Do Director Skill Sets Affect Firm ESG Responsibilities?

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Abstract

This study investigates the relationship between the environmental, social, and governance (ESG)-related skill sets of firms' board directors and corporate ESG performance. Looking at S&P 1500 firms from 2009 to 2022 which includes the years of heightened ESG awareness, my analysis does not support the notion that directors' ESG skills enhance firms' ESG performance, and I uncover a prevalent trend of "competency washing" among firms. Specifically, when examining ESG dimensions including environmental, human capital, and others, I find no evidence that directors' skill sets contribute to improved corporate ESG performance; in fact, such skill sets may even lead to worse firm ESG outcomes. However, I do reveal evidence indicating that director skill sets in ESG matters increase the likelihood of incorporating ESG objectives into CEO contracts. Additionally, when segmenting my sample into S&P 500 firms and those outside the index, I find that firm size matters — directors' ESG skill sets are more influential in affecting CEO contracts within S&P 500 firms.

Keywords: corporate governance, corporate social responsibility, executive

compensation, managerial incentives, ESG

JEL Classification: G30, G32

1. Introduction

Prior literature has shown that corporate boards of directors play an important role in their firm performance (Cashman, Gillan, and Jun, 2012; Field, Lowry, and Mkrtchyan, 2013; Burt, Hrdlicka, and Harford, 2020). Delving deeper into how directors make a difference, research evidence reveals that directors' experience and skill sets help improve the performance of their firms (Shiah-Hou and Cheng, 2012; Gilani, Keasey, and Vallascas, 2021; Gopalan, Gormley, and Kalda, 2021). While prior studies mostly focus on how directors affect the financial performance of companies, few look at whether and how corporate non-financial performance is influenced by its directors' expertise. Thus, the increased public environmental, social, and governance (ESG) consciousness over the past decade makes for fertile ground for research in non-financial performance. The list of ESG issues has been getting lengthier over recent years: climate change, water scarcity, pollution, worker welfare, supply chain scandals, COVID-19, and so on. Facing mounting public pressure, the ability of companies to identify and manage ESG issues is crucial. The NYU Stern Center for Sustainable Business analyzes 1188 Fortune 100 board directors to show that 29% of directors had relevant ESG credentials in 2018.[1] According to the *2021 Inside the Public Company Boardroom* report by the National Association of Corporate Directors (NACD), the number of directors with strong ESG skills has doubled since 2018 as companies increasingly value directors and candidates with these in-demand qualities.[2]

The evidence above motivates my primary question: does the ESG expertise of directors improve the ESG performance of their companies? Further, one of the main responsibilities of

[1] Please see detailed information at: https://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/centers-of-research/center-sustainable-business/research/research-initiatives/fortune-100-board-members-lacking-esg-credentials

[2] Source: https://www.nacdonline.org/all-governance/governance-resources/governance-surveys/surveys-benchmarking/2023-nacd-public-company-board-practices-and-oversight-survey/

directors is to propose and construct the executive compensation plans of their companies. Since 46% of respondents in the *2023 NACD Public Company Board Practices and Oversight Survey* indicate that their company now has established climate targets, and that they are on track or ahead of schedule in reaching these targets, I wonder whether the inclusion of ESG incentives in executive compensation plans is one channel through which director ESG skill sets cast influence on corporate ESG performance. Based on a sample covering S&P 1500 firms from 2009 through 2022, a pivotal era characterized by escalating ESG consciousness following the 2016 Paris Climate Agreement, I gather ESG-skill-set data of directors from the Institutional Shareholder Services. I further hand-collect information on ESG contracting from executive compensation plans disclosed in proxy statements filed with the Securities Exchange Commissions (SEC). I also obtain data on corporation ESG violations from *Good Jobs First*.

My sample period includes the 2016 Paris Agreement, an unprecedented and durable framework for global actions confronting the climate crisis. The Agreement is aimed at avoiding catastrophic planetary warming and building resilience around the world to the impacts of climate change. It marks the beginning of a shift towards net-zero emissions from a world where firms pursue financial profits without having much concern about their stakeholders.

I document several new findings. In general, firms are increasing their focus on ESG by adding ESG targets to CEO incentive plans. Among the three categories that I look at, human capital management (HCM) receives the most attention from firms. While prior literature illustrates the role director experience and expertise play in improving the financial performance of firms, I find no supporting evidence that the ESG skill sets of directors in general improve corporate ESG performance. However, looking deeper into whether director skills make a difference in the establishment of CEO incentive plans, I document that both the level of director

ESG credentials at the firm level and the fraction of directors with ESG skills lead to an increase in the probability of ESG targets being added to the annual incentive plan of CEOs.

Additionally, I observe multiple different conclusions between using the S&P 1500 sample without S&P 500 firms and using the S&P 500 sample. On the one hand, looking from both environmental and other ESG aspects, the S&P 500 sample leads to a conclusion that both the level of director skill sets and the fraction of directors with expertise in other ESG aspects increase the likelihood of incorporating relevant objectives into CEO incentive plans. Yet, the results based on S&P 1500 firms outside the S&P 500 reveal no effect from either the level of director skill sets in other ESG aspects or the fraction of directors with environmental expertise. On the other hand, when I do find evidence in S&P 1500 firms outside the S&P 500 that the appointment of directors with HCM skills matters to the inclusion of HCM targets in the incentive plan of CEOs, the effect does not show up in S&P 500 firms.

This study contributes to several strands of literature. To the best of my knowledge, it is the first to examine how the adoption of ESG contracting affects firm-level outcomes within each aspect of ESG based on a sample of S&P 1500 companies. While many studies have focused on whether ESG contracting indeed has any effect on ESG performance, they mainly look at the environmental side on the basis of a relatively small sample (Flammer, Hong, and Minor, 2019; Bebchuk and Tallarita, 2022). Drempetic, Klein, and Zwergel (2020) show that firm size is positively correlated with corporate sustainability performance. To investigate whether previous results apply to relatively small firms, I use samples of both S&P 1500 firms outside the S&P 500 and S&P 500 firms. This allows us to disentangle the situation for both samples and link the results to their characteristics.

After clearly categorizing ESG targets as targets related to the environment, HCM, and other ESG aspects following the *ESG + Incentives 2023 Report* by Harvard Law School, my paper provides insights in a broader scope and compares the situation for S&P 500 companies and S&P 1500 companies. In doing so, I reach conclusions that contrast with Flammer, Hong, and Minor (2019) and provide evidence of firms having "window dressing" behaviors. Moreover, my paper sheds light on the influence of director skill sets by investigating how it can influence the construction of cash incentive compensation of CEOs and further how it can impact company performance. Abundant evidence indicates that companies can benefit from the skills, credentials, and experience of their directors (Shiah-Hou and Cheng, 2012; Field, Souther and Yore, 2020; Gilani, Keasey, and Vallascas, 2021; Gopalan, Gormley, and Kalda, 2021). Yet, previous literature mainly looks at financial performance and pays little attention to non-financial outcomes. My paper attempts to fill this void by extending analyses to corporate social responsibility performance.

The outline of the paper is as follows. Section 2 introduces the cornerstone of related literature on director skill sets, ESG, and executive compensation. Section 3 discusses the data. Section 4 explains the methodology. Section 5 presents my results and Section 6 concludes.

2. Literature Review

2.1 Literature on the Effect of Director Skill Sets on Firms

This paper contributes to the vast literature on director skill sets by extending the research about the effect of director skill sets on non-financial aspects of corporate performance. Aside from what has been discussed, director credentials and experience are also vital to firms. Effective boards need a mix of skills and experience across their membership, and a boardroom culture that enables those different perspectives to be brought to bear on the key issues facing the company.

Good boards ensure that the company operates in an ethical and appropriate way and has a corporate culture that is conducive to long-term value creation in the interests of all stakeholders. One of the main roles of the board of directors is to approve and monitor the compensation of its top management. More specifically, the board of directors forms an executive compensation committee that will set the compensation plans of its executives. In this process, board members are likely to integrate their own preferences and experience into the plans. For example, board members who used to oversee customer services may be more concerned about customer satisfaction and be more likely to propose adding incentives related to customer satisfaction to executive compensation plans.

Researchers have achieved remarkable results as to how director skill sets affect firms. Westphal and Fredrickson (2001) show that the experience of new CEOs seems to predict corporate strategic change, but the effect disappears after accounting for board experience. Shiah-Hou and Cheng (2012) document a positive association between outside director experience and corporate accounting and market performance. Field, Souther, and Yore (2020) claim that specialized skills like prior leadership or finance experience increase the possibility of appointment but the likelihood is reduced for diverse directors. Gilani, Keasey, and Vallascas (2021) provide evidence that the skill set of financial expert independent directors in U.S. banks enables a better understanding of bank risks and access to external recapitalization choices, allowing those banks to opt for higher target capital ratios and adjust their capital structure faster when they are below the target. Chidambaran and Prabhala (2021) find that retention and promotion are less likely for age- and ethnicity-diverse directors, but both outcomes are more likely for skill-diverse directors, who have diverse skill sets. Schnatterly et al. (2021) provide results revealing that firm performance suffers when boards do not have enough expertise to handle firm risks and that firms

are able to improve their performance by reconfiguring their boards to better meet their needs. Gopalan, Gormley, and Kalda (2021) contend that firms take more risks when one of their directors experiences a corporate bankruptcy at another firm where they serve as directors in the meantime. They also show evidence that individuals actively learn from their experiences.

Holding the belief that directors' ESG skill sets should be utilized in an optimal manner and should help firms achieve better ESG performance, I anticipate that both the appointment of directors with ESG skill sets and the level of director skill sets should have an impact on both the number and dollar amount of corporate ESG violations. There are multiple alternative hypotheses. First, firms might hire directors with ESG skills just because their investors have strong ESG preference and prefer the appointment of directors with ESG credentials. In addition, it is possible that firms hire directors with ESG competency merely because their CEOs endorse ESG and are more likely to recommend directors with ESG capabilities. Meanwhile, directors also have the right to choose where to take their directorship. Directors with ESG skill sets probably only accept directorship in firms that advocate ESG. Lastly, firms might hire directors with ESG expertise to show their "efforts" in ESG but actually escape from their social responsibilities, as is called "window dressing". Overall, all hypotheses suggest that directors with ESG skills do not have to have any effect on their corporate ESG performance.

2.2 Literature on Executive Compensation

S&P 500 chief executives made $16.7 million in total compensation (salary, bonus, and stock options) on average in 2022, 272 times the pay of their median workers[3]. Average CEO pay fell from $18.3 million and 324 times median worker earnings in 2021 for companies in the same

[3] Source: https://www.reuters.com/business/ceo-pay-averaged-167-million-last-year-sp-500-companies-decline-2023-08-03/#:~:text=Aug%203%20(Reuters)%20%2D%20S%26P,fell%20with%20poor%20stock%20returns.

index. Yet, CEO pay is exponentially higher relative to the wage level of ordinary people. With respect to reasons why CEOs can receive such high levels of pay, extant research links the size of CEO compensation to firm size and CEO talent (Gabaix and Landier, 2008) as well as individual fame (Malmendier and Tate, 2009). On the other hand, CEO pay should theoretically be a tool used by shareholders to handle agency problems by means of board members realizing their functions of controlling how much a CEO will be paid. However, it seems that no matter how good or bad the performance of a company is, its CEO is always well paid and, in many cases, relatively overpaid. Despite companies' ongoing efforts to strengthen the pay-performance relation, Jensen and Murphy (1990) show that public and private political forces impose constraints reducing pay-performance sensitivity. Moreover, Bebchuk and Fried (2003) provide evidence that managerial power plays an important role in executive compensation. Coles, Daniel, and Naveen (2006) show that higher sensitivity of CEO wealth to stock volatility implements riskier policy choices. Gopalan et al. (2013) quantify the duration of executive pay and find that pay duration is longer in firms with more growth opportunities, more long-term assets, greater R&D intensity, lower risk, and better recent stock performance.

