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Hoa Briscoe-Tran
Ohio State University

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I am grateful for comments from Rui Albuquerque, Wenzhi Ding, Rodolphe Durand, Alex Edmans, Isil Erel, Kornelia Fabisik, Andrei Goncalves, Gerard Hoberg (discussant), Julian Koelbel, Mehdi Lehlali (discussant), Victor Lyonnet, Xinjie Ma, Aneesh Raghunandan, Zacharias Sautner (discussant), Amin Shams, René Stulz, Long Tran, Ly Tran, Petra Vokata, Daisy Wang, Michael Weisbach, Michael Wittry, Qiping Xu, seminar participants at Cornell University, Ohio State University, Georgia State University, University of Kentucky, University of Warwick, University of Alberta, Auburn University, University of Illinois Chicago, Erasmus University Rotterdam, Michigan State University, and the BlackRock Applied Research Award, and conference participants at the ECGI Corporate Governance Symposium, UT-Austin PhD Symposium, CICF, ARCS, RSM, GRASFI, Nova SBE Finance PhD Countdown, and USC Marshall PhD Conference. I thank Bernadette Minton for sponsoring my access to the Ohio Supercomputer, and Jun-Koo Kang for sharing the list of cyber-attacks.

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 has useful 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, both theoretically and empirically. In various settings including a novel exogenous shock, I show that low-cost changes in a firm's stated ESG policies do not affect the inside view while more expensive changes do.

Keywords: ESG, CSR, greenwash, cheap talk, employees, NLP, Glassdoor

JEL Classifications: G30, G34, M14, M40, D22

Hoa Briscoe-Tran
Researcher
Ohio State University
2100 Neil Avenue
Columbus, OH 43210-1144, USA
e-mail: briscoe-tran.1@osu.edu

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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 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 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 more balanced (Marinescu et al. (2018)). Finally, 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. My approach is novel because it naturally differentiates positive and negative views of ESG practices, unlike previous studies using a dictionary approach, such as Li et al. (2020), which counts words about corporate culture in a firm's earnings calls to measure culture, regardless of whether these words are in a positive or negative context.

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 my sample, which covers the largest publicly listed US firms having at least 100 reviews as of July 2020. Moreover, in Figure 1, 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 inside view appears reliable in many other aspects. First, the distribution of the inside view 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 signficantly 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, SunEdison, a solar energy firm, was ranked first on E practices, while Alpha Natural Resources, a coal producer 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 -0.02, 0.11, and 0.07 for the E, S, and G categories, respectively. The inside view's correlation with the ESG rating from Refinitiv is similarly low.

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 likely predict these indicators better than the inside view. I find that to be the case. The MSCI E rating predicts a firm's carbon emission and E violations up to three years ahead, while the inside view on E practices only weakly predicts carbon emission.

For social (S) issues, however, the employees' inside view likely provides significant information. First, employees represent a key stakeholder whose satisfaction directly affects a firm's social performance. Second, greenwashing incentives are less likely to affect Glassdoor's

anonymous 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 the S inside view predicts 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 likelihood of and dollar penalties for social violations, such as violations on workplace safety. 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 that the inside view is informative about ESG practices, it should be informative about a firm's downside risk too, as existing literature suggests that ESG practices could act as a risk mitigation tool (e.g., Hoepner et al. (2020)). I find that to be the case, using two measures of downside risk as in Hoepner et al. (2020). Both the MSCI rating and the inside view across the ESG categories predict a lower downside risk one year ahead with similar economic magnitudes, after controlling for each other, firm characteristics, industry fixed effects, and even past downside

risk. However, only the inside view remains statistically significant in predicting downside risk two and three years ahead after controlling for past downside risk, implying that the inside view contains longer-lasting information about downside risk than the MSCI ESG rating. I find similar results for other measures of risk, including upside volatility and total volatility.

Examining the inside view further, I 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 issues with the inside view.

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 carries a likely large compliance and reputational cost because it requires that firms report annual progress or else get publicly expelled. Historically, the UNGC has expelled over 40% of its participants between 2000 and 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), Riley (1979)).

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 7th 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.

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. (2021).

The paper proceeds as follows. Section 2 develops the hypotheses tested in this paper. Section 3 describes how I measure the ESG inside view and show its descriptive statistics. Section 4 studies

whether the inside view predicts future ESG-related outcomes. Section 5 tests whether firms walk the ESG talk in various settings. Section 6 discusses robustness checks, and Section 7 concludes.

2. Hypothesis development

2.1. 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.[1] The sustainable investing industry has become so large that, globally, over 600 agencies were rating firms on ESG issues in 2018 (Wong, Brackley, and Petoy (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, a firm can inflate ratings by highlighting immaterial ESG practices, such as charity donations, while ignoring material but costlier ESG practices, such as diversity and inclusion practices. 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."[2]

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 harassments or frauds without fear of retaliation. Indeed, 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.

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

[1] Source: http://www.gsi-alliance.org/.

[2] See https://corpgov.law.harvard.edu/2017/07/27/esg-reports-and-ratings-what-they-are-why-they-matter/.

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. 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 on issues like emissions 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.*

2.2. 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.*

3. Data, measurements, and descriptive statistics

3.1. 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. Appendix A shows an example.

To capture the outside view of a firm's ESG practices, I collect the ESG ratings from MSCI, 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 (2018)).

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 categorizes violations into nine groups: environment, consumer protection, employment, healthcare, competition, financial, government contracting, miscellaneous, and safety-related offenses. The first group clearly captures environmental (E) violations. The next four groups capture social (S) violations. For the safety-related group, I classify 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. The rest, including those in the competition and financial categories, may capture governance-related violations, but I exclude them because theory is unclear if better governance should be associated with fewer violations on those categories.

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 main sample, I start with 7,851 US-headquartered companies having at least 100 reviews on Glassdoor as of July 2020. I then match these firms to those available on Compustat during 2008-2020 using stock tickers and company names to arrive at my main sample of 1,936 publicly listed firms. My sample is larger than those in other studies using Glassdoor data, such as Green et al. (2019) with 1,238 firms.[3] In addition, the Internet Appendix Table IA1 shows that the industry composition of my sample appears similar to that of Compustat firms with similar sizes in the same period, except that my sample has more business services and retail firms but fewer banking and pharmaceutical firms, similar to Green et al. (2019)'s sample.

I then merge my sample with the MSCI ESG ratings and the Violation Tracker data, as detailed in the Internet Appendix IA1. Before merging, I aggregate the number of violations and the penalty

[3] 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.

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.

3.2. 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.

3.2.1. 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).[4]

3.2.2. 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 IA2).

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.[5] In addition, following Gao, He, and Wu (2018), I consider diversity issues as an S issue and thus remove any diversity-related words from the seed word list on the G category. I further remove four noisy items from the seed word lists to arrive at the final seed word lists shown in Table 2 Panel A.[6] 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.

[4] 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.

[5] 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%.

[6] 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 remove *fundamental* from the S category because it has no obvious link to S topics. Finally, I remove *financial institution* and *government agency* from the G category because doing so removes noisy named entities like *FDIC* and *CIA* from the final G dictionary while adding meaningful words like *public image* and *business acumen*.

