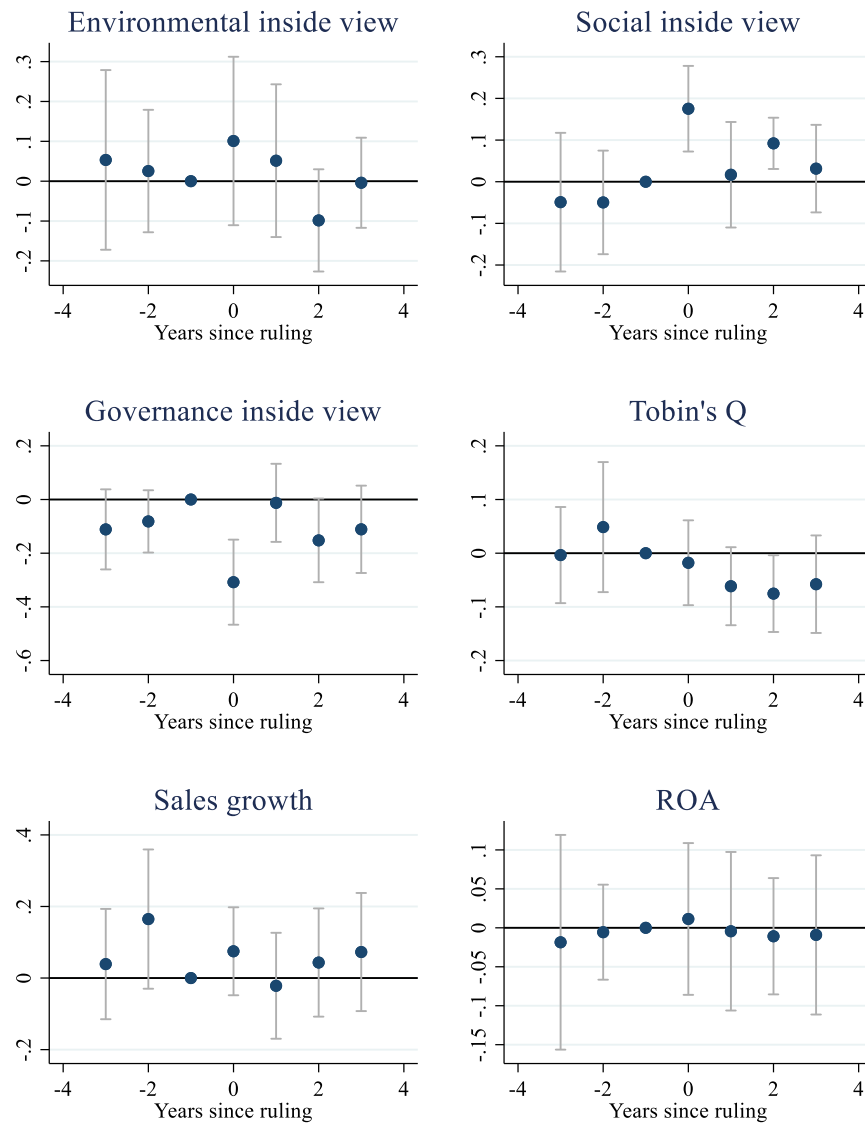


**Figure IA1b: Attention to E, S, and G issues more broadly**



### Figure IA2: Trends around the 2013 court ruling on D&I

This figure plots the typical diff-in-diff (difference in differences) graph around the circuit court ruling on diversity and inclusion in 2013. In particular, it plots the regression coefficients (along with the 95% confidence intervals) on the interactions between the treatment indicator (equaling one for firms headquartered in Indiana, Illinois, and Wisconsin, and zero otherwise) and year indicators relative to the treatment year: 2013. The indicator for the year  $t-1$ , or 2012, is omitted because 2012 is chosen as the reference year. The dependent variables include the ESG inside views, Tobin's Q, sales growth, and return on assets. All regressions include a constant, firm fixed effects, and year fixed effects. Detailed variable definitions are in the Internet Appendix IA3. The 95% confidence intervals are based on standard errors that are clustered at the state level.



**Table IA1: Industry composition of the main sample**

This table shows the number and frequency of firms in different industries among my sample of 1,936 unique US publicly listed companies. For comparison, I also report the frequency of different industries in a sample of Compustat firms with a non-missing market value and an average total assets during 2008-2020 that exceeds the minimum average total assets of firms in my sample.

<b>Fama-French industry code</b>	<b>Freq.</b>	<b>My sample Percent</b>	<b>Compustat Percent</b>
Business Services	414	21.38%	11.29%
Retail	151	7.80%	3.23%
Banking	99	5.11%	11.15%
Electronic Equipment	83	4.29%	4.23%
Trading	76	3.93%	6.16%
Computers	70	3.62%	2.20%
Insurance	67	3.46%	2.33%
Wholesale	62	3.20%	2.48%
Restaraunts, Hotels, Motels	56	2.89%	1.29%
Communication	52	2.69%	2.07%
Transportation	52	2.69%	2.59%
Machinery	48	2.48%	1.94%
Healthcare	43	2.22%	1.51%
Pharmaceutical Products	43	2.22%	11.78%
Medical Equipment	38	1.96%	3.13%
Petroleum and Natural Gas	37	1.91%	5.00%
Utilities	35	1.81%	1.53%
Automobiles and Trucks	29	1.50%	1.03%
Food Products	28	1.45%	1.23%
Consumer Goods	28	1.45%	0.84%
Apparel	28	1.45%	0.78%
Chemicals	28	1.45%	1.59%
Personal Services	28	1.45%	0.89%
Measuring and Control Equipment	28	1.45%	1.15%
Construction Materials	25	1.29%	1.19%
Entertainment	23	1.19%	1.26%
Electrical Equipment	20	1.03%	1.21%
Almost Nothing	20	1.03%	5.30%
Construction	19	0.98%	0.88%
Printing and Publishing	15	0.77%	0.38%
Steel Works Etc	14	0.72%	0.72%
Business Supplies	14	0.72%	0.59%