Nonetheless, the most essential problem is not how much CEOs are paid. Rather, how CEOs are paid and whether the compensation structure is closely tied to shareholder demands are the core issues. Will CEOs be well paid no matter how their companies perform? This depends on the compensation structure of CEOs. When the CEO compensation contracts are incomplete and less efficient, CEOs tend to be less motivated to fulfill their duties to guide their companies to realize profitability and achieve excellent business and operational performance. When the contracts are complete with specific goals, CEOs are more driven to make their own contributions to their companies. Therefore, the most direct way and very first step is to figure out whether CEOs

have incentives in their compensation plans and if so, whether shareholder needs are incorporated into such incentive plans. Since incentive plans allow the decision for CEO compensation to be based on quantitative or sometimes qualitative measures as well rather than merely at the discretion of the compensation committee, this may effectively restrain CEOs from indulgently lining their own pockets.

2.3 Literature on ESG-Targeted CEO compensation

According to the *ESG + Incentives 2023 Report* by Harvard Law School, 72% of S&P 500 companies applied ESG in incentive plans in 2023, which represents a net 2.8% year-to-year growth in companies using ESG metrics versus 23% growth last year. More specifically, HCM remains the most prevalent metric category, as is used by 68% of S&P 500 firms. Under this category, diversity and inclusion is the most prevalent metric, used by 55% of S&P 500 companies. Companies continue to move towards weighted structures for integrating ESG into incentive plans rather than assessing the proportion of ESG at the discretion of the board of directors. I attempt to investigate the situation for the whole S&P 1500 companies, in order to explore the situation outside the S&P 500.

More importantly, my paper is the first to examine the link between ESG contracting and corporate social responsibility performance with a sample of S&P 1500 firms. I conduct my research by standing on the shoulders of distinguished precursors. Hong, Li, and Minor (2016) are the first to step out to investigate ESG contracting. They conclude that ESG contracting can reveal value-relevant information and that corporate boards may implement ESG contracting to increase shareholder value. Francoeur et al. (2017) provide evidence that environment-friendly firms pay their CEOs less total compensation and rely less on incentive-based compensation than

environment-careless firms. Cohen et al. (2023) suggest that ESG contracting could serve to align management objectives with the preferences of certain shareholder groups. They believe that the adoption of ESG pay is accompanied by improvements in key ESG outcomes, but not by improvements in financial performance.

Flammer, Hong, and Minor (2019) study S&P 500 firms from 2003 through 2014 to examine how integrating corporate social responsibility (CSR) targets in executive compensation affects firm outcomes. They point out that CSR contracting has become increasingly trendy and more common over time. They also provide evidence that the adoption of CSR contracting tends to result in a decrease in emissions and an increase in long-term orientation, firm value, social and environmental initiatives, and green innovation. My paper is different from theirs in that I have a larger sample with a sample period that spans the post-2016 Paris Agreement period. This sample also allows us to compare S&P 500 companies and companies outside the S&P 500. In the meantime, while Flammer, Hong, and Minor (2019) claim that they are looking into the effect of CSR contracting on firm outcomes, their research actually focuses solely on the environmental scope. My paper manages to capture each individual aspect of ESG, parsing proxy statements for any short-term environmental or human capital or other ESG targets and filtering out violations related to ESG from the Violation Tracker. In contrast to them, I find no evidence that CSR contracting, or more specifically, setting environmental targets in CEO compensation plans, results in any improvement in firm CSR outcomes.

Bebchuk and Tallarita (2022) look at S&P 100 companies and find that while ESG-based compensation seems to offer promise regarding ESG, the inclusion of ESG metrics could ultimately and unexpectedly hurt stakeholder welfare. They argue that the push for ESG metrics actually overlooks and worsens agency problems related to executive pay. While the public urges

more attention be paid to ESG and multiple firms have attempted to make efforts in response, the authors acknowledge that it is difficult if not impossible for outsiders to assess whether employing ESG metrics indeed provides valuable incentives or just functions as another approach to enriching the pocket of CEOs. Based on a much larger sample and a more specific categorization system, I confirm their conclusion by pointing out that the inclusion of ESG metrics does not matter to relevant corporate social responsibility performance.

On the basis of Fortune 250 firms, Chava et al. (2023) observe that sustainability goals, namely, environmental and safety goals, in CEO annual performance agreements are most common among oil and gas firms. They argue that sustainability goals are costly regarding excess capital allocation yet benefit only extreme polluters. My paper has several differences from their paper. Firstly, while Chava et al. (2023) mainly look at Fortune 250 firms as well as public firms in the oil and gas sector, my paper uses a sample of S&P 1500 firms and should be able to draw a more general conclusion that can be applied to companies of more industries and of various sizes. My results confirm their conclusion that there is no evidence that having sustainability-related targets in CEO incentive plans matters to firm ESG outcomes. Secondly, they focus on the effect on firm outcomes from only environmental and safety objectives in the annual incentive plan of CEOs, I study from both a general ESG perspective and each aspect of ESG, consisting of environmental, HCM, and other ESG aspects. Moreover, I further explore whether and how director ESG skill sets, which may be a deep-rooted cause of including ESG goals in CEO incentive plans, affect corporate ESG outcomes. In doing so, I attempt to make the whole story more complete. Consistent with them, I provide solid evidence that firms having environmental targets in their CEO incentive plans make few efforts in practically improving their environmental performance.

3. Sample

My data comes from multiple sources and includes all firms that were part of the S&P 1500 index at any point from 2010 to 2022. I use the 2009 amendment by the SEC that required firms to disclose the expertise of directors to collect data on the functional expertise of directors. The advantage of using functional expertise to measure qualification is that it gives details of director experience that simple measures like age and tenure cannot give. I follow the same specifications as Adams, Akyol, and Verwimeren (2018) to code these skills. Following Adams et al. (2018), I scan proxy statements posted between 2010 and 2020 on the SEC website for profiles of directors. I hand-collect CEO short-term incentive data from the corresponding U.S. Securities and Exchange Commissions (SEC) proxy statements. I have access to violation data from the Violation Tracker. In addition, I identify the characteristics of the CEOs from these firms using data from BoardEx, including information on the CEO's age, tenure, and directorships. Lastly, I obtain annual accounting information from Compustat and stock return data from CRSP.

3.1 Skill Set Profiles of Board Committee Members

Data of Director Skill Sets I gather data on the profiles of newly appointed board committee members, which I collect from the Institutional Shareholder Services (ISS) via WRDS. These profiles include detailed descriptions of each member's major working experiences, extracted from DEF-14A (SEC form: Schedule 14).[4] The choice of my sample follows Adams, Akyol, and Verwijmeren (2018)[5] who use the disclosure of appointed board members' profiles

[4] I collected the data from: https://www.sec.gov/edgar/searchedgar/companysearch.
[5] As noted by Adams et al. (2018), "The 2009 amendment to Regulation S-K requires public U.S. firms to describe their reasons for nominating directors" My data collection draws from the disclosure of companies' DEF-14A financial reports submitted to the SEC.

after the amendment of Regulation S-K. My data spans from 2009 to 2022, encompassing over a decade and capturing the evolution of general awareness surrounding ESG issues, particularly in the mid-2010s.[6] Relative to prior studies, my sample expands to S&P 1500 firms and covers a broader range of more recent years, including the years of rising ESG awareness. For example, on May 6, 2020, Aerojet Rocketdyne Holdings, Inc. appointed Audrey A. McNiff, and here is what is described for hiring her on DEF-14A: "*Audrey A. McNiff … she was a partner in the securities division and the global head of foreign exchange sales and derivatives prime brokerage. Prior to her roles at Goldman Sachs, Ms. McNiff also served as a foreign exchange sales manager for HSBC from 1989 to 1992 and worked in energy project finance…extensive experience in corporate finance, managing investment funds, and overseeing investment strategy. Significant non-profit board experience including chairing investment and audit committees*".[7] This indicates the working experience and skill sets of Audrey McNiff in corporate finance, managing investment funds, overseeing investment strategy, and chairing investment and audit committees. Correspondingly, I identify the information and use the profiles for textual analysis of the board of directors' working experience and skill sets. Specifically and additionally, I collect information on meeting dates, full names of the newly appointed members, ticker of the reported company, and fiscal year of the financial report.

Keywords of ESG Skill Sets To assess the skill sets of committee members, my primary measure is a binary variable "*keyword_dummy*", and this variable takes the value of one if any newly appointed committee member has working experience related to ESG issues, as indicated by the keywords such as "*sustainable*", "*sustainability*", "*safety*", or "*environmental*" found in

[6] For the original document, please see:
https://www.sec.gov/Archives/edgar/data/3673/000119312510125011/ddefa14a.htm.
[7] A complete profile description can be found on SEC Company Fillings at:
https://www.sec.gov/Archives/edgar/data/40888/000004088821000010/a2021proxydocument.htm.

their profiles, following the method in Adams, Akyol, and Verwijmeren (2018) focusing on the their "sustainability" keyword list.[8] I extend their keywords since I am concerned about not only environment and safety, but also other HCM measures and additional ESG metrics. Detailed information about my keyword bank is attached in the appendix. The aggregation of this keyword measure is performed at the firm-year level, so "*keyword_dummy*" equals one for any year in which a company appoints a board member with ESG skills. Thus, this measure represents an increase in the ESG-related *skill sets* within the company's board. Notably, approximately 5.10% of profiles on the company-year level have at least one committee member with ESG-related working experience, and about 37.09% of firms have ever had a member with such experience in my sample from 2010 to 2022. In addition, in my robustness checks, I use a set of lists from Adams et al. (2018) that contains a complete list of keywords related to directors' employment experience and skillsets and are classified into 20 categories, including academic, risk management, and sustainability expertise. For example, the dummy "*Academic*" equals one for any profile containing keywords of *academia, academic, dean, doctorate, education, faculty, graduate, masters, Ph.D., Ph.D., professor,* or *school environment.*

In addition, I also consider cases where more than one committee member possesses ESG-related working experience or when the keywords are mentioned multiple times for a single member. To account for this, I introduce an additional binary variable "*multi-keyword*", which equals one when more than one keyword appears for the company-year observation.

Furthermore, I calculate the number of ESG-related working experience events for each company on an annual basis, i.e., I count the total number of times any of the four keywords are mentioned across all newly appointed members for a specific company and year. For example,

[8] For a complete list of keywords, please see Table 2 in Adams, Akyol, and Verwijmeren (2018).

"*keyword_count*" equals 2 if any of the keywords were mentioned twice for all newly appointed members in the year 2010. By observing the year-on-year changes in "*keyword_count*," I can examine the impact of fluctuations in the number of keywords on a company-year basis, denoted as "*change_keyword*.", that capture the trends in newly hired ESG-competent directors.

Newcomers vs. Old Friends To capture the influence of existing committee members with ESG-related working experience since 2010, I incorporate a one-year lag variable called "*old_director*". This variable captures their influence on the board's ESG skills from the previous year. Additionally, I create a variable "*new_director*" that measures the number of newly appointed board members with ESG-related working experience. This variable helps evaluate the contribution of fresh talent in driving the company's ESG-related initiatives.

Busy Directors Some committee members are appointed by several different boards, and this potentially exacerbates effects or reduces the dedication of the members. For instance, Fich and Shivdasani (2006) show that "busy" board members alleviate their powers over board governance when they are appointed to multiple directorships. Iliev and Roth (2018) also find that members' experience serving on foreign boards transfers knowledge to practice and reinforces firms' governance scores. I control for this effect as serving on multiple boards may influence board members' performance in reducing ESG releases or preventing violations, even if the board members possess similar levels of ESG skills or experience. However, Field et al. (2013) show that multiple directorships increase firm value. I account for this effect by including the number of board members with ESG-related working experience who hold positions on several different companies' boards, "*company_n_multi*".