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.

3.2.3. 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.

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.

3.3. 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.

3.3.1. 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, still 34.1% of reviews mention some ESG word.

Given the recent rise in ESG investing, employees are likely to mention ESG catchphrases more over time. Figure 1a 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 1b 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.

3.3.2. 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 Alpha Natural Resources, a coal producer, ranked bottom. Select reviews from SunEdison indicate that the firm was growing fast in the solar energy sector with an excellent energy storage technology while expanding into wind energy. Even an employee who overall rated SunEdison one star acknowledged the firm's potential to address global energy shortage. Select reviews from Alpha Natural Resources, however, highlighted the firm's dependency on coal. An employee of the company wrote in 2016 that the company's industry was "on the decline and … unsustainable", while another employee explained the decline with "the EPA's war on coal".

Based on the employees' inside view of S practices, HP Inc., a well-known computer manufacturer, ranked top, while Colony Capital, an investment management firm, ranked bottom. Select reviews from HP Inc. indicated that the firm was "highly engaged in diversity and

inclusion." Another employee of HP Inc. in 2018 said that the firm "attracted talent based on talent - regardless of politics, religious, gender, sexual orientation…" Employees from Colony Capital, however, complained about a stressful work environment, poor work-life balance, and high turnover. The company's reviews appeared to reveal inside information. For example, an analyst mentioned in 2017 that Colony Capital's CEO "sent a company-wide email berating employees about not being in the office at 7:00am", revealing an implicit internal expectation on work hours.

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, however, indicated that the firm was disorganized and that even a good "work ethic will not go a long way."

3.3.3. 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 2 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.[7]

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 -0.02, 0.11, and 0.07 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.

4. Is the inside view informative about future 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. I also conduct a similar test where the variable to predict is a firm's downside risk.

4.1. 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 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 emission scaled by sales.

For these E performance indicators, employees' inside view likely provides little information relative to the MSCI E rating. 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

[7] 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)).

shows that a higher MSCI E rating predicts a lower likelihood of E violations (Panel A), a lower amount of E penalty relative to sales (Panel B), and a lower amount of carbon emission relative to sales (Panel C), while the E inside view only weakly predicts the last indicator. From Refinitiv's Asset4 database, I also consider indicators of hazard wastes, water use, and energy use, despite their low data coverage. The inside view does not strongly predict these indicators either.

4.2. 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 a firm having a social violation in the future, with the most statistical significance beyond the MSCI S rating and a lagged indicator of social violation (at the 1% or 5% level) for the negative component of the inside view, which is the average percentage of S key words in the cons section of reviews.

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 any horizon, and even significance (at the 5% level in column (3)) beyond the lagged Tobin's Q for the one-year horizon.

4.3. 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)).[8]

The employees' inside view of governance should predict future governance indicators well because the employees observe internal governance attributes frequently and closely.

[8] 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 could end up with higher realized returns when investors' preference for ESG-friendly firms increases. Therefore, finding that the inside view predicts a lower or higher stock return does not validate it as a measure of a firm's ESG practices. Nonetheless, in un-tabulated tests, I find that the inside view on governance positively predicts yearly buy-and-hold returns up to three years ahead while the MSCI ratings do not.

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 15% to 18% lower likelihood of a firm having an internal control weakness in up to three years ahead (columns 1, 4, and 7).[9] 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 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 the MSCI G rating (column 2), but it disappears 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 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.

[9] 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.

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 10% 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 significantly 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), and control for current performance metrics like sales growth and ROA (Panel G).

Another concern is about omitted factors. One such factor is the halo effect, the tendency for a reviewer' 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.

4.4. Predicting downside risk

A literature 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 (Bawa (1975), Fishburn (1977)). The second is tail risk, or the average absolute value of the lowest 5% of daily returns during a year (Jorion (1996), Ellul and Yerramilli (2013)).

Table 7 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.

5. 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.

5.1. 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 risks and opportunities", 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 8 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 0.00 across different specifications, and not significant at the 10% level.

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 (0.012). I standardize all continuous variables, so the coefficient means that a standard deviation (SD) higher in the number of policies is associated with a 1.2% 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 (0.009). 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.

5.2. 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".[10] 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 successfully collect 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.

[10] https://opportunity.businessroundtable.org/ourcommitment/

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 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 9 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), Fahlenbrach, Rageth, and Stulz (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 9 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 un-tabulated 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.

5.3. 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 or might not be credible. On the one hand, they might join the UNGC to greenwash their image. On the other hand, joining the UNGC could be a credible ESG commitment because 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.[11] 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 544 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 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.

[11] The lagged ESG inside views do not significantly predict the chance of a firm's joining the UNGC.

Table 10 Panel A shows the results. Without control variables, columns (1) to (3) indicate that UNGC firms improve their ESG inside view by 2.4% to 3.6% standard deviation more than control firms for the S and G categories with statistical significance at the 5% level. After controlling for firm characteristics, the coefficients on the *UNGC* indicator becomes less statistically significant (at the 10% level in column (6)), but the economic magnitude remains similar. 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 two statistically significant results are with institutional ownership and organizational complexity. The corresponding coefficients are negative, implying that employees view governance to improve less in UNGC firms that are complex or have high institutional ownership.

Table 10 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.[12]

5.4. 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).[13]

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 7th 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

[12] 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.

[13] 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 IA4, I consider cyber-attacks as such shocks, as Akey et al. (2021) argue that a cyber-attack increases a firm's incentive to improve its ESG image to help repair its reputation, and they find that firms increase their ESG ratings and charity donations after a cyber-attack. Nonetheless, consistent with my theory, I find that the inside view of ESG practices hardly improves after a cyber-attack.

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^{th} percentile) to ensure that the inside view measure can capture meaningful changes in a firm's practices related to the court ruling.[14]

Table 11 Panel A shows the results. The coefficient on the *Treat*Post* interaction is positive and statistically significant at the 5% 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 (column (5)). While there is no significant result for the E category, the same test for the G 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.[15] 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 statistically insignificant, assuring the parallel trend assumption in a typical difference-in-differences test. Figure 4 plots those coefficients.

[14] Without this minimum-reviews restriction, the improvement in the S inside view becomes statistically insignificant, but its magnitude becomes larger. An alternative way to ensure that my inside view 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 IA3 and find statistically significant results similar to my main findings.

[15] 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)).

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 6.4% 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.

6. 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.

6.1. Measurement concerns

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, however, could 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 IA3 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 -0.02, 0.16, and 0.10 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 the situation in which an employee mentions a pro-ESG practice in the cons section.[16]

6.2. Selection concerns

The inside view measure might also suffer from selection biases. One common bias with reviews data is that people with extreme views are more likely to write a review. If averaging across the views of many employees fails to eliminate this bias, I might observe a U-shaped distribution of their inside views: a high frequency of an extremely high or extremely low inside view. However, Figure 3 Panel A shows that the distribution of the inside view on each ESG category is bell-shaped, not U-shaped. The bell shape is unlikely an artifact of my ESG word lists. Figure 3 Panel B shows that the distributions of the numerical ratings on Glassdoor are also bell-shaped.