Real Estate	14	0.72%	1.10%
Aircraft	12	0.62%	0.32%
Shipping Containers	9	0.46%	0.15%
Recreation	8	0.41%	0.51%
Rubber and Plastic Products	6	0.31%	0.43%
Defense	6	0.31%	0.13%
Candy & Soda	5	0.26%	0.23%
Beer & Liquor	5	0.26%	0.17%
Non-Metallic and Industrial Metal Mining	4	0.21%	1.44%
Agriculture	3	0.15%	0.31%
Tobacco Products	3	0.15%	0.05%
Textiles	3	0.15%	0.15%
Shipbuilding, Railroad Equipment	3	0.15%	0.16%
Fabricated Products	2	0.10%	0.13%
Coal	2	0.10%	0.35%
Precious Metals	1	0.05%	1.44%
Unclassified	77	3.98%	0.00%
Total	1936	100.00%	100.00%

**Table IA2: Lists of ESG issues from industry and academic sources**

In this table, Panel A shows the detailed sources where I obtain the lists of ESG issues to create an initial seed word list for each ESG category. Panel B shows the top 25 unigrams and top 25 bigrams that are most frequently used among these sources on each ESG category and also present in the vocabulary of the *word2vec* model trained on 10.4 million employee reviews as described in Section 4. These form the initial seed word lists on ESG topics.

**Panel A: Source texts containing lists of ESG issues**

Source	Category	Location	Source name	Link
MSCI	E	Page 4	MSCI ESG Ratings Methodology Executive Summary MSCI ESG Research September 2019	<a href="https://www.msci.com/documents/1296102/14524248/MSCI+ESG+Ratings+Methodology+-+Exec+Summary+2019.pdf">https://www.msci.com/documents/1296102/14524248/MSCI+ESG+Ratings+Methodology+-+Exec+Summary+2019.pdf</a>
	S	Page 4		
	G	Page 4		
MSCI	E	Page 18-25	MSCI ESG KLD Stats: 1991-2015 Data Sets	<a href="https://libguides.uml.edu/ld.php?content_id=59552417">https://libguides.uml.edu/ld.php?content_id=59552417</a>
	S	Page 25-39		
	G	Page 39-41		
Refinitiv	E	Page 10	Environmental, Social and Governance (ESG) Scores from Refinitiv April 2020	<a href="https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf">https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf</a>
	S	Page 10		
	G	Page 10		
Refinitiv	E	Datastream	Variable Names in Asset4 Dataset	Datastream variable search
	S	Datastream		
	G	Datastream		
S&P Global (RobecoSAM)	E	Figure 4	Measuring Intangibles RobecoSAM's Corporate Sustainability Assessment Methodology	<a href="https://www.spglobal.com/spdji/en/documents/additional-material/robeco-sam-measuring-intangibles.pdf">https://www.spglobal.com/spdji/en/documents/additional-material/robeco-sam-measuring-intangibles.pdf</a>
	S	Figure 4		
	G	Figure 4		
S&P Global (RobecoSAM)	E	Page 2-3	CSA Companion 2021 Corporate Sustainability Assessment	<a href="https://portal.csa.spglobal.com/survey/documents/CSA_Companion.pdf">https://portal.csa.spglobal.com/survey/documents/CSA_Companion.pdf</a>
	S	Page 3		
	G	Page 3-4		
Sustainalytics	E	All	Descriptions of Material ESG Issues and Corporate Governance	<a href="https://www.sustainalytics.com/docs/default-source/meis/definitions/meis.pdf?sfvrsn=8e7552c0_4">https://www.sustainalytics.com/docs/default-source/meis/definitions/meis.pdf?sfvrsn=8e7552c0_4</a>
	S	All		
	G	All		
Vigeo Eiris	E	Page 1	Eiris Sustainability Ratings	<a href="https://www.vigeo-eiris.com/wp-content/uploads/2016/11/EIRIS_SustainabilityRatings.pdf">https://www.vigeo-eiris.com/wp-content/uploads/2016/11/EIRIS_SustainabilityRatings.pdf</a>
	S	Page 1		
	G	Page 1		
Vigeo Eiris	E	Page 5	ESG Assessment Methodology Executive Summary	<a href="https://prodtest-01.vigeo-eiris.com/wp-content/uploads/2021/05/VE_ESG-Assessment-Summary_2021.pdf">https://prodtest-01.vigeo-eiris.com/wp-content/uploads/2021/05/VE_ESG-Assessment-Summary_2021.pdf</a>
	S	Page 5		
	G	Page 5		
RepRisk	E	Page 1	RepRisk Research Scope: ESG Issues, August 2020	<a href="https://www.reprisk.com/media/pages/static/2738025864-1618582399/reprisk-esg-issues-definitions.pdf">https://www.reprisk.com/media/pages/static/2738025864-1618582399/reprisk-esg-issues-definitions.pdf</a>
	S	Page 2-3		
	G	Page 3-4		

Source	Category	Location	Source name	Link
CSRHub	E	All	CSRHub Data Schema Description	<a href="https://esg.csrhub.com/csrhub-esg-data-schema">https://esg.csrhub.com/csrhub-esg-data-schema</a>
	S	All		
	G	All		
Baier, Berninger, and Kiesel (2020)	E	Table 3	Environmental, Social and Governance Reporting In Annual Reports: A Textual Analysis	<a href="https://onlinelibrary.wiley.com/doi/full/10.1111/fmii.12132">https://onlinelibrary.wiley.com/doi/full/10.1111/fmii.12132</a>
	S	Table 3		
	G	Table 3		
Bessec and Fouquau (2021)	E	Table 1	Green Sentiment in Financial Markets: A Global Warning, Date Written: October 13, 2020	<a href="https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3710489">https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3710489</a>