3.2 CEO Compensation Incentives

I hand-collect incentive data by parsing the DEF 14A filings of each company. In order to collect incentive data for a company, I first check whether a company has an annual incentive plan or cash incentive bonus for its CEO. After I find the short-term incentive plan, I examine its structure and extract the specific targets and their corresponding weights, if there are any. In general, the structure of short-term incentive plans lies in four categories: discrete weighted, scorecard, modifier, and discretionary. Discrete weighted indicates a type of incentive plan structure that has a specific weight for each target. For instance, according to the 2017 DEF 14A of JetBlue Airways Corporation, a United States low-cost airline headquartered in Long Island City, the annual incentive bonus that its CEO can receive is 30% dependent on its on-time performance, 20% dependent on its customer net promoter score, 30% dependent on the controllable cost that it incurs, and 20% dependent on its pre-tax margin. With every individual target being assigned a specific weight, this is a typical example of a discrete weighted structure. A scorecard is similar to discrete weighted but different since for scorecards, we are only aware of the weight for each main group while the exact weight of individual specific targets in each group is unclear.

A modifier indicates another case where one or more targets are factors that can fluctuate the amount of the whole short-term incentive bonus. A modifier can be binding, which sets an upper and/or lower bound on the fluctuation of a given bonus, or unbinding, which means there is no restriction on how much short-term incentive bonus a CEO can receive at most or at least. For example, Chipotle Mexican Grill, Inc., an American chain of fast-casual restaurants specializing in bowls, tacos, and mission burritos, set the 2019 annual incentive plan of its CEO to be 40% associated with its comparable restaurant sales, 40% associated with its restaurant cash flow margin, and 20% associated with its site assessment requests. While the annual incentive plan

seems to be discrete weighted, it attaches an individual performance modifier with a scale of 0.25 that can change the level of the bonus to at least 0.75 and at most 1.25 times the bonus to be received based on the individual performance of its CEO. Discretionary indicates that no specific weights are assigned to any target in a short-term incentive plan.

For annual incentive plans that include any ESG target, I further determine whether such target has a specific weight or remains a subcategory under a main category like "individual goal" or "individual performance". In doing so, I intend to examine the structure of ESG targets. If we are aware of the weight of every specific ESG target, the situation is regarded as a discrete weighted. If we only know the weight of the main group in which ESG targets lie, this is regarded as a scorecard. If an ESG target is outside the main targets that constitute 100% of the incentive bonus and serves to fluctuate the whole bonus like a scalar, the ESG target acts as a modifier in this case. For the rest of the sample, the board members weigh the ESG targets in their CEO annual incentive plans at their own discretion. To avoid any confusion about the structure of ESG targets, I create a dummy variable "*ESG_structure*" that equals 1 if the structure of ESG targets differs from that of the overall short-term incentive plan.

Additionally, I categorize ESG targets following the *ESG + Incentives 2023 Report* by Mazzoni et al. (2023). All ESG targets are supposed to fall into three main categories: environmental metrics, HCM metrics, and other ESG metrics. More specifically, environmental metrics include carbon footprint, energy efficiency, waste reduction, emissions/chemical containment, sustainable sourcing, and water consumption. HCM metrics consist of diversity & inclusion, safety, employee satisfaction, talent development, turnover/retention, and company culture. Other ESG metrics are made up of customer satisfaction, community engagement, product quality, and cybersecurity.

3.3 Violation Tracker Data for Corporate ESG Misconduct

Even though there are currently multiple sources to assess firm outcomes with respect to ESG, such as MSCI ESG ratings and Refinitiv ESG company scores, I prefer data that are more closely related to corporate actions and firm outcomes considering the large discretion and disparities in the focus of those ESG ratings. The data for corporate violations are collected from ViolationTracker, a database containing information on litigation involving violations related to employment discrimination, false advertising, environmental issues, and more.[9] The data sources for ViolationTracker include the Employee Benefits Security Administration for "resolved case announcements in press releases" and the Mine Safety & Health Administration for "settlements announced in press releases", among others.[10] The violation records are compiled on a yearly basis for each company by the Corporate Research Project of *Good Jobs First*.

I gather corporate violations for the years 2009 to 2022 and match them to my main sample by both names and tickers. I convert the total releases on a firm-annual basis and all controls to their logarithms. This transformation handles skewed distributions and facilitates the interpretation of coefficients.

4. Methodology

[9] Violations are categorized as the following nine groups: competition-related offenses, consumer-protection-related offenses, employment-related offenses, environment-related offenses, financial offenses, government-contracting-related offenses, healthcare-related offenses, miscellaneous offenses, safety-related offenses. This categorization system is further developed to 93 subgroups. For more information, please see the organizer of the ViolationTracker database, GoodJobsFirst.org: https://violationtracker.goodjobsfirst.org/.

[10] For a complete list of data sources of ViolationTracker, please see: https://violationtracker.goodjobsfirst.org/pages/violation-tracker-data-sources.

The primary specification utilizes a fixed effects panel model with violation records as the dependent variable, and ESG skill set measures along with other covariates on the right-hand side. I control for firm and year fixed effects and use standard errors clustered by industry and year. Conventional controls such as leverage ratio, capital expenditure, cash-to-asset ratio, book-to-market ratio, return on assets (ROA), sales, and Big Three institutional investor ownership are included. By employing these specifications, I endeavor to shed light on the significance of directors' ESG skill sets in their implications for corporate sustainability and environmental responsibility. After confirming the correlation of all my variables to dispel my concern about multi-collinearity, I start with my baseline regression, where I use the logarithm of either the number of corporate violation cases or the amount of violation penalties as the dependent variable, and director ESG skills and CEO ESG incentives as the variable-of-interest.

$$\Upsilon_{i,j,t} = \beta_1 Skill\ Set_{i,t-1} + \beta_2 I(CEO\ Incentives_{i,t-1}) + Controls + \alpha_i + Year_t + \varepsilon_{i,t} \quad (1)$$

where i indexes firms; j indexes industries; t indexes years; Υ is the dependent variable of interest; for $Skill\ Set$, I use three measures: a dummy variable that equals 1 if a firm has at least a director with ESG skill sets, a quantitative measure indicating the number of directors with ESG skill sets, and a percentage measure indicating the percentage of directors with ESG skill sets on board; $I(CEO\ Incentives)$ is a dummy variable that equals 1 if the short-term incentive plan of a CEO includes ESG targets; and ε is the error term. The coefficients of interest are β_1 and β_2, which capture the change in Υ corresponding to the variation in whether directors have ESG skill sets and whether CEOs have ESG objectives in their short-term incentive plans.

To examine how director skill sets affect CEO incentive plans from the perspective of ESG in the following year, I run the following probit regression:

$$I(CEO\ Incentives_{i,j,t}) = \theta_1 Skill\ Set_{i,t-1} + Controls + \varepsilon_{i,t} \quad (2)$$

The specifications are similar to those of the previous regression model. The coefficient of interest is θ_1, which captures the effect of directors' ESG skill sets on whether the annual incentive plan of CEOs includes ESG targets.

5. Results

5.1 Summary Statistics

Figure 4A depicts the development of structures of ESG targets in annual incentive plans between 2009 and 2022 based on the whole S&P 1500 sample. The figure provides evidence that the number and fraction of companies that employ more specific structures are steadily increasing over the years despite some subtle shifts in the fraction of discrete weighted structures, scorecard structures, and modifier structures separately. In general, discrete weighted structures are used by most observations while modifiers account for the structure of the least observations.

[Insert Figure 4A About Here]

Figures 4B and 4C depict the development of structures of ESG targets in annual incentive plans between 2009 and 2022 based on the S&P 500 sample and S&P 1500 firms outside S&P 500 respectively and present similar trends as shown in Figure 4A. The fraction of firms employing discretionary structure for their CEO cash incentive plan has been decreasing over the past decade, indicating that firms are attempting to alleviate ambiguity in the annual incentive plan of their CEOs. Remarkably, while the number of S&P 1500 firms outside the S&P 500 that have short-term incentive plans for their CEOs does not change much over time, I observe an increasing number of S&P 500 firms that disclose their CEO incentive plans.

[Insert Figures 4B and 4C About Here]

Figure 5 depicts the fraction of firms with overall ESG targets, environmental targets, HCM targets, and other ESG targets from 2009 through 2022, both within my S&P 1500 sample and my S&P 500 sample, as well as the S&P 1500 sample excluding S&P 500 firms. Since the sample ends in 2022, there is an evident decrease in the number of firms with environmental targets, the fraction of firms with HCM targets, and the fraction of firms with other ESG targets, in both samples. Setting 2022 aside, I observe a generally consistent trend of rising fractions of adoptions of ESG targets in each category in both samples, especially after 2016. More specifically, firms that adopt HCM targets account for the highest fraction while environmental goals are least adopted.

[Insert Figure 5 About Here]

This can be also observed in Table 1, which presents the number and percentage of firms with environmental targets, firms with HCM targets, firms with other ESG targets, and firms with no ESG targets. The table indicates a consistent pattern in the adoption of ESG targets as has been discussed above. While ESG has been trendy for a while, it seems that firms seldom hire directors with ESG experience or credentials.

[Insert Table 1 About Here]

Table 3 depicts the summary statistics of key variables, keyword occurrences of every aspect of ESG, directors with ESG skill sets, CEO ESG incentives, and both case numbers and dollar amounts with respect to corporate ESG violations.

[Insert Table 3 About Here]

5.2 Effect of Director Skill Sets on Firm ESG Outcomes

Next, I illustrate how the overall ESG skill sets of directors change the number of violation cases. Table 4 presents the effect of the appointment of directors with ESG skill sets, the level of director ESG competency at the firm level, the fraction of directors with ESG skill sets on board, and the inclusion of ESG targets in the annual incentive plan of CEOs on the number of corporate violations with respect to ESG in general. More specifically, the first column shows the effect of CEO ESG incentives and the level of director ESG competency at the firm level on the number of violation cases related to ESG at the firm level. The second column shows the effect of CEO ESG incentives and the appointment of directors with ESG skill sets on the number of corporate violation cases related to ESG. The third column shows the effect of CEO ESG incentives and the fraction of directors with ESG skill sets on board on the number of firm-level violation cases related to ESG. Overall, I find no significant results, either within my S&P 1500 or in the S&P 500 sample, or the S&P 1500 firms without S&P 500 firms, as can be seen in Table 14 in the Appendix, indicating no significant effect of any of the above factors on the number of ESG-related violation cases.[11]

[Insert Table 4 About Here]

Similarly, Table 5 shows the impact of the appointment of directors with ESG skill sets, the level of director ESG competency at the firm level, the fraction of directors with ESG skill sets on board, and the inclusion of ESG targets in the annual incentive plan of CEOs on the dollar amount of corporate violation penalties with respect to ESG in general. The independent variables are same as in Table 4. Only the dependent variable is changed to the dollar amount of firm-level

[11] To explicitly separate the effect of directors with ESG skill sets on firm ESG outcomes, I follow Duchin, Matsusaka, and Ozbas (2010) and create an instrumental variable that equals 1 if a firm increases its number of directors with ESG skills following the Paris Agreement, and 0 otherwise. However, I do not recognize the meaningfulness of doing so since the number of observations for the instrumental variable is too small for us to achieve reasonable results.

ESG violation penalties. Again, I observe no significant effect of any of the factors on the dollar amount of corporate violation penalties concerning ESG.

[Insert Table 5 About Here]

Controlling for industry fixed effect, Table 20 again presents no evidence that either the appointment of directors with ESG skill sets, the level of director ESG competency, the fraction of directors with ESG skill sets on the board, or the inclusion of ESG targets in the annual incentive plan of CEOs has any effect on the number of violation cases concerning ESG in general. However, different from my previous conclusions, Table 21 suggests that the level of director ESG skills at the firm level positively affects the dollar amount of violation penalties, meaning that the higher overall ESG skills a firm's directors have, the more money a firm has to pay for its ESG-related violations. This makes us suspect that firms strengthen their directors' ESG skill sets to pretend that they are making efforts in ESG, yet suffering from worse ESG performance in the meantime, namely, such firms may conduct competency washing.