Another selection concern is that employees could discuss ESG issues more in an ESG-related industry, such as oil and gas. Thus, the inside view measure could capture ESG-relatedness, instead of a firm's internal ESG practices. To control for ESG-relatedness, I have industry fixed effects and firm characteristics in all my tests. In addition, ESG-conscious employees, who might judge a firm's ESG practices critically, are more likely to work in an ESG-friendly firm. So, for an ESG-friendly firm, the employees' inside view could be biased downwards. Conversely, employees who are indifferent to ESG issues might self-select into ESG-unfriendly firms. These employees might discuss ESG issues less often, making their reviews less informative about ESG practices.

[16] 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.

Nonetheless, I show in Section 4 that the inside view is informative in predicting future ESG-related outcomes. Also, removing reviews by high-ranked employees, who often have more outside options than others to self-select into ESG-friendly firms, does not significantly change the inside view or its predictive power (see the Internet Appendix IA2).

Finally, despite Glassdoor's efforts to ensure review quality, firms might have an incentive to manipulate reviews given the site's popularity. For example, a *Wall Street Journal* article argues that some firms encourage employees to write reviews on Glassdoor.[17] 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.[18]

6.3. 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 3 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,

[17] https://www.wsj.com/articles/companies-manipulate-glassdoor-by-inflating-rankings-and-pressuring-employees-11548171977

[18] 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.

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 with the baseline measure, at 0.74, 0.76, and 0.79 for the E, S, and G categories, respectively. In addition, removing those reviews does not change my main results.

7. Conclusion

In this paper, I study whether employees have useful information about firms' environmental, social, and governance (ESG) practices by analyzing 10.4 million anonymous employee reviews. I find that 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, does 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.

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Figure 1: Trends in employees' attention to ESG issues

Figure 1a plots the percentage of ESG catchphrases, namely *ESG*, *CSR*, *sustainable*, and *sustainability*, in an average review from 2008 to 2021. Figure 1b plots the average attention to E, S, and G issues across reviews for each calendar quarter between 2008 and 2021. Before aggregating to the quarter level, I measure the attention to E, S, or G category for each review by the percentage of E, S, or G words, respectively, from my comprehensive ESG dictionaries, in each review.

Figure 1a: Attention to ESG catchphrases

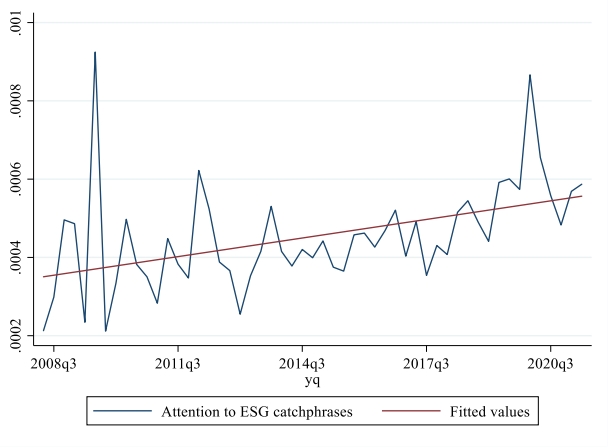


Figure 1b: Attention to E, S, and G issues more broadly

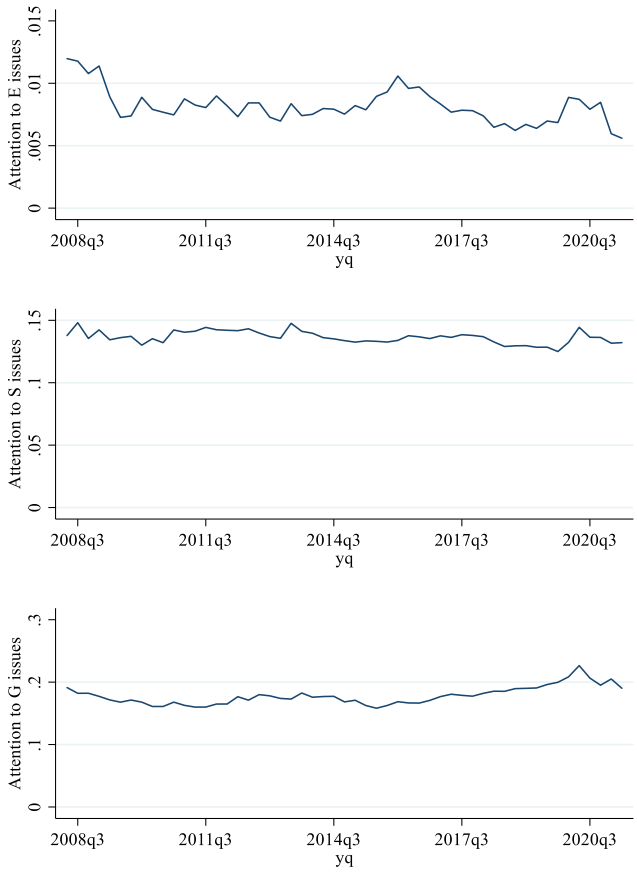


Figure 2: Aggregate trend in the inside view

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.