**Panel B: Top 50 words from the source texts on ESG topics**

Environmental	Social	Governance
environmental, emission, waste, climate, energy, water, carbon, biodiversity, pollution, change, use, green, resource, impact, risk, material, packaging, renewable, toxic, recycle, footprint, environment, land, disposal, greenhouse, raw material, renewable energy, carbon footprint, oil spill, efficiently effectively, supply chain, east asia, global footprint, global warming, environmental protection, national park, environmental sustainability, drink water, noise pollution, fossil fuel, electric vehicle, solar energy, solar panel, plastic bag, green belt, air pollution, wind turbine, nuclear power, natural gas, fluorescent lighting	human, right, employee, health, safety, labor, community, labour, social, relation, access, development, capital, indicator, child, responsible, philanthropy, training, fundamental, standard, workforce, privacy, citizenship, occupational, employment, human capital, corporate citizenship, occupational health, supply chain, community involvement, race ethnicity, discrimination harassment, turnover rate, medicaid medicare, performance indicator, collective bargaining, human resource, minimum wage, safe secure, working condition, warning letter, age discrimination, gender racial, racial ethnic, unfair dismissal, human trafficking, threat violence, business model, charitable donation, charitable giving	board, governance, shareholder, ethic, practice, corruption, instability, compensation, structure, code, bribery, tax, corporate, committee, executive, esg, transparency, ownership, audit, level, management, independence, diversity, director, business, code conduct, gender diversity, financial instability, board director, insider trading, financial institution, daytoday operation, tax evasion, false advertising, money laundering, cultural diversity, wide spectrum, policy procedure, 3rd party, regulatory scrutiny, track record, unethical behavior, law violation, nepotism cronyism, hold accountable, government agency, stock price, accountable action, notice period, golden parachute



**Table IA3: From seed word lists to final ESG dictionaries**

These following tables show how the seed word lists change after I remove noisy words from them and finally arrive at the full ESG dictionaries. Panel A shows the seed word lists after I remove noisy words from the initial seed word list for each ESG category (shown in Table IA2 Panel B). I consider a word as noisy if it is outside of the top 1000 words with the highest cosine similarity to the average vector representing the initial seed word list. I also remove *supply chain* from the E category, *fundamental* from the S category, and *financial institution*, *government agency*, and diversity-related words from the G category. Panel B shows how the last twenty words of the full dictionaries would look like with different cutoffs for the dictionaries' size. Panel C shows the final full ESG dictionaries used in the main analyses, which are the top 500 words that are most similar to the average vector representing the seed word list on each ESG category showed in Panel A. When a word appears in multiple dictionaries, I only keep it in the category to which it is most similar.

**Panel A: The seed word lists after removing noisy words**

Environmental	Social	Governance
environmental, emission, energy, water, carbon, biodiversity, pollution, green, packaging, renewable, recycle, footprint, disposal, greenhouse, raw material, renewable energy, carbon footprint, oil spill, global footprint, global warming, environmental protection, environmental sustainability, noise pollution, fossil fuel, electric vehicle, solar energy, solar panel, plastic bag, air pollution, wind turbine, nuclear power, natural gas	human, employee, health, safety, labor, community, labour, social, relation, philanthropy, workforce, citizenship, occupational, human capital, corporate citizenship, occupational health, community involvement, race ethnicity, discrimination harassment, medicaid medicare, collective bargaining, human resource, age discrimination, gender racial, racial ethnic, unfair dismissal, human trafficking, threat violence, charitable donation, charitable giving	board, governance, shareholder, ethic, practice, corruption, instability, bribery, committee, executive, transparency, ownership, audit, level, diversity, business, code conduct, board director, insider trading, daytoday operation, tax evasion, money laundering, policy procedure, regulatory scrutiny, track record, unethical behavior, law violation, nepotism cronyism

**Panel B: Comparing different cutoffs for the final ESG dictionaries' size**

	<b>Environmental</b>	<b>Social</b>	<b>Governance</b>
<b>Last in top 250</b>	gmos, refining, biomaterial, hazardous chemical, nozzle, residential commercial, basin, octg, manufacturing, flour, algae, environmentalism, toxin, masonry, bakken, sawdust, nuclear plant, alloy, sewage, aerial	aapi, assault, employee, legislation, regulatory compliance, whistleblower, underrepresented, bisexual, minoritys, code conduct, hse, latinos, political correctness, grantmake, health, homosexual, tokenism, christianity, spiritual, trauma inform	widespread, oversight, identity, greed, bullying, belief, ineptness, funder, government official, illegal immoral, sarbanesoxley, credibility, fbi, demonstrate, predatory lending, human capital, discriminatory behavior, intent, disclosure, ethos
<b>Last in top 500</b>	actuator, sediment, consol, rtus, faucet, carbide, sensor, moulding, jug, conveyor, roofing, kiln, dpf, aerospace, welding, bicycle, ubiquitin, sprinkler, corrugate, environmentalist	bipartisan, maltreatment, organizer, identity theft, exceptionalism, physical assault, red cross, civic, federally, disabled veteran, underprivileged, foreign national, blm movement, oppression, collective bargaining, willful, diverstiy, appropriation, nonreligious, heart disease	advisory, dishonorable, credo, elitism, egotism, white supremacy, organizational structure, citizenship, lobbyist, competency, procurement, cabal, ethically morally, influence, executivelevel, thereof, usaid, stem, hiringpromotion, unethicalimmoral
<b>Last in top 1000</b>	importer, leed certify, haz, kazakhstan, pollute, agri, opex, dehydration, txu, eprocurement, audio visual, next generation, inhabitant, flashlight, smallholder, microprocessor, manufature, hazardous, busted, computing	donation charity, watchdog, east asian, americorps member, clergy, somali, white savior, coercion, irc, hremmployee, honesty integrity, nondisclosure agreement, polarization, reentry, involvement, palliative, soldier, children, performative, closeted	inner working, obsession, backbone, boli, merger acquisition, lie deception, founder syndrome, pcaob, ousting, 501c3, pennypinching, tokenism, nonperformance, antibullye, non compliant, rampant sexism, antiharassment, disinterest, commonsense, border