In order to examine and compare each aspect of ESG, including environmental, HCM, and other ESG aspects, I run regressions using data for every single aspect of CEO incentives, director skill sets, and violations.

Table 6 presents the results from the environmental aspect. As above, I do not obtain any significant results that indicate any of the appointment of directors with environmental skill sets, the level of director environmental competency at the firm level, the fraction of directors with environmental skill sets on board, and the inclusion of environmental targets in the annual incentive plan of CEOs affect the number of environmental violation cases or the dollar amount of environmental violation penalty. With industry fixed effect controlled, Table 22 shows the results when I control for industry fixed effect. Surprisingly, I find that the level of directors'

environmental expertise and the fraction of directors with environmental skill sets are positively correlated with the number of environmental violation cases, implying that firms with higher director environmental expertise or with relatively more directors with environmental expertise tend to have more environmental violations. This again provides evidence that firms are not taking real actions to improve their environmental performance.

[Insert Table 6 About Here]

Table 7 presents the results from the HCM aspect for both samples. Likewise, I do not find evidence that any of the appointment of directors with HCM skill sets, the level of director HCM competency at the firm level, the fraction of directors with HCM skill sets on board, and the inclusion of HCM targets in the annual incentive plan of CEOs makes a difference to the number of HCM violation cases or the punishment for HCM violations. With industry fixed effect controlled, Table 23 shows that the appointment of directors with HCM expertise adds to the dollar amount of HCM-related violation penalties, again corroborating that firms only hire directors with HCM skills to show their "effort" in improving their HCM performance.

[Insert Table 7 About Here]

Tables 8 and 24 present results related to other ESG aspects. Again, no significant results are achieved.

[Insert Table 8 About Here]

At this time, there is not much difference in the situation between relatively large firms, represented by S&P 500 firms, and relatively small firms, represented by S&P 1500 firms outside S&P 500 firms, as shown in Tables 14-18.

5.3 Effect of Director Skill Sets on CEO ESG Incentives

Next, I establish how the ESG skill sets of directors affect the incorporation of ESG targets into the annual incentive plan of CEOs. Table 9 presents the effect of directors' overall ESG skill sets on the inclusion of ESG goals in CEO incentive plans. Evidence from the S&P 1500 sample shows that the level of directors' ESG skill sets at the firm level and the fraction of directors with ESG expertise on board have a significantly positive effect on the addition of ESG objectives to CEO incentive plans. This means that it is more likely for firms with higher levels of ESG expertise and firms with relatively more directors with ESG skills to set specific ESG targets to motivate their CEOs. The results are significant at the 1% level.

[Insert Table 9 About Here]

Like before, Tables 10, 11, and 12 respectively look at each dimension of ESG, namely, the environmental aspect, HCM aspect, and other ESG aspects. Table 10 shows that firms with higher levels of corporate environmental expertise, and a higher fraction of directors with environmental skill sets on board are prone to include environmental goals in the annual incentive plan of their CEOs. The results are significant at the 1% level. When I separate the sample into S&P 500 firms and firms outside the S&P 500, I find some little difference. Looking at the results for the S&P 500 sample, I can reach a consistent conclusion with what I get from S&P 1500 firms. However, when I turn to firms outside the S&P 500, as shown in Column (3) of Table 13, the results do not provide evidence that the fraction of directors with environmental skills influences the possibility of environmental goals being added to the cash incentive plan of CEOs. Under this circumstance, these tables imply that those relatively large firms are driving the main results and are seemingly making more efforts on ESG-related issues.

[Insert Table 10 About Here]

[Insert Table 13 About Here]

Table 11 provides similar evidence that the level of corporate HCM skill sets and the fraction of directors skilled in HCM have a significantly positive effect on the likelihood of adding HCM-related goals to the cash incentive plan of CEOs. Column (5) of Table 13 shows that the appointment of directors with HCM skill sets affects the likelihood of having HCM targets in CEO incentive plans, but the effect does not exist in S&P 500 firms.

[Insert Table 11 About Here]

Table 12 shows how director skill sets interact with the cash incentive plans of CEOs. Again, the results suggest that higher expertise in other ESG aspects at the firm level and a higher fraction of directors with other ESG skill sets should indicate a greater chance of other ESG-related targets being added to CEO incentive plans. Moreover, firms with a higher likelihood of hiring directors with relevant expertise are more likely to have other ESG targets in the short-term incentive plan of their CEOs. Columns (7), (8), and (9) of Table 13 compare the situation for S&P 500 firms and S&P 1500 firms outside S&P 500 firms. Results from the latter show no evidence that the level of director expertise in other ESG aspects plays a role in the addition of corresponding targets into the incentive plan of CEOs, again indicating that the conclusion that I draw from Table 12 is mainly driven by relatively large companies.

[Insert Table 12 About Here]

5.4 Difference-in-Difference Check: Paris Agreement

I also do a robustness check to examine the effect of director skill sets on firm ESG outcomes using a difference-in-difference method based on the 2015 Paris Agreement. Since the Paris Agreement was adopted in November 2015 and signed in April 2016, I define the years from 2009 to 2014 of my sample period as the pre-Paris-Agreement period and the years from 2017 to

2022 as the post-Paris-Agreement period. My results show no evidence that director skill sets affect corporate ESG performance.

6. Conclusion

In this paper, I address whether the environmental, social, and governance skill sets of directors affect ESG violations. Further, I investigate whether adding ESG incentives to CEO incentive plans can be a channel through which director skills affect corporate ESG performance. Equipped with comprehensive longitudinal data of director ESG skill sets, CEO ESG incentives, and corporate ESG-related violations based on my sample of S&P 1500 firms, I capture the presence of ESG incentives in annual incentive plans of CEOs and explore the importance of director skill sets. I show that firms are generally increasing their focus on ESG by adding ESG targets to CEO incentive plans. Among the three categories that I look at, namely, environmental, HCM, and other ESG aspects, HCM receives the most attention from firms.

While prior literature illustrates the role director experience and expertise play in improving the financial performance of firms, I find no evidence the ESG skill sets of directors in general improve corporate ESG performance. In fact, after controlling for industry fixed effect, I find evidence that the level of director environmental skill sets, the fraction of directors with environmental expertise, and the appointment of directors with HCM expertise worsen respective corporate ESG outcomes. Yet, delving into whether director skills make a difference in the establishment of CEO incentive plans, I do find evidence that both the level of director ESG credentials at the firm level and the fraction of directors with ESG skills lead to an increased probability of ESG targets being added to the annual incentive plan of CEOs.

Additionally, I observe different conclusions between using the S&P 1500 sample excluding S&P 500 firms and using the S&P 500 sample. For instance, the S&P 500 sample leads to a conclusion that both the level of director skill sets in other ESG aspects at the firm level and the fraction of directors with expertise in other ESG aspects increase the likelihood of incorporating objectives related to other ESG aspects into CEO incentive plans. Yet, the results based on the S&P 1500 sample reveal no effect from either the level of director skill sets in other ESG aspects at the firm level or the fraction of directors with expertise in environmental aspects but indicate a positive effect of the appointment of directors skilled HCM aspects. To sum up, the results of relatively larger and better-known firms, represented by the S&P 500 sample, are more salient in showing the interaction between director skill sets and the inclusion of ESG targets in CEO contracts.

This study makes several contributions. It is the first to examine how the adoption of ESG contracting affects firm-level outcomes within each aspect of ESG based on a sample of S&P 1500 companies. In doing so, my paper also provides insights in a broader scope and figures out several differences between the situation for S&P 1500 companies and that for S&P 500 companies. I provide evidence that contradicts the findings of some precursors (Flammer, Hong, and Minor, 2019) and suggests that firms seem to show their "efforts" in ESG by hiring directors with relevant skill sets or strengthening the expertise of their directors, which do not bring improvement to their ESG performance. My concern about "competency washing" remains. Finally, the paper investigates how director skill sets influence the construction of cash incentive compensation of CEOs and further how it impacts company performance. While current literature has been mainly focusing on financial performance, my paper extends to corporate social responsibility performance.

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Figure 1. Global Temperature from 1850 to 2022