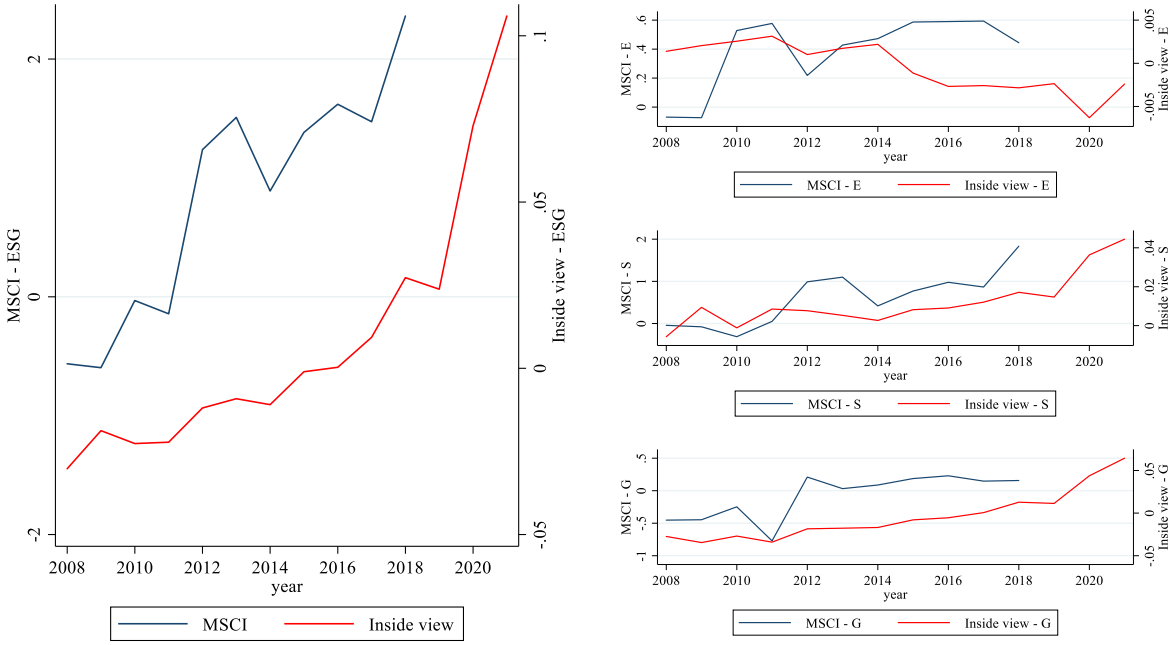
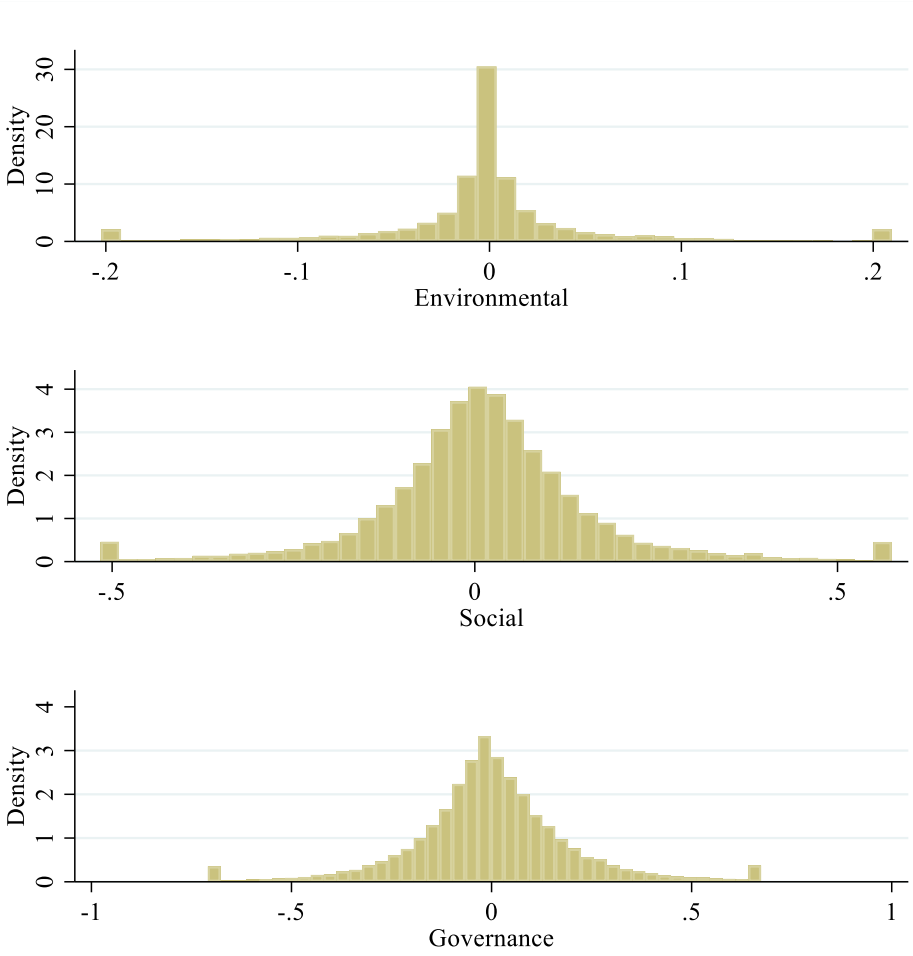


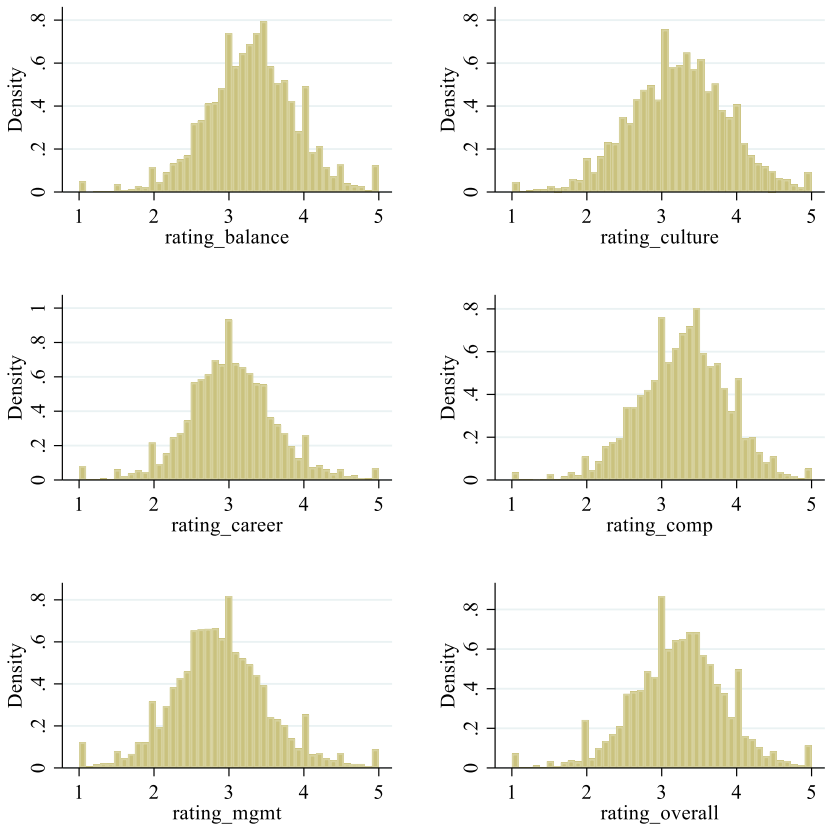
Figure 3: Distribution of ESG inside views

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

Figure 4: 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 Appendix B. The 95% confidence intervals are based on standard errors that are clustered at the state level.