### Panel C: Extending to the Full ESG dictionaries

Environmental	Social	Governance
<p>emission, carbon, fossil fuel, co2, natural gas, renewable energy, solar energy, biofuel, hydrocarbon, irrigation, fertilizer, renewable, ethanol, agricultural, pollutant, pollution, recycling, purification, geothermal, ammonia, herbicide, nuclear power, fracking, ecological, thermal, forestry, electricity, dioxide, pesticide, hydroelectric, solar panel, petrochemical, global warming, landfill, mining, consumption, electric vehicle, compost, agriculture, environmental, compressor, lubricant, carbon footprint, chemical, nuclear, biodegradable, gas turbine, wind turbine, polymer, lng, wastewater, aluminium, recyclable, contamination, industrial, electric utility, filtration, biomass, synthetic, vegetation, ewaste, reservoir, biodiversity, coolant, groundwater, stormwater, petroleum, coating, pneumatic, aluminum, propulsion, refinery, particle, transmission, inhalation, acid, asphalt, nitrogen, conservation, oxidation, compostable, electrification, farming, greenhouse, coal, reclamation, photovoltaic, carcinogenic, environmentally friendly, diesel engine, uranium, solar, silica, raw material, chemical plant, fishery, smelter, subsea, lpg, drainage, contaminant, utility, membrane, resin, hydraulic, adhesive, carcinogen, molten, remediation, diesel, monoxide, injection molding, sewerage, corrosion, refrigeration, metallurgy, piping,</p>	<p>advocacy, sustainability, social justice, diversity inclusion, human trafficking, environmental protection, stewardship, equality, inclusion diversity, environmental sustainability, inclusion, eco, citizenship, humanitarian, awareness, diversity equality, justice, society, representation, gender equality, refugee, community, antidiscrimination, outreach, philanthropy, cultural competency, corporate citizenship, reproductive health, indigenous, antiracism, community outreach, glbt, safety, environmental stewardship, mental health, racial justice, racial equity, nondiscrimination, systemic racism, domestic violence, prevention, charitable giving, racial gender, safeguard, hivaid, human capital, consciousness, constitutional, hiv, participant, latino, lgbtq, antibullying, cultural diversity, volunteerism, hse, dei, anticorruption, diversity, lgbt, lgbt community, race ethnicity, discrimination, beneficiary, youth, violence, racial, diversity inclusivity, diversity inclusiveness, civil, inclusivity, welfare, human resource, reproductive, eeoc, aclu, legislation, united nation, occupational health, sex race, lgbtq community, declaration, civic engagement, animal welfare, medicaid fraud, gender sexuality, sexual discrimination, workplace violence, community involvement, sexual assault, dpa, plan parenthood, erg, affirmative action, incarceration, genderbase, racial ethnic, sexual orientation, race sex, lgbtqia, race gender, traumainforme, disaster relief, allege, gender identity, socioeconomic, treaty, cultural awareness, arbitration agreement,</p>	<p>governance, corruption, board director, insider trading, leadership, compliance, tax evasion, malfeasance, institutional, doj, organization, legal compliance, regulator, unethical practice, executive, bribery, stakeholder, practice, cronyism, integrity, embezzlement, regulatory compliance, impropriety, noncompliance, transparency, unethical behavior, accountability, money laundering, code conduct, csuite, conflict interest, organizational, regulatory, strategic, fraudulent activity, partnership, due diligence, cfpb, risk aversion, operational, decisionmake, council, systemic, strategic planning, misuse fund, misconduct, irresponsibility, cronyism nepotism, political correctness, ownership, indict, discriminatory practice, ethical, opacity, mismanagement, bod, antitrust, decision making, watchdog, entity, governmental, ftc, misappropriation, nepotism cronyism, regulatory requirement, questionable ethic, federal regulation, scandal, dishonesty, political infighting, govern body, gaap, hypocrisy, investigation, fiduciary, oversight, objectivity, strategic direction, conservatism, committee, organisation, involvement, strategy, jurisdiction, malpractice, collusion, decision maker, bylaw, dysfunction, empowerment, credibility, reverse discrimination, law violation, cbp, unethical behaviour, silo mentality, nepotism, misappropriation fund, hud, prosecution, wasteful spending, intellectual property, sec filing, gross negligence, alignment,</p>