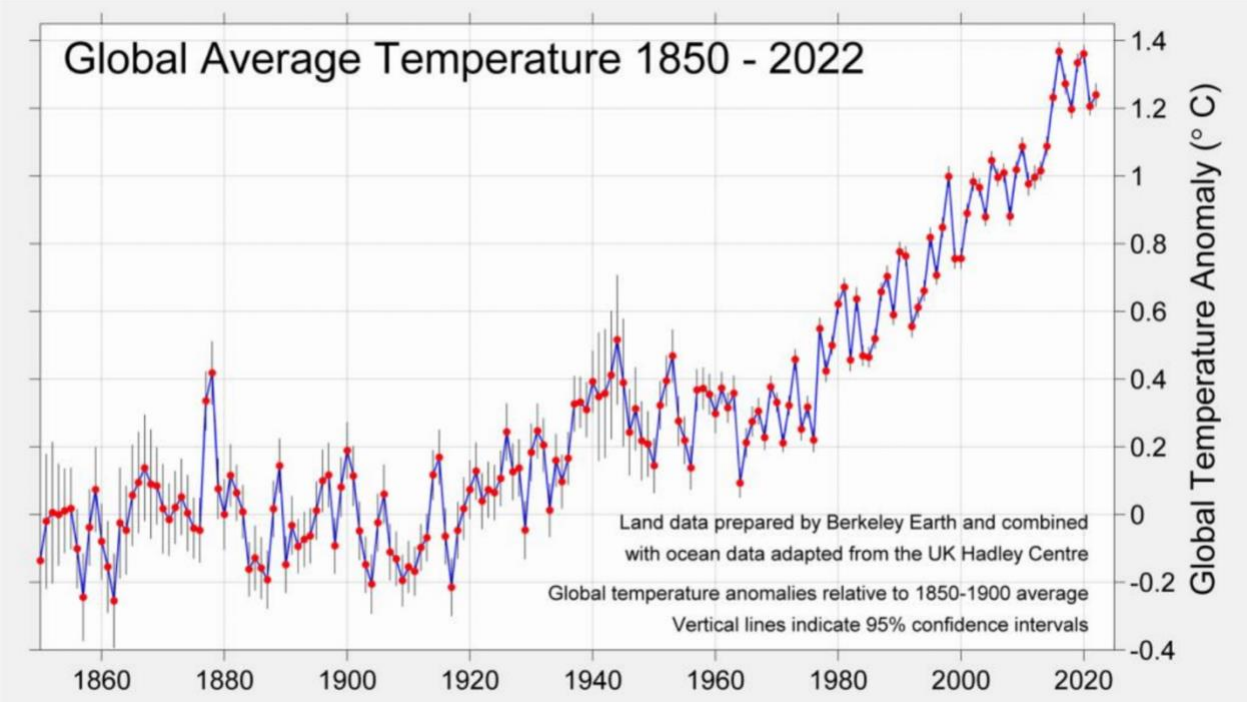

Figure 2. Global CO_2 Atmospheric Concentration

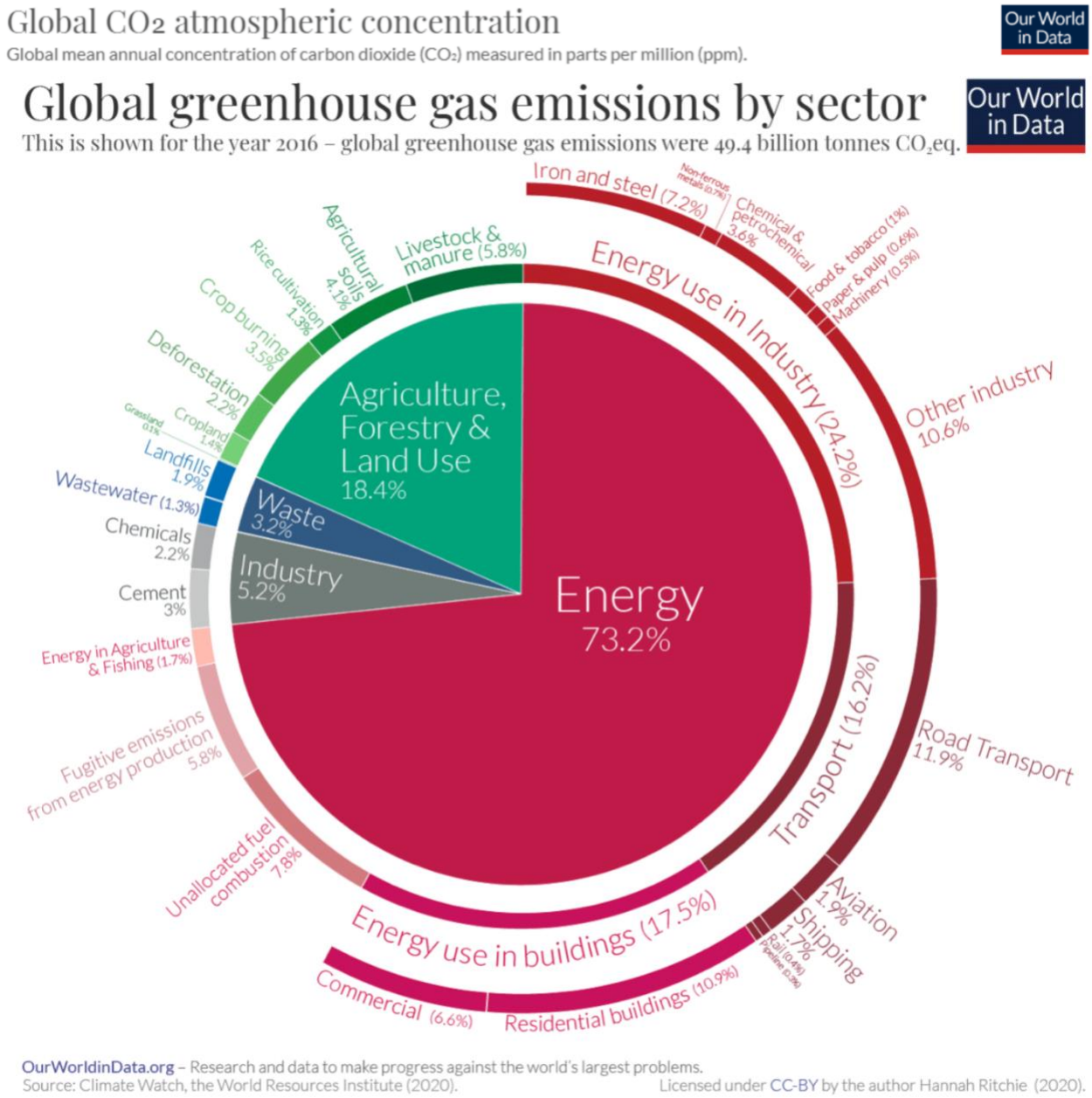

Figure 3. Global Greenhouse Gas (GHG) Emissions by Sector

Figure 4A. Structure of ESG Targets in Annual Incentive Plans of S&P 1500 Sample

This figure shows the development of different structures of ESG targets in annual incentive plan structures between 2009 and 2022.

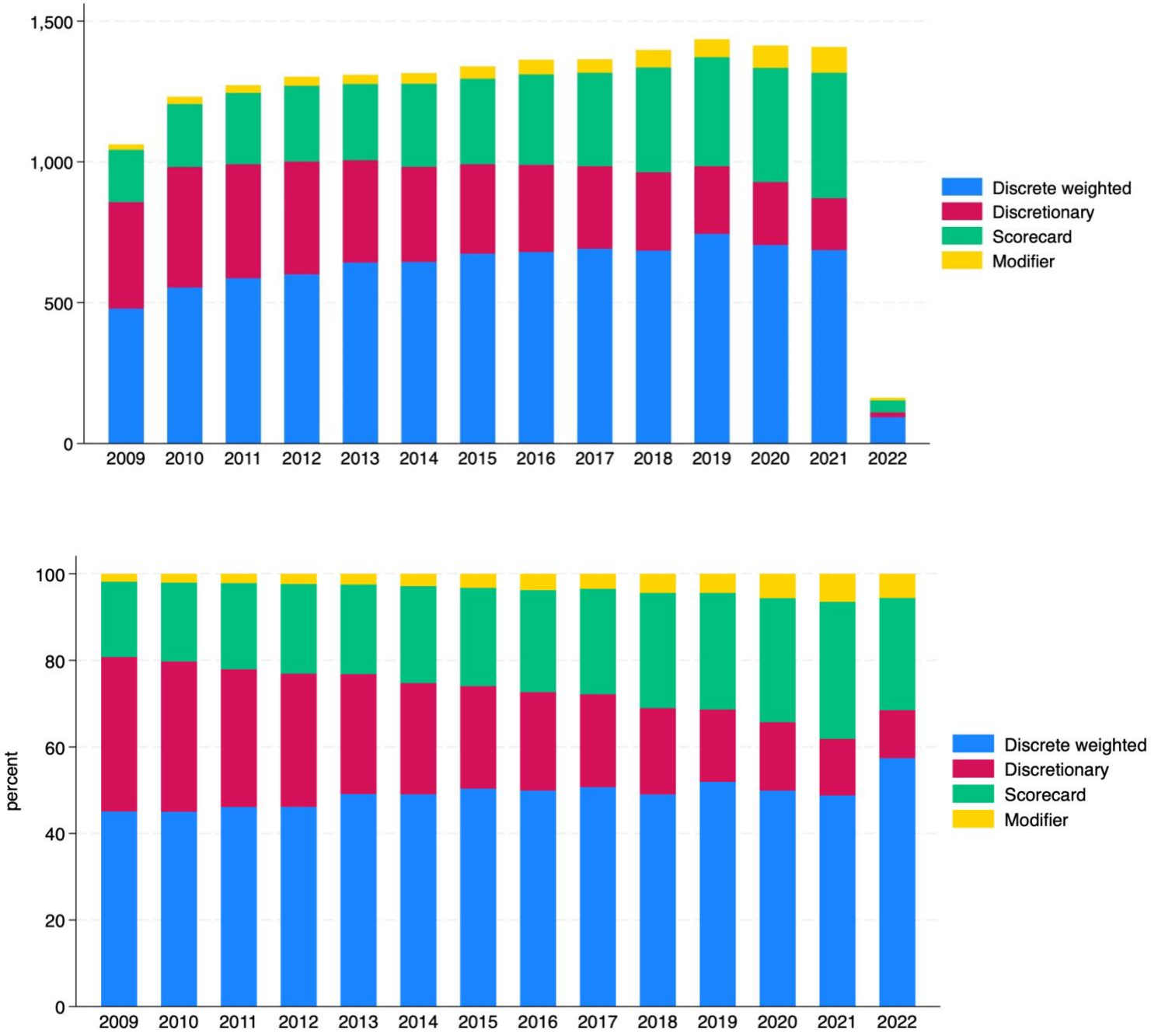

Figure 4B. Structure of ESG Targets in Annual Incentive Plans of S&P 500 Sample

This figure shows the development of different structures of ESG targets in annual incentive plan structures between 2009 and 2022.

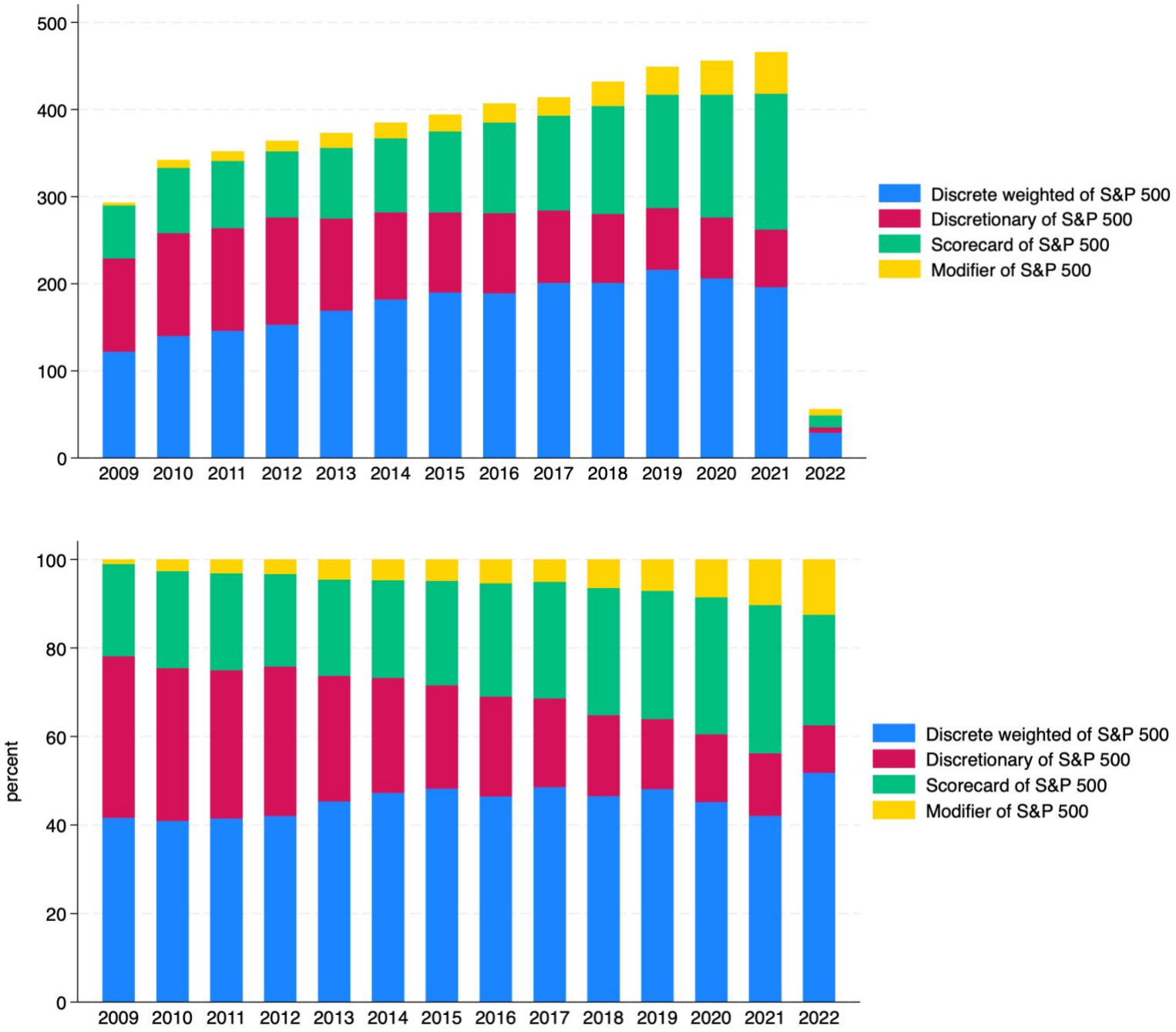

Figure 4C. Structure of ESG Targets in Annual Incentive Plans of S&P 1500 Firms Outside S&P 500

This figure shows the development of different structures of ESG targets in annual incentive plan structures between 2009 and 2022.