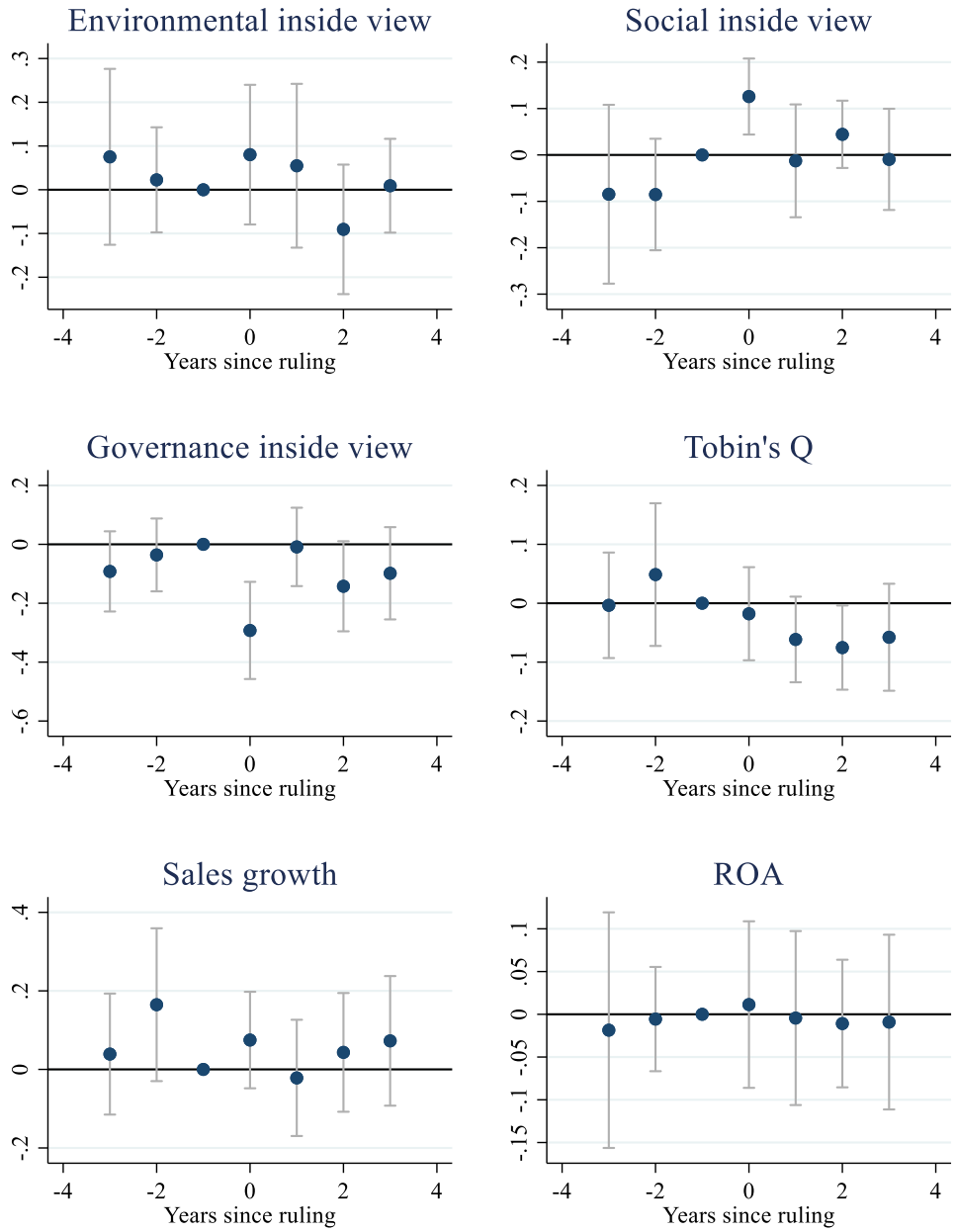


Table 1: Summary statistics

This table presents summary statistics for the main variables in my sample. Panel A presents summary statistics at the firm-year level. Panel B presents summary statistics at the review level. See Appendix B for variable description. 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	22,186	108.46	360.30	3.00	28.00	206.00
Inside view E	22,186	-0.00	0.04	-0.02	0.00	0.02
Inside view S	22,186	0.01	0.15	-0.14	0.00	0.17
Inside view G	22,186	-0.00	0.20	-0.22	0.00	0.22
MSCI rating of E	12,281	0.40	1.02	0.00	0.00	2.00
MSCI rating of S	12,287	0.63	2.15	-2.00	0.00	3.00
MSCI rating of G	7,202	-0.22	0.78	-1.00	0.00	1.00
BRT	25,998	0.08	0.27	0.00	0.00	0.00
UNGC	25,998	0.04	0.20	0.00	0.00	0.00
E violation indicator	25,998	0.13	0.33	0.00	0.00	1.00
S violation indicator	25,998	0.26	0.44	0.00	0.00	1.00
E violation penalty/sales	20,305	2.50	15.70	0.00	0.00	0.00
S violation penalty/sales	20,305	50.60	285.55	0.00	0.00	15.62
Carbon emission/sales (ton/mil)	4,208	418.72	1167.63	5.66	43.22	860.70
Fortune Best 100 indicator	25,998	0.02	0.13	0.00	0.00	0.00
IC weakness indicator	20,462	0.04	0.19	0.00	0.00	0.00
Number of IC weaknesses	20,462	0.16	1.21	0.00	0.00	0.00
Accounting malpractice lawsuits	20,425	0.01	0.18	0.00	0.00	0.00
Shareholder activism filings	20,507	0.56	1.42	0.00	0.00	2.00
Downside volatility	19,170	0.02	0.01	0.01	0.02	0.03
Tail risk	19,177	0.08	0.05	0.03	0.06	0.13
Size (log assets)	20,085	7.95	1.95	5.52	7.86	10.49
Tobin's Q	17,976	2.12	1.79	0.99	1.56	3.83
Leverage (liabilities/assets)	20,020	0.29	0.26	0.00	0.24	0.69
ROA (return on assets)	19,137	0.11	0.23	0.01	0.12	0.25
Sales growth	19,375	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	2,444,040	.43	.49	0	1
Review contains E word	2,444,040	.02	.13	0	1
Review contains S word	2,444,040	.24	.42	0	1
Review contains G word	2,444,040	.28	.45	0	1
Word count - Pros	2,444,040	104.85	117.58	2	11118
Word count - Cons	2,444,040	148.48	245.08	2	23926
Word count - Total	2,444,040	253.32	306.35	4	24453
Inside view E	2,444,040	0	.16	-14.29	9.09
Inside view S	2,444,040	.02	.6	-11.11	10.53
Inside view G	2,444,040	.02	.7	-14.29	11.11
Employee high-ranked	2,444,040	.17	.38	0	1
Overall rating not extreme	2,444,040	.67	.47	0	1

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	0.12***	0.11***	0.05**	0.17***	0.09**	0.15***
E	-0.02*	-0.05**	-0.02	0.04**	-0.01	-0.03
S	0.11***	0.13***	0.05**	0.14***	0.16***	0.12***
G	0.07***	0.08**	0.01	0.10***	0.04	0.10***

Correlation with the Refinitiv ESG rating

	Full sample	Consumer	Manufacturing	High tech	Healthcare	Others
ESG	0.05***	0.08***	0.07***	0.03	-0.02	0.10***
E	-0.02**	-0.05**	-0.01	0.03	-0.06	-0.01
S	0.09***	0.11***	0.08***	0.06***	0.10**	0.11***
G	0.00	0.02	0.00	0.02	-0.01	0.02

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

Table 2: ESG word lists

In this table, 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, hivaid, 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	HP Inc.	Linkedin
Portland General Electric	Salesforce	Simmons Bank
Ashland	Sunedison	Nvidia
Sempra Energy	Umpqua Bank	Salesforce
Cameron	Old National Bancorp	Facebook
Bottom 5		
Chemours	Symetra	Paccar
Peabody	Firstmerit	Laureate Education
Altria	Fleetcor	Capital Bank
Southwestern Energy	Precision Castparts	Kar Global
Alpha Natural Resources	Colony Capital	Sterling Bancorp