Environmental	Social	Governance
decommissioning, oil spill, ecology, moisture, asbestos, cellulosic, styrofoam, autonomous vehicle, singleuse, oxide, additive, hemp, combustion, debris, battery, reactor, reduce carbon, metal, hydro, aeronautic, composite, methanol, sulfur, pvc, plastic, transformer, packaging, crude oil, roadway, formaldehyde, hazardous material, radioactive, dangerous chemical, tubing, container, flammable, substation, reusable, mineral, methane, insulation, cyanide, ethylene, ultraviolet, duct, retrofit, geophysical, water wastewater, steel, air pollution, asparagus, ecofriendly, sewer, propane, regenerative, utilityscale, environmentally, hydrogen, liquid, coil, recycle bin, cryogenic, containment, biohazard, desalination, metallic, precious metal, peptide, sheet metal, sulfuric, eco, turbine, aerospace defense, wetland, recycler, aerial, drilling, manufacturing, chromium, water, geological, nuclear plant, alkaline, shipbuilding, nutrient, refining, dredging, mulch, led, epa, deregulation, particulate, biopharmaceutical, toxin, specialty chemical, footprint, oilgas, biomaterial, deepwater, waterwastewater, protein, pulp, manufacture, incinerator, basin, oil gas, bacteria, 3d print, conserve, electrical, contaminate, nozzle, extraction, environmentallyfriendly, underground, fukushima, electric car, valve, flour, electric, sewage, residential commercial, soil, pipe, construction, pollen, gmos, combustible, fiber, heavy	equity inclusion, wellbee, gender racial, antiharassment, marginalized, ada, gender race, unionization, lbgt, safeguarding, socially responsible, affinity group, abortion, reportable, naacp, evidence, legal, violation, financial literacy, citizen, societal, transgender, ministry, lbgti, racial discrimination, homosexuality, eoe, pro bono, blm, constituent, cultural, whistleblow, intersectional, unconscious bias, gender ethnic, activist, terrorism, donor, neutrality, inclusivity diversity, participation, black brown, lgth, philanthropic, antisemitism, gay lesbian, aboriginal, lbgtiq, sociaeconomic, age gender, nonviolent, constituency, violate law, africanamerican, age race, discrimination harassment, fundraising, diversityinclusion, environmentalist, harassment discrimination, coalition, medicare medicaid, gender ethnicity, cultural sensitivity, gender age, lawful, impartiality, culturally sensitive, vulnerable population, gender, health wellness, nys, gentrification, abuse neglect, diverse workforce, antiracist, health, amp inclusion, rehabilitation, fundraise, age discrimination, association, spiritual, sensitivity, indigent, homeland security, ethicality, antipoverty, age sex, injustice, whistle blower, federally, military veteran, occupational, statute, breast cancer, white supremacy, population, sexual preference, disadvantaged, activism, wellbeing, countrys, charitable, constitution, inclusiveness, assault, substance abuse, intersectionality, human, blindness, humanity, native american, population serve, ethnic minority, disabled, underserved population, trauma inform, ethnicity gender, dampi, harassment retaliation, women, behavioral health, gender diversity,	misdeed, valuation, fraud, appropriation, sanction, medicare fraud, govern, honesty integrity, funder, illegal activity, ignorance, incompetence, principle, erisa, financial, action, sarbanesoxley, oig, shareholder, centralization, mishandling, dubious, investor, careerism, disclosure, compliance regulation, political agenda, strategic vision, clandestine, lobbying, engagement, willful, diversification, arrogance, gross incompetence, fairness, decentralization, integrity honesty, exec, clevel, advisory, c suite, identity, shady dealing, infidelity, effectiveness, organizational structure, inefficiency, fundamental, nepotism favoritism, grantmake, execution, prudence, fraudulent, immorality, behavior, obfuscation, incompetency, trustee, mismanagement fund, oxley, coverup, daytoday operation, ruling, shorttermism, groupthink, sovereign, highlevel, ethical violation, risk mitigation, law regulation, structural, negligence, usaid, leader, ineptitude, government official, fdic, deception, congressional, partner, corrupt, profitability, blatant, legality, organisational, toplevel, protectionism, business, regulation, accounting auditing, defraud, professionalism, duplicity, agenda, ucmj, core value, indictment, procurement, secrecy, flagrantly, sexual misconduct, partnering, administration, misrepresentation, moral compass, lawsuit file, systemically, behaviour, nlr, discrimination retaliation, ethically, supreme court, board, demonstrate, forgery, selfdealing, inaction, competence, government regulation, kickback, departmental,

Environmental	Social	Governance
<p> machinery, extruder, autoclave, green, planting, masonry, vapor, material handling, globalization, sawdust, algae, hazardous chemical, poultry, enclosure, bakken, engine, anthrax, malaria, gulf mexico, cardboard, ceramic, graphite, gasoline, deforestation, uv, bevel, splicing, restoration, alloy, torque, dumpster, environmentally responsible, centrifugal, arid, evaporator, furnace, synthesis, chromatography, deregulated, shale, hdpe, fiberglass, abatement, airborne, airbag, transistor, uality, gardening, oampg, environmentalism, industrialization, water electricity, powder, silgan, thermodynamic, upstream, bioenergy, flooding, nonrecyclable, shipyard, sealant, grower, nuke, waterway, timber, ozone, vibration, earthquake, lowcarbon, waterproofing, cyclone, fastener, sheetmetal, biological, forest, vessel, demolition, boiler, fume, pretreatment, purifier, mitigation, gmo, detection, electromechanical, insecticide, milling, precast, npcil, scrubbing, textile, allergen, vertically integrate, spacecraft, mammal, antenna, enzyme, 480v, viscosity, export, scrubber, aerosol, shrub, lamp, drinking water, purify, refrigerant, arsenic, refrigerate, extrusion, bleach, water heater, multimeter, generator, seed, submarine, industrial automation, blade, wiper blade, octg, pcb, wildlife, chlorine, hvac, industrialcommercial, hedge, flooring, poisoning, phosphor, tanker, lighting, silicone, railway, petrochem, plastic bag, recycle, chloride, emerge market, oil, </p>	<p> defamation, hispaniclatino, trauma informed, institutional racism, protest, arbitration, ngo, unlawful, ergs, whistleblower, medicaid medicare, citizenry, accreditation, identity theft, discrimination racism, bame, collective bargaining, workforce, asian american, wrongful termination, ethnic, race nationality, christianity, lgbta, lbgtq, bisexual, volunteering, victimization, lbgtqi, flagrant, minority, aapi, neurodiversity, ethnic group, harassment, physical emotional, minoritys, race religion, trans, recipient, charitable contribution, sexuality, antibullying, ethnic diversity, peacebuilde, racegender, ideological, underserved community, wellness, cobc, mindfulness, afghan, heartwalk, xenophobia, harassment, daca, advocate, continuous improvement, socioeconomic status, blatant disregard, prolife, discriminatory behavior, bigotry, reform, di, sex discrimination, heart disease, whistleblowing, civic, blatant discrimination, equality fairness, amnesty, nondiscriminatory, alleviation, charity, nonbinary, serve nation, bcorp, heforshe, thereof, workplace bullying, resettlement, oxfam, islam, underrepresented, purport, foreign national, national origin, exceptionalism, migrant, gender sexual, lbgtbq, grantmaking, mental illness, latinx, discriminatory, homelessness, homophobia, white supremacist, racism, sexualitie, latinos, charitable donation, elder, ally, spirituality, persecution, physical assault, stance, employee, age ethnicity, lutheran, raciaethnic, homosexual, immigrant, investigate, retaliation, tnc, eradicate, cultural exchange, unhcr, harassmentdiscrimination, selfcare, multiculturalism, scsep, tokenism, </p>	<p> chairman, business acuman, proceeding, widespread, foundation, llcs, entrepreneurship, credible, fbi, commissioner, sarbane, gross mismanagement, initiative, complicit, breach, enron, semilegal, belief, competency, democracy, ethos, cheating, legislative, misclassification, plagiarism, racism sexism, morality, deeply root, self preservation, predatory lending, ineptness, litigation, highestlevel, appear, c level, allegation, cowardice, appointee, pervasive, regulatory scrutiny, brazen, strategic thinking, track record, levy, aversion risk, ceo, scrutiny, lawsuit, abusive behavior, falsification, alleged, culture, inequality, coercion, short termism, foresight, thievery, tacitly, illegal immoral, credo, pandering, philosophy, public image, selfinterest, longstanding, breach contract, illegality, perpetrate, patronage, respa, empire building, notionally, perjury, litigious, internally externally, autocracy, practise, bullying harassment, felonious, elt, unethical illegal, egoism, political posturing, selfpromotion, unscrupulous, intent, history, failing, ethic, hubris, ethically questionable, board trustee, influence, manipulation, disbar, greed, wrongdoing, atrocity, presidential, cartel, prosecute, promulgate, misbehavior, shortsightedness, empirebuilde, immunity, racismsexism, retribution, lawsuit pende, machination, denial, deliberate, mistrust, gender discrimination, unconscionable, tribalism, founder, hiringpromotion, cluelessness, avoidance, unethical, ineffectiveness, perpetuate, </p>