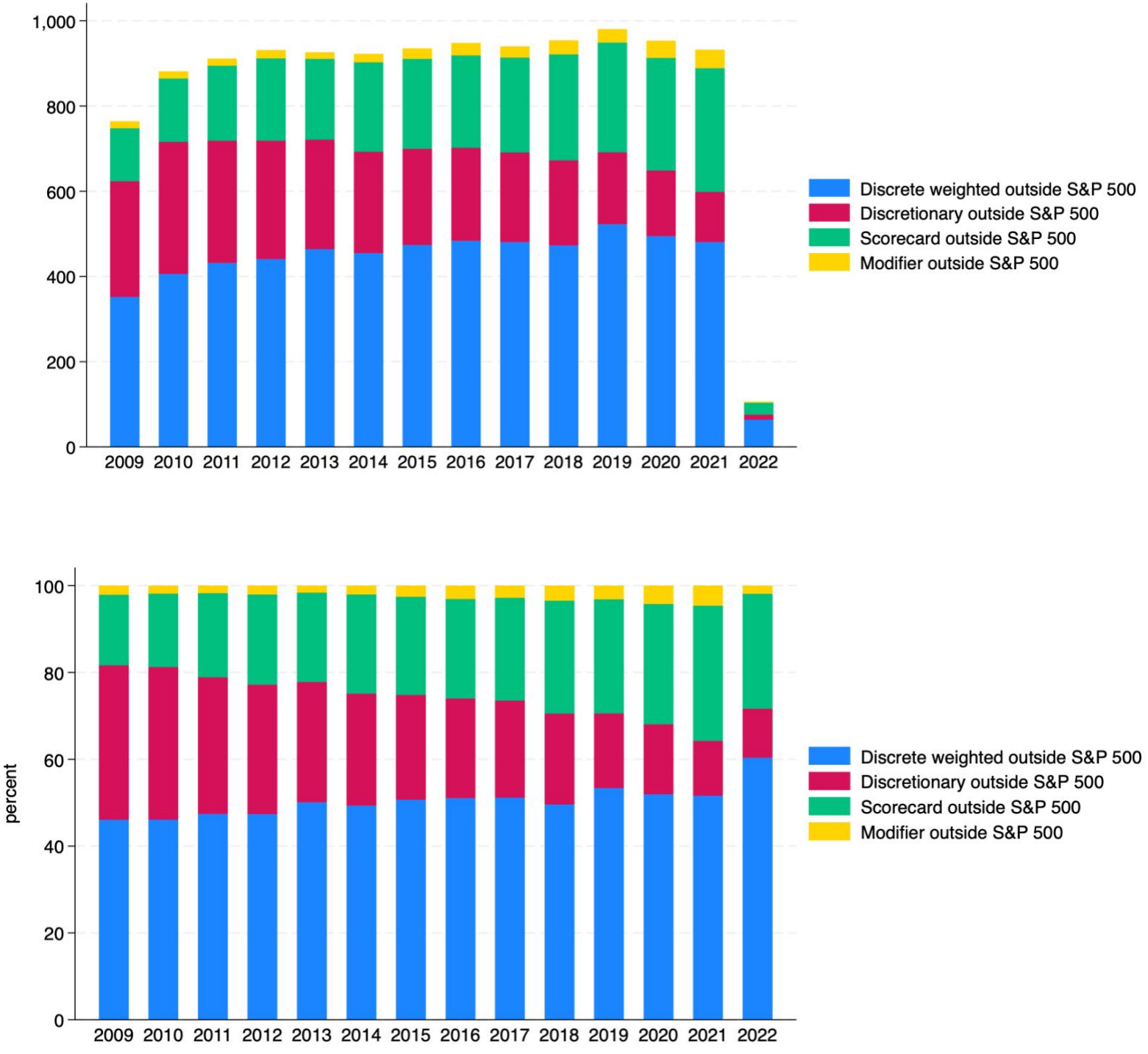

Figure 5. ESG-Related Targets in Annual Incentive Plans of S&P 1500 and S&P 500 Firms
This figure shows the number of firms in my sample of (i) S&P 1500 and (ii) S&P 500 firms from 2009 through 2020 with environmental targets, HCM targets, and other ESG targets.

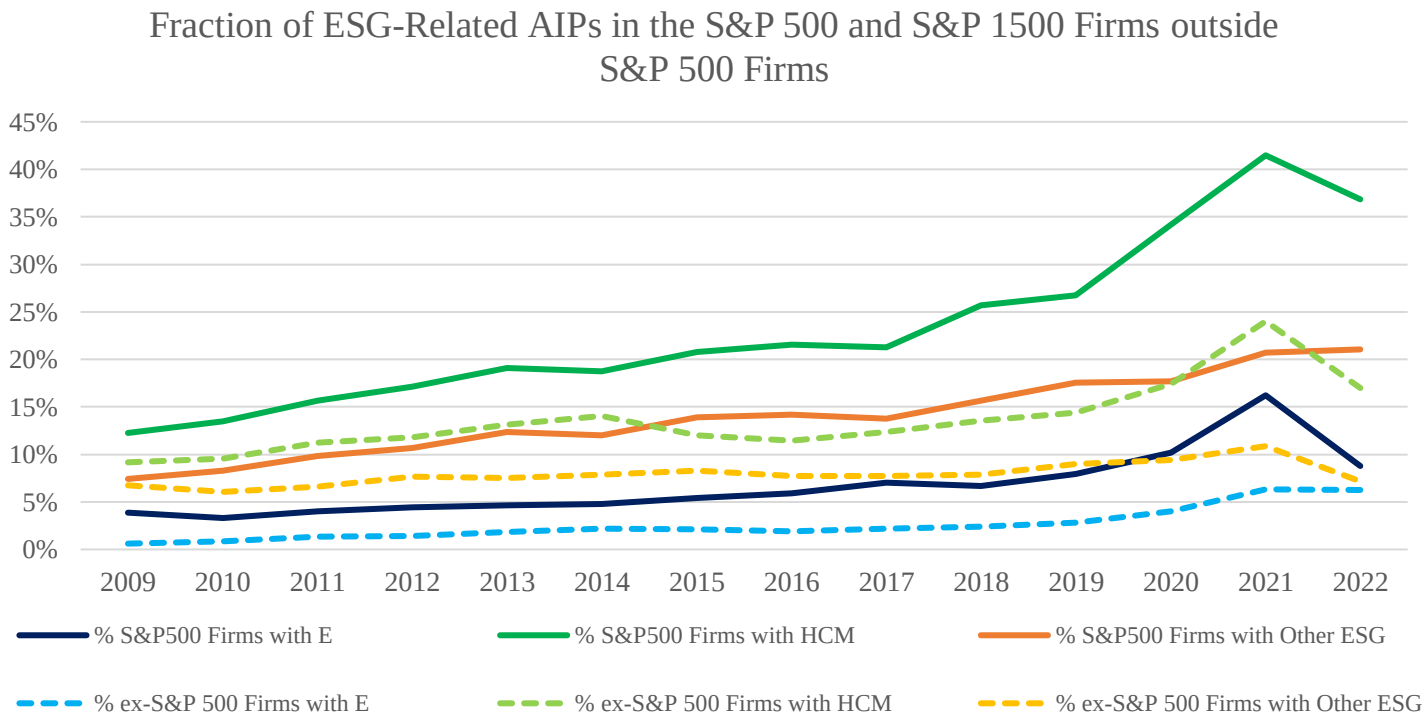

Table 1. Firms in the (i) S&P 1500 Sample, (ii) S&P 500 Sample, (iii) S&P 1500 Firms excluding S&P 500 Firms.

This table presents the number and fraction of 1) firms with environmental targets, 2) firms with HCM targets, and 3) firms with other ESG targets.

Panel A: S&P 1500 Sample

Fiscal Year	# Firms with E Targets	% Firms with E Targets	# Firms with HCM Targets	% Firms with HCM Targets	# Firms with Other ESG Targets	% Firms with Other ESG Targets
2009	17	1.51%	113	10.02%	78	6.91%
2010	20	1.53%	139	10.66%	87	6.67%
2011	28	2.08%	168	12.51%	101	7.52%
2012	31	2.27%	182	13.31%	116	8.49%
2013	36	2.63%	203	14.83%	122	8.91%
2014	40	2.92%	211	15.42%	124	9.06%
2015	43	3.10%	203	14.61%	138	9.94%
2016	44	3.11%	205	14.47%	137	9.67%
2017	52	3.66%	214	15.05%	136	9.56%
2018	54	3.69%	253	17.28%	150	10.25%
2019	66	4.39%	274	18.23%	175	11.64%
2020	90	6.01%	341	22.78%	181	12.09%
2021	143	9.54%	445	29.69%	211	14.08%
2022	12	7.10%	40	23.67%	20	11.83%

Panel B. S&P 500 Sample

Fiscal Year	# Firms with E Targets	% Firms with E Targets	# Firms with HCM Targets	% Firms with HCM Targets	# Firms with Other ESG Targets	% Firms with Other ESG Targets
2009	12	3.87%	38	12.26%	23	7.42%
2010	12	3.31%	49	13.50%	30	8.26%
2011	15	3.99%	59	15.69%	37	9.84%
2012	17	4.42%	66	17.14%	41	10.65%
2013	18	4.64%	74	19.07%	48	12.37%
2014	19	4.75%	75	18.75%	48	12.00%
2015	22	5.38%	85	20.78%	57	13.94%
2016	25	5.92%	91	21.56%	60	14.22%
2017	30	7.01%	91	21.26%	59	13.79%
2018	30	6.70%	115	25.67%	70	15.63%
2019	37	7.91%	125	26.71%	82	17.52%
2020	49	10.21%	164	34.17%	85	17.71%
2021	79	16.22%	202	41.48%	101	20.74%
2022	5	8.77%	21	36.84%	12	21.05%

Panel C: S&P 1500 Firms excluding S&P 500 Firms

Fiscal Year	# Firms with E Targets	% Firms with E Targets	# Firms with HCM Targets	% Firms with HCM Targets	# Firms with Other ESG Targets	% Firms with Other ESG Targets
2009	5	0.61%	75	9.17%	55	6.72%
2010	8	0.85%	90	9.56%	57	6.06%
2011	13	1.34%	109	11.27%	64	6.62%
2012	14	1.43%	116	11.81%	75	7.64%
2013	18	1.83%	129	13.15%	74	7.54%
2014	21	2.17%	136	14.05%	76	7.85%
2015	21	2.14%	118	12.04%	81	8.27%
2016	19	1.91%	114	11.46%	77	7.74%
2017	22	2.21%	123	12.37%	77	7.75%
2018	24	2.36%	138	13.58%	80	7.87%
2019	29	2.80%	149	14.40%	93	8.99%
2020	41	4.03%	177	17.40%	96	9.44%
2021	64	6.32%	243	24.01%	110	10.87%
2022	7	6.25%	19	16.96%	8	7.14%

Table 2. Keyword Bank for Director Skill Sets

This table lists the keywords that I search for and regard as director skill sets.

Category	Keywords
Environmental	environment, environmental, sustainable, sustainability
Human Capital Management	safety, diversity, inclusion, employee, talent, retention, turnover, culture
Other	customer, community, product quality, cybersecurity

Table 3. Descriptive Statistics for Main Variables

This table presents the descriptive statistics for the main independent, dependent, and control variables.