Panel B: Select reviews from the top and bottom firms

Company	Employee title	Year	Overall rating	Select text
Top E - SunEdison	Business Development	2015	5.0	Company has excellent potential to capture market share in a rapidly growing sector (**renewable energy**). With the recent acquisition of First Wind the company is now expanding beyond **solar into wind energy**. Combined with our work on **energy storage technology** the company is well positioned ...
	Project Engineer	2014	1.0	**It's solar**. Great way to help **the world's energy shortage** and **go green**. Some very excellent and helpful employees…
Bottom E - Alpha Natural Resources	Anonymous Employee	2016	3.0	The **coal industry** is on the decline and it is **unsustainable**. Everyone is in fear for their jobs and livelihood and are leaving the state in droves.
	Environmental Engineer	2015	2.0	Down turn in the market and **the EPA's war on coal** is taking an undue toll on the company and the industry as a whole.
Top S - HP Inc.	Consultant	2018	5.0	Ethical**,** highly engaged in **Diversity & Inclusion**. The HP Way defined way back at company formation provides the backbone of the ethos to do the right thing, attract talent based on talent - regardless of politics, **religious, gender, sexual orientation, racial** or any other **discrimination.**
	Anonymous Employee	2015	3.0	Great campus, and the people working there are great. Has a nice gym, **paid time for volunteering** each month and working out. Volleyball tournaments…
Bottom S - Colony Capital	Anonymous Employee	2015	3.0	Overall, expect to have **long hours** and **scarce human resources**. Middle management feels your pain and will express their sympathy. The **hiring pace** is usually lacking behind the **turn-over rate.**
	Analyst	2017	1.0	**Work environment - hostile** ... The CEO also **threatened to take away bonuses** if everyone wasn't putting in **over 13-hour days** and sent a company-wide email **berating employees** about not being in the office at 7:00am.
Top G - Linkedin	Sales	2014	4.0	... Jeff Weiner is an inspiration, and the other execs are all driving towards a **shared vision**. The **culture and values** of the company are held in high esteem and they're **felt throughout** the organizations…
	Anonymous Employee	2017	5.0	**Company values and adherence** to them (be open, honest & constructive). **Transparency** is not just a word, it's shown in actions by the executive team. The **outstanding leadership** team and commitment to **developing leaders** within the company…
Bottom G - Sterling Bancorp	Analyst	2018	2.0	Very **disorganized** post-Astoria merger... **unprepared** for systems merger. From an internal view the bank appears to be **growing too quickly** and thus does not have a good "handle" on **day-to-day operations**
	Client Service	2016	1.0	Very **disorganized**. Your **work ethic** 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 for Panel A, the associated penalty relative to the firm's sales for Panel B, and the ratio of carbon emission to sales for Panel C. 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 the variables are defined in Appendix B. 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 an indicator for E violation