Environmental	Social	Governance
<p>detector, jubail, hydrology, softener, sanitizer, molding, connector, converter, injector, electrolyte, truss, phosphate, polluted, microorganism, gasket, paperplastic, chimney, bacterial, beam, countertop, excavation, maritime, cement, polluter, sagd, nitrate, preservative, jet engine, distillation, rechargeable, fertiliser, megatrend, agribusiness, oxygen, drywall, composting, microbial, wafer, copper, carbide, manufacturer, cross contamination, epoxy, fairtrade, inhale, potable, foot print, jug, decarbonization, ubiquitin, antifreeze, nitric, fpso, moulding, magnetic, girder, polysilicon, dust everywhere, welding, kiln, corrugate, fiber optic, sensor, plant, commodity price, leaky roof, plantbase, polyurethane, commercial residential, exelon, quarry, faucet, stainless, refueling, dpf, hydroponic, ag, sprinkler, brewing, areva, exchanger, medicinal, conveyor, pest, aeronautical, liion, tunneling, aerospace, sediment, magnesium, netzero, powertrain, biodiesel, sprayer, eco friendly, plumbing, dairy, roofing, actuator, hydrogenate, voltage, tobacco, soybean, consol, warfighte, sempra, rtus, environmentally conscious, corpoelec, ev, bicycle, opioid, national defense, operational excellence</p>	<p>race sexual, marital status, egregious, armed force, faithbased, racial diversity, voter, catholic, grassroots, culturalracial, lgbtqfriendly, supporter, militaryveteran, red cross, blatant racism, minority woman, bipoc, public servant, interfaith, seu, giveback, palestinian, muslim, charitable cause, charitie, wrongful, disabled veteran, csr activity, organizer, transphobia, antiunion, bipartisan, george floyd, charitys, racism homophobia, probono, social, employeee, raceethnicity, tokenize, asianamerican, habitat humanity, iampd, black hispanic, anti, lgbtqa, sexual harrassment, catholic church, genderrace, sexual, underrepresented group, ableism, differentlyable, cancer society, ethnicity, blm movement, harrassment, maltreatment, religious, dei initiative, sexual harrasment, feminism, nationalism, ageism, diverstiy, latina, blood donation, agerace, nonminority, buddhist, sexual harassment, socially aware, lgbqt, charitable foundation, insensitivity, embrace diversity, descrimination, underprivileged, oppression, religion, discrimination, nonreligious, microaggression, feminist, racism discrimination, folx, communitycharity, ethnical, gender inequality, antiblack, chaplain, nonmuslim, nationalitie, communitybased, rainn, racially diverse, racialgender, deampi, discriminationharrassment, volunteer, racial tension</p>	<p>endemic, decisionmaking, complicity, questionably, stem, affair, nefarious, violator, unethical immoral, paranoia, meddling, nonadherence, bullying, legalize, dysfunctionality, president, controversy, exhibit, discrimination lawsuit, dealing, political maneuvering, harassment bullying, pende lawsuit, belligerence, lobbyist, inducement, rampant nepotism, nepotismfavoritism, conviction, ethically morally, rampant cronyism, ceo coo, evident, blatant nepotism, covert, executivelevel, callousness, misogyny, dismantling, sexism, morally questionable, amoral, power struggle, narcissism, cabal, unprofessional behavior, immoral unethical, shenanigan, avarice, condone, sexism racism, fsa, elitism, ruthlessness, bullying intimidation, modus operandi, rampant, sexism ageism, dishonest unethical, antigay, morally ethically, indiscretion, disfunction, unethicalimmoral, machiavellian, unethicalillegal, dishonorable, deceit, egomania, infringement, bullyingharassment, character assassination, egotism</p>

**Table IA4: Predicting downside risk**

This table shows the regressions at the firm-year level of downside risk in year  $t+1$ ,  $t+2$ , or  $t+3$  on the inside view and the MSCI ESG measures. The dependent variable (Y) is downside volatility, or the standard deviation of negative daily returns during a year, for Panel A. It is tail risk, or the average absolute value of the 5% worst daily returns in a year, for Panel B. All regressions control for Fama-French 48 industry fixed effects, year fixed effects, size, leverage, R&D, Tobin's Q, sales growth, ROA, and institutional ownership (all at year  $t$ ). Detailed variable descriptions are in Appendix B. All variables are standardized to have a zero mean and a unit standard deviation. Standard errors (in parentheses) are clustered by firms.