Variable	Mean	St. Dev.	Median
Keyword Occurrences of ESG Skill Sets (DEF 14A)	3.65	5.18	2.00
Keyword Occurrences of Environmental Skill Sets (DEF 14A)	1.41	3.03	0.00
Keyword Occurrences of HCM Skill Sets (DEF 14A)	1.51	2.33	1.00
Keyword Occurrences of Other ESG Skill Sets (DEF 14A)	0.72	1.50	0.00
Directors with Environmental Skill Sets = 1 (DEF 14A)	0.40	0.49	0.00
Directors with HCM Skill Sets = 1 (DEF 14A)	0.55	0.50	1.00
Directors with Other ESG Skill Sets = 1 (DEF 14A)	0.35	0.48	0.00
Number of Directors (DEF 14A)	9.80	2.67	9.00
Fraction of Directors with ESG Skill Sets (DEF 14A)	0.23	0.24	0.17
Fraction of Directors with Environmental Skill Sets (DEF 14A)	0.09	0.16	0.00
Fraction of Directors with HCM Skill Sets (DEF 14A)	0.13	0.20	0.08
Fraction of Directors with Other ESG Skill Sets (DEF 14A)	0.07	0.14	0.00
CEO Environmental Incentives = 1 (DEF 14A)	0.06	0.23	0.00
CEO HCM Incentives = 1 (DEF 14A)	0.20	0.40	0.00
CEO Other ESG Incentives = 1 (DEF 14A)	0.11	0.31	0.00
Environmental Violation Cases (Violation Tracker)	0.88	1.94	0.00
HCM Violation Cases (Violation Tracker)	2.95	10.94	1.00
Other ESG Violation Cases (Violation Tracker)	0.68	1.98	0.00
Dollar Amount on Environmental Violation Penalty (Violation Tracker)	3171847.00	86400000.00	0.00
Dollar Amount on HCM Violation Penalty (Violation Tracker)	8507013.00	158000000.00	17209.00

Dollar Amount on Other ESG Violation Penalty (Violation Tracker)	16600000.00	183000000.00	0.00
Log (Dollar Amount on Environmental Violation Penalty) (Violation Tracker)	4.29	5.72	0.00
Log (Dollar Amount on HCM Violation Penalty) (Violation Tracker)	8.46	5.38	9.75
Log (Dollar Amount on Other ESG Violation Penalty) (Violation Tracker)	3.97	6.63	0.00
Return on Assets (WRDS)	0.13	0.08	0.12
Log (Book to Market) (WRDS)	-0.49	0.44	-0.40
Log (Sales) (WRDS)	8.77	1.37	8.73
Book Leverage (WRDS)	0.28	0.20	0.27
Cash to Assets (WRDS)	0.10	0.10	0.07
Capital Expenditures (WRDS)	0.04	0.04	0.03
Big Three Institutional Investor Ownership Percentage (WRDS)	0.01	0.02	0.00

Table 4. Number of Violation Cases and ESG Skill Sets of Directors – S&P 1500

This table shows the results of regressing the logarithm of the number of violation cases on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board, and also on CEO ESG incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	-0.029		
	(0.047)		
Directors with ESG Skill Sets = 1		-0.913	
		(0.591)	
Fraction of Directors with ESG Skill Sets on Board			-1.731
			(1.081)
CEO ESG Incentives = 1	-1.410	-1.471	-1.411
	(1.617)	(1.609)	(1.588)
ROA	-3.012	-2.926	-2.958
	(3.555)	(3.499)	(3.510)
Log (Book to Market)	2.032	2.031	2.045
	(1.442)	(1.442)	(1.448)
Log (Sale)	2.667***	2.754***	2.650***
	(0.715)	(0.732)	(0.701)
Book Leverage	-2.243	-2.116	-2.211
	(3.768)	(3.735)	(3.759)
Cash to Assets	-0.822	-0.685	-0.830
	(1.661)	(1.633)	(1.607)
Capital Expenditures	11.16*	11.70*	11.74*
	(6.274)	(6.326)	(6.310)
Big Three Ownership	6.976	7.169	6.992
	(11.57)	(11.43)	(11.43)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
R-Squared	0.030	0.031	0.030
Observations	2,564	2,564	2,564

Table 5. Dollar Amount of Violation Penalty and ESG Skill Sets of Directors – S&P 1500

This table shows the results of regressing the logarithm of the dollar amount of violation penalty on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board, and also on CEO ESG incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	0.112		
	(0.072)		
Directors with ESG Skill Sets = 1		0.515	
		(0.611)	
Fraction of Directors with ESG Skill Sets on Board			-0.399
			(1.668)
CEO ESG Incentives = 1	0.048	0.199	0.193
	(0.758)	(0.749)	(0.754)
ROA	5.299	5.222	5.276
	(3.718)	(3.675)	(3.664)
Log (Book to Market)	1.461	1.495	1.506
	(1.261)	(1.258)	(1.258)
Log (Sale)	2.529***	2.387***	2.409***
	(0.684)	(0.671)	(0.674)
Book Leverage	2.382	2.290	2.364
	(2.237)	(2.283)	(2.294)
Cash to Assets	3.434	2.942	2.916
	(3.615)	(3.586)	(3.568)
Capital Expenditures	-0.482	-0.744	-0.290
	(7.538)	(7.641)	(7.661)
Big Three Ownership	24.96	23.74	23.58
	(16.00)	(16.14)	(16.10)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
R-Squared	0.023	0.021	0.021
Observations	2,564	2,564	2,564

Table 6. Violations and Environmental Skill Sets of Directors – S&P 1500

This table shows the results of regressing the logarithm of either the number of environmental violation cases or the dollar amount of environmental violation penalty on each of three variables related to directors with environmental skill sets, including a dummy variable indicating the appointment of directors with environmental skill sets, a numerical variable that is the number of keyword occurrences of environmental skill sets, and a percentage variable indicating the fraction of directors with environmental skill sets on board, and also on CEO environmental incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Environmental Skill Sets	-0.001	0.0307				
	(0.016)	(0.056)				
Directors with Environmental Skill Sets = 1			-0.052	0.291		
			(0.083)	(0.299)		
Fraction of Directors with Environmental Skill Sets on Board					-0.009	0.356
					(0.388)	(1.184)
CEO Environmental Incentives = 1	-0.048	0.418	-0.048	0.444	-0.049	0.436
	(0.172)	(0.838)	(0.168)	(0.827)	(0.169)	(0.834)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.030	0.016	0.030	0.016	0.030	0.016
Observations	2,564	2,564	2,564	2,564	2,564	2,564

Table 7. Violations and HCM Skill Sets of Directors – S&P 1500

This table shows the results of regressing the logarithm of either the number of HCM violation cases or the dollar amount of HCM violation penalty on each of three variables related to directors with HCM skill sets, including a dummy variable indicating the appointment of directors with HCM skill sets, a numerical variable that is the number of keyword occurrences of HCM skill sets, and a percentage variable indicating the fraction of directors with HCM skill sets on board, and also on CEO HCM incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of HCM Skill Sets	-0.009	0.014				
	(0.086)	(0.090)				
Directors with HCM Skill Sets = 1			-0.767	-0.018		
			(0.506)	(0.350)		
Fraction of Directors with HCM Skill Sets on Board					-0.671	-0.544
					(1.002)	(1.214)
CEO HCM Incentives = 1	-1.835	0.156	-1.833	0.164	-1.812	0.187
	(1.908)	(0.540)	(1.884)	(0.542)	(1.895)	(0.540)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.024	0.010	0.025	0.010	0.024	0.010
Observations	2,564	2,564	2,564	2,564	2,564	2,564

Table 8. Violations and Other ESG Skill Sets of Directors – S&P 1500

This table shows the results of regressing the logarithm of either the number of violation cases or the dollar amount of violation penalty on each of three variables related to directors with other ESG skill sets, including a dummy variable indicating the appointment of directors with other ESG skill sets, a numerical variable that is the number of keyword occurrences of other ESG skill sets, and a percentage variable indicating the fraction of directors with other ESG skill sets on board, and also on CEO incentives related to other ESG aspects. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Other ESG Skill Sets	0.042	-0.022				
	(0.042)	(0.187)				
Directors with Other ESG Skill Sets = 1			0.056	0.486		
			(0.106)	(0.407)		
Fraction of Directors with Other ESG Skill Sets on Board					0.411	-0.656
					(0.541)	(2.404)
CEO Other ESG Incentives = 1	0.04	0.680	0.044	0.676	0.041	0.682
	(0.216)	(0.733)	(0.216)	(0.724)	(0.215)	(0.732)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.017	0.008	0.017	0.009	0.017	0.008
Observations	2,564	2,564	2,564	2,564	2,564	2,564

Table 9. CEO Incentives and ESG Skill Sets of Directors

This table shows the results of a probit regression that regresses CEO incentives in ESG on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	0.087***		
	(0.018)		
Directors with ESG Skill Sets = 1		0.326	
		(0.212)	
Fraction of Directors with ESG Skill Sets on Board			1.292***
			(0.395)
Controls	Yes	Yes	Yes
Observations	2,564	2,564	2,564

Table 10. CEO Incentives and Environmental Skill Sets of Directors

This table shows the results of a probit regression that regresses CEO environmental incentives on each of three variables related to directors with environmental skill sets, including a dummy variable indicating the appointment of directors with environmental skill sets, a numerical variable that is the number of keyword occurrences of environmental skill sets, and a percentage variable indicating the fraction of directors with environmental skill sets on board. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of Environmental Skill Sets	0.108***		
	(0.028)		
Directors with Environmental Skill Sets = 1		0.317	
		(0.214)	
Fraction of Directors with Environmental Skill Sets on Board			2.303***
			(0.615)
Controls	Yes	Yes	Yes
Observations	2,564	2,564	2,564

Table 11. CEO Incentives and HCM Skill Sets of Directors

This table shows the results of a probit regression that regresses CEO HCM incentives on each of three variables related to directors with HCM skill sets, including a dummy variable indicating the appointment of directors with HCM skill sets, a numerical variable that is the number of keyword occurrences of HCM skill sets, and a percentage variable indicating the fraction of directors with HCM skill sets on board. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of HCM Skill Sets	0.183***		
	(0.038)		
Directors with HCM Skill Sets = 1		0.238	
		(0.178)	
Fraction of Directors with HCM Skill Sets on Board			2.016***
			(0.466)
Controls	Yes	Yes	Yes
Observations	2,564	2,564	2,564

Table 12. CEO Incentives and Other ESG Skill Sets of Directors

This table shows the results of a probit regression that regresses CEO incentives in other ESG aspects on each of three variables related to directors with other ESG skill sets, including a dummy variable indicating the appointment of directors with other ESG skill sets, a numerical variable that is the number of keyword occurrences of other ESG skill sets, and a percentage variable indicating the fraction of directors with other ESG skill sets on board. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of Other ESG Skill Sets	0.183**		
	(0.072)		
Directors with Other ESG Skill Sets = 1		0.639***	
		(0.214)	
Fraction of Directors with Other ESG Skill Sets on Board			2.371***
			(0.854)
Controls	Yes	Yes	Yes
Observations	2,564	2,564	2,564

Table 13. CEO Incentives and Specific ESG Skill Sets of Directors – Inside and Outside S&P 500

This table shows the results of a probit regression that regresses CEO environmental incentives on each of three variables related to directors with environmental skill sets, including a dummy variable indicating the appointment of directors with environmental skill sets, a numerical variable that is the number of keyword occurrences of environmental skill sets, and a percentage variable indicating the fraction of directors with environmental skill sets on board. Controls include return to assets, log (book to market), log (sale), log (total assets), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: S&P 500 Sample

	Environmental			HCM			Other ESG		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Keyword Occurrences of Specific Skill Sets	0.114***			0.168***			0.187**		
	(0.033)			(0.043)			(0.095)		
Directors with Specific Skill Sets = 1		0.437			0.103			0.539**	
		(0.279)			(0.247)			(0.272)	
Fraction of Directors with Specific Skill Sets on Board			2.727***			1.832***			2.150*
			(0.758)			(0.559)			(1.177)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,542	1,542	1,542	1,542	1,542	1,542	1,542	1,542	1,542

Panel B: S&P 1500 Firms excluding S&P 500 Firms

	Environmental			HCM			Other ESG		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Keyword Occurrences of Specific Skill Sets	0.118*			0.244***			0.163		
	(0.072)			(0.078)			(0.129)		
Directors with Specific Skill Sets = 1		0.108			0.504*			1.091***	
		(0.407)			(0.300)			(0.387)	
Fraction of Directors with Specific Skill Sets on Board			1.932			2.528***			2.610*
			(1.297)			(0.866)			(1.342)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,022	1,022	1,022	1,022	1,022	1,022	1,022	1,022	1,022