	(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$_t$	0.01	0.01	0.00	0.02	0.02	0.01	0.01	0.01	0.00
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
MSCI$_t$		-0.08*	-0.07*		-0.08*	-0.07		-0.09*	-0.08*
		(0.04)	(0.04)		(0.04)	(0.04)		(0.05)	(0.05)
Y_t			1.01***			1.14***			0.81***
			(0.14)			(0.14)			(0.15)
Obs.	12806	9688	9688	11536	9687	9687	10262	8628	8628
Pseudo R^2	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 E violation penalty 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$_t$	0.03*	0.03*	0.03*	0.01	0.01	0.02	-0.00	-0.00	0.00
	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
MSCI$_t$		-0.07***	-0.07***		-0.05***	-0.05***		-0.06***	-0.06***
		(0.02)	(0.02)		(0.02)	(0.02)		(0.02)	(0.02)
Y_t			0.11***			0.10***			0.10***
			(0.03)			(0.02)			(0.03)
Obs.	13437	10176	10176	11788	10057	10057	10205	8785	8785
R^2	0.10	0.10	0.12	0.10	0.10	0.11	0.10	0.10	0.11
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 Carbon emission 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$_t$	-0.03	-0.04*	0.00	-0.04*	-0.04*	0.00	-0.04*	-0.04*	0.01
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)
MSCI$_t$		-0.09***	-0.00		-0.08***	0.00		-0.08***	-0.00
		(0.03)	(0.00)		(0.03)	(0.01)		(0.03)	(0.01)
Y_t			0.92***			0.87***			0.82***
			(0.01)			(0.02)			(0.04)
Obs.	3191	3025	2717	2893	2767	2314	2579	2457	1928
R^2	0.52	0.53	0.97	0.52	0.53	0.95	0.51	0.52	0.93
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$_t$	0.54***	0.49***	0.13	0.51***	0.48***	0.19**	0.47***	0.42***	0.15*
	(0.07)	(0.10)	(0.17)	(0.07)	(0.09)	(0.08)	(0.08)	(0.09)	(0.09)
MSCI$_t$		0.84***	0.44***		0.78***	0.35***		0.75***	0.29**
		(0.10)	(0.10)		(0.10)	(0.11)		(0.12)	(0.12)
Y_t			6.34***			5.38***			4.81***
			(0.30)			(0.31)			(0.34)
Obs.	10942	7595	7595	9784	7477	7477	8537	6485	6485
Pseudo R^2	0.19	0.27	0.72	0.19	0.25	0.60	0.18	0.24	0.52
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$_t$	-0.02***	-0.02***	-0.02***	-0.01	-0.01	-0.01	-0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
MSCI$_t$		0.01	0.01		0.01	0.01		0.02	0.02
		(0.02)	(0.02)		(0.02)	(0.01)		(0.02)	(0.02)
Y_t			0.11***			0.08***			0.10***
			(0.03)			(0.02)			(0.02)
Obs.	13437	10182	10182	11788	10063	10063	10205	8791	8791
R^2	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$_t$	0.03***	0.03***	0.01**	0.03***	0.02***	0.00	0.03***	0.02**	0.00
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
MSCI$_t$		0.08***	0.01***		0.09***	0.02***		0.09***	0.03***
		(0.01)	(0.00)		(0.02)	(0.01)		(0.02)	(0.01)
Y_t			0.88***			0.84***			0.81***
			(0.02)			(0.03)			(0.04)
Obs.	13326	10104	9917	11733	9953	9728	10168	8775	8579
R^2	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$_t$	-0.18***	-0.13	-0.16*	-0.15**	-0.18*	-0.19*	-0.16***	0.02	0.02
	(0.05)	(0.09)	(0.09)	(0.06)	(0.10)	(0.10)	(0.06)	(0.08)	(0.08)
MSCI$_t$		-0.03	-0.01		0.08	0.08		-0.09	-0.08
		(0.14)	(0.13)		(0.14)	(0.14)		(0.15)	(0.16)
Y_t			2.11***			1.00***			0.64**
			(0.27)			(0.34)			(0.32)
Obs.	13157	5266	5266	11544	5096	5096	9992	4494	4494
Pseudo R^2	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$_t$	-0.18*	-0.23*	-0.20	-0.10	-0.06	0.05	-0.09	-0.20	-0.16
	(0.09)	(0.13)	(0.13)	(0.15)	(0.24)	(0.23)	(0.14)	(0.28)	(0.29)
MSCI$_t$		-0.11	-0.00		-0.06	0.01		-0.12	-0.05
		(0.12)	(0.13)		(0.15)	(0.17)		(0.15)	(0.15)
Y_t			0.31***			0.40***			0.43***
			(0.10)			(0.10)			(0.14)
Obs.	10105	3741	3741	8377	3129	3129	6736	2775	2775
Pseudo R^2	0.23	0.32	0.34	0.13	0.25	0.28	0.11	0.24	0.26
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$_t$	-0.06**	0.01	-0.02	-0.09***	-0.06	-0.08**	-0.11***	-0.09**	-0.10***
	(0.02)	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.04)	(0.04)
MSCI$_t$		0.06	0.07		-0.00	-0.00		0.01	0.01
		(0.05)	(0.05)		(0.05)	(0.05)		(0.05)	(0.05)
Y_t			0.35***			0.28***			0.21***
			(0.02)			(0.02)			(0.02)
Obs.	13488	5593	5593	11918	5512	5512	10341	4893	4893
Pseudo R^2	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$_t$	0.49***	0.28**	0.13	0.53***	0.34***	0.32**	0.55***	0.36***	0.46***
	(0.09)	(0.11)	(0.18)	(0.09)	(0.11)	(0.15)	(0.08)	(0.10)	(0.12)
MSCI$_t$		0.25**	0.23		0.29***	0.34**		0.22*	0.17
		(0.11)	(0.17)		(0.11)	(0.15)		(0.11)	(0.15)
Y_t			7.19***			6.38***			5.96***
			(0.51)			(0.56)			(0.56)
Obs.	10192	4050	4050	9040	3999	3999	7813	3467	3467
Pseudo R^2	0.19	0.20	0.74	0.19	0.22	0.67	0.19	0.22	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$_t$	0.05***	0.03***	0.03***	0.05***	0.02**	0.02**	0.03***	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
MSCI$_t$		0.01	0.01		-0.00	-0.01		0.01	0.00
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
Y_t			0.17***			0.01			0.10***
			(0.02)			(0.02)			(0.02)
Obs.	13210	5622	5620	11599	5542	5539	10037	4866	4864
R^2	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$_t$	0.10***	0.05***	0.01	0.10***	0.05***	0.00	0.08***	0.04***	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
MSCI$_t$		-0.03***	-0.00		-0.04***	-0.01*		-0.02	-0.00
		(0.01)	(0.00)		(0.01)	(0.01)		(0.01)	(0.01)
Y_t			0.91***			0.88***			0.80***
			(0.02)			(0.05)			(0.07)
Obs.	13326	5644	5522	11733	5585	5438	10168	4909	4792
R^2	0.22	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)
	Instrumenting inside view by its 2-year lag				*Instrumenting inside view by its 5-year lag*			
	Tobin's Q_{t+1}		Sales growth$_{t+1}$		Tobin's Q_{t+1}		Sales growth$_{t+1}$	
Inside view$_t$	.591***	.512***	.279***	.249***	.427***	.354**	.282***	.256**
	(.103)	(.107)	(.075)	(.079)	(.138)	(.14)	(.106)	(.105)
Comp. rating$_t$		.088*		.035		.181***		.047
		(.047)		(.029)		(.065)		(.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: 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$_t$	-0.00		-0.00	0.00		0.00	0.00		-0.00
	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)
S Inside view$_t$	-0.00		-0.00	0.01		0.00	0.00		0.00
	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)
G Inside view$_t$	-0.02***		-0.01**	-0.02***		-0.01	-0.01*		-0.02**
	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)
E MSCI$_t$		-0.01**	-0.02**		0.01	0.00		0.01*	0.01
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
S MSCI$_t$		0.01	0.01		-0.00	-0.00		-0.01	-0.01
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
G MSCI$_t$		-0.01	-0.02		-0.00	-0.01		0.00	-0.01
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
Y_t	0.48***	0.46***		0.35***	0.32***		0.29***	0.29***	
	(0.01)	(0.02)		(0.02)	(0.02)		(0.02)	(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$_t$	-0.00		-0.00	-0.00		-0.00	0.00		-0.00
	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)
S Inside view$_t$	-0.00		-0.00	0.00		0.00	0.01		0.00
	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)
G Inside view$_t$	-0.02***		-0.01**	-0.02***		-0.01	-0.01**		-0.02**
	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)
E MSCI$_t$		-0.01*	-0.02**		0.01	0.00		0.01*	0.01
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
S MSCI$_t$		0.01	0.01		-0.01	-0.00		-0.01	-0.01
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
G MSCI$_t$		-0.01	-0.02		-0.00	-0.01		-0.00	-0.01
		(0.01)	(0.01)		(0.01)	(0.01)		(0.01)	(0.01)
Y_t	0.46***	0.46***		0.34***	0.31***		0.28***	0.28***	
	(0.01)	(0.01)		(0.01)	(0.02)		(0.02)	(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 8: 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, 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	0.000	0.001	-0.000	-0.000	-0.000	-0.001
	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)	(0.004)
Policies x High institutional ownership			-0.000			-0.003**
			(0.001)			(0.001)
Policies x High analyst coverage			0.003			0.003
			(0.003)			(0.004)
Policies x High complexity			-0.001			-0.000
			(0.002)			(0.002)
Policies x High advertising intensity			-0.001			-0.000
			(0.001)			(0.002)
Policies x High E inside view			0.001			0.001
			(0.001)			(0.001)
Controversies		0.000	0.000		0.002*	0.002
		(0.001)	(0.001)		(0.001)	(0.001)
Observations	11444	10435	10066	11297	10288	9920
R-squared	0.035	0.036	0.037	0.195	0.196	0.202
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	0.012***	0.012***	0.003	-0.000	-0.001	-0.012
	(0.002)	(0.002)	(0.007)	(0.002)	(0.003)	(0.008)
Policies x High institutional ownership			0.009***			0.007**
			(0.003)			(0.004)
Policies x High analyst coverage			0.001			0.010
			(0.006)			(0.008)
Policies x High complexity			0.002			0.001
			(0.004)			(0.005)
Policies x High advertising intensity			-0.004			-0.009**
			(0.003)			(0.004)
Policies x High S inside view			0.003			0.007***
			(0.003)			(0.003)
Controversies		-0.009***	-0.007***		-0.005**	-0.004
		(0.002)	(0.002)		(0.003)	(0.003)
Observations	11449	10441	10072	11306	10298	9930
R-squared	0.023	0.028	0.045	0.216	0.220	0.239
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	0.004*	0.001	-0.011	0.003	0.002	0.001
	(0.002)	(0.003)	(0.011)	(0.003)	(0.003)	(0.012)
Policies x High institutional ownership			0.001			-0.003
			(0.005)			(0.006)
Policies x High analyst coverage			0.022**			0.006
			(0.009)			(0.011)
Policies x High complexity			-0.013**			-0.007
			(0.006)			(0.008)
Policies x High advertising intensity			0.004			-0.002
			(0.005)			(0.006)
Policies x High G inside view			-0.001			0.008
			(0.005)			(0.005)
Controversies		-0.008***	-0.006**		-0.007*	-0.005
		(0.003)	(0.003)		(0.004)	(0.003)
Observations	6588	5923	5567	6436	5764	5397
R-squared	0.026	0.039	0.062	0.291	0.297	0.323
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 9: 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	-0.114	-0.025	0.037	1.078***	0.225	0.245
	(0.160)	(0.113)	(0.100)	(0.266)	(0.294)	(0.224)
BRT x High institutional ownership				0.209	0.127	0.007
				(0.249)	(0.288)	(0.203)
BRT x High analyst coverage				-0.217	-0.468	0.217
				(0.374)	(0.430)	(0.284)
BRT x High complexity				-1.111***	0.088	-0.358
				(0.242)	(0.516)	(0.282)
BRT x High advertising intensity				-0.056	0.270	-0.031
				(0.239)	(0.320)	(0.248)
BRT x High COVID exposure				0.116	-0.172	0.147
				(0.259)	(0.376)	(0.220)
Observations	1022	1022	1022	880	880	880
R-squared	0.067	0.039	0.060	0.072	0.049	0.066
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	0.038	-0.435	-0.010	0.035	-0.028	0.213
	(0.178)	(0.260)	(0.157)	(0.188)	(0.112)	(0.132)
Observations	662	352	514	495	546	471
R-squared	0.243	0.168	0.109	0.114	0.079	0.191
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 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	-.007	.024**	.036**	-.008	.013	.03*	-.015	.019	.14***
	(.006)	(.01)	(.016)	(.006)	(.012)	(.016)	(.01)	(.031)	(.048)
x High inst. ownership							.003	-.022	-.095***
							(.007)	(.024)	(.03)
x High analyst coverage							-.004	-.02	-.015
							(.013)	(.018)	(.042)
x High complexity							.01	-.01	-.067*
							(.014)	(.017)	(.037)
x High advertising intensity							.003	.047**	-.022
							(.006)	(.021)	(.029)
Observations	642	642	642	642	642	642	642	642	642
R-squared	.071	.072	.07	.083	.087	.093	.086	.097	.112
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	-.01	.038***	-.004	.03	.046*
	(.004)	(.007)	(.013)	(.012)	(.021)	(.024)
Observations	219	419	296	346	291	349
R-squared	.278	.187	.317	.153	.225	.183
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 11: 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 Appendix B. 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	-.025			.069**			-.069		
	(.03)			(.033)			(.071)		
Treat * Post (t)		.044	.08		.183***	.126***		-.246***	-.292***
		(.037)	(.079)		(.062)	(.041)		(.078)	(.082)
Treat * Post (t+1)		.018	.055		.044	-.013		.038	-.009
		(.046)	(.093)		(.09)	(.06)		(.059)	(.066)
Treat * Post (t+2)		-.127	-.091		.101***	.044		-.096	-.142*
		(.101)	(.074)		(.028)	(.036)		(.078)	(.076)
Treat * Post (t+3)		-.027	.009		.047	-.01		-.052	-.098
		(.04)	(.053)		(.039)	(.054)		(.072)	(.078)
Treat * Pre (t-3)			.075			-.085			-.092
			(.1)			(.096)			(.068)
Treat * Pre (t-2)			.023			-.085			-.036
			(.06)			(.06)			(.061)
Observations	16353	16353	16353	16353	16353	16353	16353	16353	16353
R-squared	.22	.221	.221	.279	.279	.279	.4	.4	.4
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