**Panel A: Predicting downside volatility.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )		Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )			
E Inside view <sub>t</sub>	-0.00 (0.01)		-0.00 (0.01)	0.00 (0.01)		0.00 (0.01)	0.00 (0.01)		-0.00 (0.01)
S Inside view <sub>t</sub>	-0.00 (0.01)		-0.00 (0.01)	0.01 (0.01)		0.00 (0.01)	0.00 (0.01)		0.00 (0.01)
G Inside view <sub>t</sub>	-0.02*** (0.01)		-0.01** (0.01)	-0.02*** (0.01)		-0.01 (0.01)	-0.01* (0.01)		-0.02** (0.01)
E MSCI <sub>t</sub>		-0.01** (0.01)	-0.02** (0.01)		0.01 (0.01)	0.00 (0.01)		0.01* (0.01)	0.01 (0.01)
S MSCI <sub>t</sub>		0.01 (0.01)	0.01 (0.01)		-0.00 (0.01)	-0.00 (0.01)		-0.01 (0.01)	-0.01 (0.01)
G MSCI <sub>t</sub>		-0.01 (0.01)	-0.02 (0.01)		-0.00 (0.01)	-0.01 (0.01)		0.00 (0.01)	-0.01 (0.01)
Y <sub>t</sub>	0.48*** (0.01)	0.46*** (0.02)		0.35*** (0.02)	0.32*** (0.02)		0.29*** (0.02)	0.29*** (0.02)	
Observations	13333	6457	5676	11721	6388	5618	10147	5628	4901
R-squared	0.52	0.53	0.35	0.48	0.52	0.48	0.47	0.49	0.44
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes

**Panel B: Predicting tail risk.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	One year ahead ( $Y_{t+1}$ )		Two years ahead ( $Y_{t+2}$ )			Three years ahead ( $Y_{t+3}$ )			
E Inside view <sub>t</sub>	-0.00 (0.01)		-0.00 (0.01)	-0.00 (0.01)		-0.00 (0.01)	0.00 (0.01)		-0.00 (0.01)
S Inside view <sub>t</sub>	-0.00 (0.01)		-0.00 (0.01)	0.00 (0.01)		0.00 (0.01)	0.01 (0.01)		0.00 (0.01)
G Inside view <sub>t</sub>	-0.02*** (0.01)		-0.01** (0.01)	-0.02*** (0.01)		-0.01 (0.01)	-0.01** (0.01)		-0.02** (0.01)
E MSCI <sub>t</sub>		-0.01* (0.01)	-0.02** (0.01)		0.01 (0.01)	0.00 (0.01)		0.01* (0.01)	0.01 (0.01)
S MSCI <sub>t</sub>		0.01 (0.01)	0.01 (0.01)		-0.01 (0.01)	-0.00 (0.01)		-0.01 (0.01)	-0.01 (0.01)
G MSCI <sub>t</sub>		-0.01 (0.01)	-0.02 (0.01)		-0.00 (0.01)	-0.01 (0.01)		-0.00 (0.01)	-0.01 (0.01)
$Y_t$	0.46*** (0.01)	0.46*** (0.01)		0.34*** (0.01)	0.31*** (0.02)		0.28*** (0.02)	0.28*** (0.02)	
Observations	13335	6457	5676	11727	6391	5621	10153	5630	4903
R-squared	0.54	0.52	0.34	0.50	0.53	0.49	0.49	0.49	0.45
Year F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry F.E.	yes	yes	yes	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes



**Table IA4: Do more D&I policies translate into a better inside view?**

This table shows the regressions at the firm-year level of the inside view at year t+1 on a measure of diversity and inclusion (D&I) policies in year t. The measure of D&I policies (*Policies*) is the number of diversity-related strengths in the MSCI KLD dataset. Control variables include size (log of assets), leverage (total debt/assets), Tobin's Q, ROA, and institutional ownership, all at year t. The industry fixed effects are based on the Fama-French 48 industry classifications. *Controversies* captures the number of concerns related to diversity and inclusion in the MSCI KLD dataset. *High institutional ownership* is an indicator equaling one if a firm has an above-sample-median institutional ownership in a year and zero otherwise. Similarly defined are the indicator variables *High analyst coverage*, *High complexity*, *High advertising intensity*, and *High S (social) inside view*, where analyst coverage is the number of analysts following a firm in a year, complexity is a measure of organizational complexity as in Coles, Daniel, and Naveen (2008), and advertising intensity is the ratio of advertising over sales. Detailed variable descriptions are in Appendix B. In regressions with an interaction term, I control for the corresponding stand-alone variables. All variables are standardized to have a zero mean and a unit standard deviation. Standard errors (in parentheses) are clustered by firms.

	(1)	(2)	(3)	(4)	(5)	(6)
Policies	0.049*** (0.009)	0.024** (0.010)	0.018 (0.031)	-0.016 (0.011)	-0.022* (0.012)	-0.034 (0.038)
Policies x High institutional ownership			0.015 (0.017)			0.018 (0.018)
Policies x High analyst coverage			0.004 (0.027)			0.011 (0.032)
Policies x High complexity			-0.014 (0.028)			0.012 (0.034)
Policies x High advertising intensity			0.010 (0.017)			-0.002 (0.020)
Policies x High S inside view			-0.008 (0.014)			-0.017 (0.014)
Controversies		-0.015 (0.011)	-0.013 (0.011)		-0.003 (0.012)	-0.002 (0.012)
Observations	10235	9402	9012	10103	9267	8875
R-squared	0.070	0.092	0.114	0.327	0.337	0.360
Industry & year FE	yes	yes	yes	yes	yes	yes
Firm FE	no	no	no	yes	yes	yes
Controls	no	yes	yes	no	yes	yes

**Table IA5: Persistence in the ESG inside view**

This table shows the regressions at the firm-year level of the inside view at year t on its value at year t-1, for the E, S, and G categories separately. Control variables, when included, are the numerical ratings on Glassdoor, all averaged across reviews to the firm-year level, measured at year t. Industry fixed effects are based on the Fama French 48 industry classification. Detailed variable descriptions are in Appendix B in the main paper. Robust standard errors are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
	E inside view		S inside view		G inside view	
Lagged E inside view	0.108*** (0.014)	0.100*** (0.015)				
Lagged S inside view			0.138*** (0.009)	0.098*** (0.010)		
Lagged G inside view					0.234*** (0.009)	0.135*** (0.010)
Rating - overall		-0.023** (0.011)		0.027 (0.050)		0.235*** (0.067)
Rating - balance		-0.011 (0.007)		0.030 (0.026)		-0.239*** (0.036)
Rating - culture		-0.005 (0.009)		0.417*** (0.039)		0.464*** (0.049)
Rating - career		0.023** (0.009)		-0.115*** (0.039)		0.002 (0.049)
Rating - compensation		-0.010* (0.006)		0.108*** (0.023)		-0.265*** (0.031)
Rating - management		0.006 (0.010)		-0.062 (0.041)		0.629*** (0.056)
_cons	0.004** (0.002)	0.021 (0.058)	0.170*** (0.007)	-1.433*** (0.219)	0.114*** (0.009)	-2.526*** (0.234)
Observations	19740	16295	19740	16295	19740	16295
R-squared	0.012	0.042	0.021	0.120	0.056	0.276
Industry FE	no	yes	no	yes	no	yes

*Robust standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

**Table IA6: Do employees view ESG practices to improve after a cyber-attack?**

In this table, I present coefficient estimates from the regressions in a firm-year panel of firms with and without a cyber-attack in the three years before and after the cyber-attack. The dependent variable in Panels A, B, and C is the inside view on E, S, and G practices, respectively. The main explanatory variable is *Post*, an indicator equaling one for firms with a cyber-attack in the three years following the cyber-attack and zero otherwise. *Post(t)* is an indicator equaling one for an attacked firm in the year of the attack and zero otherwise. *Post(t+1)* is an indicator equaling one for an attacked firm one year after the attack and zero otherwise. *Post(t+2)* and *Post(t+3)* are defined similarly. *Post x High inst. ownership* is the interaction between the *Post* and an indicator equaling one if a firm has an above-sample-median institutional ownership. *Post x High analyst coverage*, *Post x High complexity*, and *Post x High advertising intensity* are defined similarly. In regressions with those interactions variables, I include but do not show the corresponding stand-alone variables as independent variables. Control variables, when included, are size, ROA, leverage, sales growth, Tobin's Q, and institutional ownership. Up to 10 firms are matched to each attacked firm within the same Fama-French 48 industry and year based on a propensity score matching procedure using a logit model on the control variables and the E, S, and G inside views one year before each cyber-attack. With a caliper of 0.1, the final sample has 70 attacked firms and 361 control firms. All regressions include firm and industry-year fixed effects. Standard errors, clustered at the firm level, are reported in parentheses.

**Panel A: Inside view of environmental practices (E)**

	(1)	(2)	(3)	(4)
Post	0.013 (0.063)	0.037 (0.067)		
Post (t)			-0.154 (0.136)	
Post (t+1)			-0.019 (0.081)	
Post (t+2)			0.091 (0.083)	
Post (t+3)			0.040 (0.081)	
Post x High inst. ownership				-0.128 (0.108)
Post x High analyst coverage				0.204 (0.176)
Post x High complexity				-0.148 (0.136)
Post x High advertising intensity				0.052 (0.111)
Observations	2649	2368	2800	2368
R-squared	0.327	0.341	0.300	0.341
Controls	no	yes	yes	yes

**Panel B: Inside view of social practices (S)**

	(1)	(2)	(3)	(4)
Post	0.007 (0.087)	-0.061 (0.092)		
Post (t)			-0.084 (0.087)	
Post (t+1)			-0.065 (0.103)	
Post (t+2)			-0.015 (0.093)	
Post (t+3)			-0.112 (0.139)	
Post x High inst. ownership				-0.133 (0.163)
Post x High analyst coverage				-0.127 (0.179)
Post x High complexity				0.257 (0.176)
Post x High advertising intensity				-0.099 (0.142)
Observations	2649	2368	2800	2368
R-squared	0.339	0.376	0.363	0.377
Controls	no	yes	yes	yes

**Panel C: Inside view of governance practices (G)**

	(1)	(2)	(3)	(4)
Post	-0.002 (0.079)	-0.019 (0.081)		
Post (t)			-0.173* (0.095)	
Post (t+1)			-0.108 (0.106)	
Post (t+2)			0.055 (0.108)	
Post (t+3)			0.010 (0.102)	
Post x High inst. ownership				0.052 (0.130)
Post x High analyst coverage				-0.123 (0.145)
Post x High complexity				0.064 (0.182)
Post x High advertising intensity				0.018 (0.162)
Observations	2649	2368	2800	2368
R-squared	0.386	0.421	0.393	0.421
Controls	no	yes	yes	yes