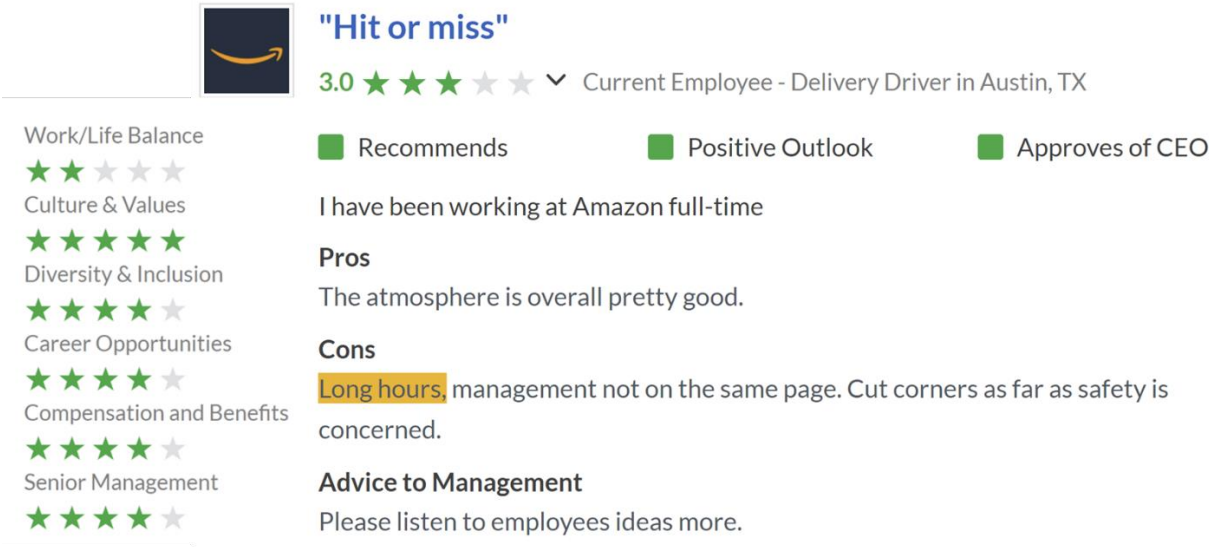
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Tobin's Q			Sales growth			Return on assets	
Treat * Post	-.064			.001			.005		
	(.05)			(.057)			(.034)		
Treat * Post (t)		-.027	-.018		.018	.075		.022	.011
		(.055)	(.039)		(.069)	(.061)		(.026)	(.048)
Treat * Post (t+1)		-.07*	-.062*		-.078	-.022		.007	-.004
		(.041)	(.036)		(.049)	(.074)		(.041)	(.051)
Treat * Post (t+2)		-.084	-.075**		-.013	.043		.001	-.011
		(.058)	(.036)		(.064)	(.075)		(.043)	(.037)
Treat * Post (t+3)		-.066	-.058		.016	.073		.002	-.009
		(.057)	(.045)		(.066)	(.082)		(.043)	(.051)
Treat * Pre (t-3)			-.004			.039			-.019
			(.045)			(.077)			(.068)
Treat * Pre (t-2)			.049			.165*			-.006
			(.06)			(.097)			(.03)
Observations	.042***	.042***	.041***	-.003	-.003	-.009	.002	.002	.003
R-squared	(.003)	(.004)	(.003)	(.004)	(.004)	(.006)	(.002)	(.002)	(.004)
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*

Appendix A: 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



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
Total	**301,551**	**91,963**

Appendix B: 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
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

Variable	Definition	Source
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-txditc+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)

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