Appendix

Table 14. Correlation between Variables of Interest

Correlation between variables of interest

	Keyword Occurrences of ESG Skill Sets	Keyword Occurrences of Environmental Skill Sets	Keyword Occurrences of HCM Skill Sets	Keyword Occurrences of Other ESG Skill Sets	Directors with Environmental Skill Sets = 1	Directors with HCM Skill Sets = 1	Directors with Other ESG Skill Sets = 1	Number of Directors	Fraction of Directors with ESG Skill Sets	Fraction of Directors with Environmental Skill Sets	Fraction of Directors with HCM Skill Sets	Fraction of Directors with Other ESG Skill Sets	CEO Environmental Incentives = 1	CEO HCM Incentives = 1	CEO Other ESG Incentives = 1	Environmental Violation Cases	HCM Violation Cases	Other ESG Violation Cases	Log (Dollar Amount on Environmental Violation Penalty)	Log(Dollar Amount on HCM Violation Penalty)	Log (Dollar Amount on Other ESG Violation Penalty)
Keyword Occurrences of ESG Skill Sets	1																				
Keyword Occurrences of Environmental Skill Sets	0.86	1																			
Keyword Occurrences of HCM Skill Sets	0.80	0.51	1																		
Keyword Occurrences of Other ESG Skill Sets	0.47	0.16	0.19	1																	
Directors with Environmental Skill Sets = 1	0.51	0.57	0.28	0.17	1																
Directors with HCM Skill Sets = 1	0.46	0.26	0.58	0.16	0.25	1															
Directors with Other ESG Skill Sets = 1	0.38	0.18	0.18	0.65	0.22	0.18	1														
Number of Directors	0.29	0.18	0.22	0.30	0.20	0.22	0.25	1													
Fraction of Directors with ESG Skill Sets	0.80	0.56	0.72	0.51	0.47	0.53	0.44	0.09	1												
Fraction of Directors with Environmental Skill Sets	0.72	0.84	0.41	0.13	0.66	0.24	0.17	0.02	0.64	1											
Fraction of Directors with HCM Skill Sets	0.68	0.44	0.88	0.11	0.24	0.62	0.12	0.03	0.78	0.43	1										
Fraction of Directors with Other ESG Skill Sets	0.40	0.14	0.15	0.88	0.15	0.13	0.68	0.11	0.56	0.17	0.14	1									
CEO Environmental Incentives = 1	0.14	0.18	0.06	0.04	0.13	0.06	0.08	0.01	0.12	0.18	0.07	0.06	1								
CEO HCM Incentives = 1	0.20	0.18	0.14	0.11	0.12	0.10	0.11	0.02	0.17	0.17	0.13	0.13	0.46	1							
CEO Other ESG Incentives = 1	0.38	0.18	0.18	0.65	0.22	0.18	1	0.25	0.44	0.17	0.12	0.68	0.08	0.11	1						
Environmental Violation Cases	0.22	0.31	0.10	-0.02	0.16	0.09	0.01	0.09	0.13	0.27	0.09	-0.02	0.30	0.17	0.01	1					
HCM Violation Cases	0.03	0.04	0.02	-0.02	0.02	0.05	0.01	0.08	-0.01	0.02	0.01	-0.03	0.01	0.05	0.01	0.10	1				
Other ESG Violation Cases	0.01	-0.04	0.01	0.08	-0.02	0.02	0.07	0.15	0.02	-0.05	-0.01	0.06	-0.03	0.03	0.07	-0.05	-0.03	1			
Log (Dollar Amount on Environmental Violation Penalty)	0.09	0.08	0.09	0.00	0.04	0.02	0.00	0.01	0.05	0.07	0.07	0.00	0.07	0.04	0.00	0.12	0.00	-0.01	1		
Log(Dollar Amount on HCM Violation Penalty)	0.01	0.01	0.01	0.00	0.04	0.01	0.01	-0.01	0.06	0.09	0.00	0.00	0.01	0.03	0.01	-0.01	0.01	0.02	0.00	1	
Log (Dollar Amount on Other ESG Violation Penalty)	0.04	0.02	-0.01	0.09	0.03	0.01	0.04	0.08	0.03	0.03	-0.01	0.06	-0.01	-0.02	0.04	-0.03	-0.01	0.23	0.00	0.01	1

Table 15. Number of Violation Cases and ESG Skill Sets of Directors – Inside and Outside S&P 500

This table shows the results of regressing the logarithm of the number of violation cases on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board, and also on CEO ESG incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: S&P 500 Sample

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	-0.039		
	(0.056)		
Directors with ESG Skill Sets = 1		-1.420	
		(1.012)	
Fraction of Directors with ESG Skill Sets on Board			-2.167
			(1.507)
CEO ESG Incentives = 1	-1.397	-1.606	-1.437
	(2.434)	(2.492)	(2.404)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
R-Squared	0.037	0.038	0.037
Observations	1,542	1,542	1,542

Panel B: S&P 1500 Firms excluding S&P 500 Firms

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	0.069		
	(0.046)		
Directors with ESG Skill Sets = 1		-0.047	
		(0.306)	
Fraction of Directors with ESG Skill Sets on Board			0.398
			(0.915)
CEO ESG Incentives = 1	-1.739	-1.650	-1.676
	(1.561)	(1.571)	(1.576)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
R-Squared	0.064	0.062	0.062
Observations	2,564	2,564	2,564

Table 16. Dollar Amount of Violation Penalty and ESG Skill Sets of Directors – Inside and Outside S&P 500

This table shows the results of regressing the logarithm of the dollar amount of violation penalty on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board, and also on CEO ESG incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: S&P 500 Sample

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	0.125		
	(0.083)		
Directors with ESG Skill Sets = 1		0.552	
		(0.935)	
Fraction of Directors with ESG Skill Sets on Board			-0.288
			(2.210)
CEO ESG Incentives = 1	0.289	0.505	0.444
	(1.078)	(1.074)	(1.070)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
R-Squared	0.032	0.030	0.029
Observations	1,542	1,542	1,542

Panel B: S&P 1500 Firms excluding S&P 500 Firms

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	0.151		
	(0.095)		
Directors with ESG Skill Sets = 1		0.526	
		(0.632)	
Fraction of Directors with ESG Skill Sets on Board			0.752
			(1.912)
CEO ESG Incentives = 1	-0.350	-0.235	-0.206
	(0.811)	(0.821)	(0.813)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
R-Squared	0.029	0.028	0.027
Observations	2,564	2,564	2,564

Table 17. Violations and Environmental Skill Sets of Directors – Inside and Outside S&P 500

This table shows the results of regressing the logarithm of either the number of environmental violation cases or the dollar amount of environmental violation penalty on each of three variables related to directors with environmental skill sets, including a dummy variable indicating the appointment of directors with environmental skill sets, a numerical variable that is the number of keyword occurrences of environmental skill sets, and a percentage variable indicating the fraction of directors with environmental skill sets on board, and also on CEO environmental incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: S&P 500 Sample

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Environmental Skill Sets	-0.007	0.035				
	(0.016)	(0.063)				
Directors with Environmental Skill Sets = 1			-0.097	0.077		
			(0.108)	(0.384)		
Fraction of Directors with Environmental Skill Sets on Board					-0.149	0.528
					(0.425)	(1.404)
CEO Environmental Incentives = 1	0.092	0.811	0.080	0.865	0.089	0.839
	(0.212)	(1.058)	(0.208)	(1.040)	(0.208)	(1.053)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.041	0.029	0.041	0.029	0.041	0.029
Observations	1,542	1,542	1,542	1,542	1,542	1,542

Panel B: S&P 1500 Firms excluding S&P 500 Firms

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Environmental Skill Sets	0.086	0.119				
	(0.062)	(0.168)				
Directors with Environmental Skill Sets = 1			0.058	0.774		
			(0.127)	(0.470)		
Fraction of Directors with Environmental Skill Sets on Board					1.311	2.006
					(0.949)	(2.589)
CEO Environmental Incentives = 1	-0.246	-0.033	-0.245	-0.119	-0.275	-0.078
	(0.268)	(1.319)	(0.258)	(1.279)	(0.258)	(1.307)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.034	0.028	0.028	0.030	0.033	0.028
Observations	1,022	1,022	1,022	1,022	1,022	1,022

Table 18. Violations and HCM Skill Sets of Directors – Inside and Outside S&P 500

This table shows the results of regressing the logarithm of either the number of HCM violation cases or the dollar amount of HCM violation penalty on each of three variables related to directors with HCM skill sets, including a dummy variable indicating the appointment of directors with HCM skill sets, a numerical variable that is the number of keyword occurrences of HCM skill sets, and a percentage variable indicating the fraction of directors with HCM skill sets on board, and also on CEO HCM incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: S&P 500 Sample

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of HCM Skill Sets	-0.021	0.017				
	(0.115)	(0.114)				
Directors with HCM Skill Sets = 1			-1.018	-0.045		
			(0.768)	(0.441)		
Fraction of Directors with HCM Skill Sets on Board					-1.031	-0.615
					(1.359)	(1.626)
CEO HCM Incentives = 1	-1.705	0.618	-1.772	0.626	-1.683	0.649
	(2.964)	(0.772)	(2.953)	(0.768)	(2.935)	(0.773)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.027	0.019	0.029	0.019	0.028	0.019
Observations	1,542	1,542	1,542	1,542	1,542	1,542

Panel B: S&P 1500 Firms excluding S&P 500 Firms

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of HCM Skill Sets	0.068	0.0764				
	(0.052)	(0.108)				
Directors with HCM Skill Sets = 1			-0.384	0.183		
			(0.519)	(0.503)		
Fraction of Directors with HCM Skill Sets on Board					0.481	0.369
					(0.676)	(1.334)
CEO HCM Incentives = 1	-2.125	-0.454	-2.052	-0.432	-2.116	-0.434
	(1.747)	(0.506)	(1.689)	(0.497)	(1.758)	(0.514)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.081	0.030	0.082	0.030	0.080	0.030
Observations	1,022	1,022	1,022	1,022	1,022	1,022

Table 19. Violations and Other ESG Skill Sets of Directors – Inside and Outside S&P 500

This table shows the results of regressing the logarithm of either the number of violation cases or the dollar amount of violation penalty on each of three variables related to directors with other ESG skill sets, including a dummy variable indicating the appointment of directors with other ESG skill sets, a numerical variable that is the number of keyword occurrences of other ESG skill sets, and a percentage variable indicating the fraction of directors with other ESG skill sets on board, and also on CEO incentives related to other ESG aspects. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

Panel A: S&P 500 Sample

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Other ESG Skill Sets	0.047	-0.204				
	(0.062)	(0.252)				
Directors with Other ESG Skill Sets = 1			0.074	0.201		
			(0.154)	(0.522)		
Fraction of Directors with Other ESG Skill Sets on Board					0.455	-3.516
					(0.792)	(3.142)
CEO Other ESG Incentives = 1	0.058	0.803	0.066	0.768	0.061	0.807
	(0.288)	(0.965)	(0.289)	(0.963)	(0.288)	(0.960)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.025	0.010	0.024	0.009	0.024	0.011
Observations	1,542	1,542	1,542	1,542	1,542	1,542

Panel B: S&P 1500 Firms excluding S&P 500 Firms

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Other ESG Skill Sets	0.041***	0.371**				
	(0.015)	(0.181)				
Directors with Other ESG Skill Sets = 1			0.032	1.153*		
			(0.074)	(0.588)		
Fraction of Directors with Other ESG Skill Sets on Board					0.459*	5.937***
					(0.245)	(2.273)
CEO Other ESG Incentives = 1	-0.042	0.565	-0.046	0.513	-0.046	0.522
	(0.073)	(0.640)	(0.075)	(0.632)	(0.074)	(0.665)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.025	0.030	0.022	0.033	0.024	0.033
Observations	1,022	1,022	1,022	1,022	1,022	1,022

Table 20. Robustness Check: Number of Violation Cases and ESG Skill Sets of Directors

This table shows the results of regressing the logarithm of the number of violation cases on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board, and also on CEO ESG incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and industry fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	-0.054		
	(0.108)		
Directors with ESG Skill Sets = 1		-0.323	
		(0.453)	
Fraction of Directors with ESG Skill Sets on Board			-0.703
			(1.340)
CEO ESG Incentives = 1	0.161	0.138	0.143
	(0.805)	(0.838)	(0.829)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
R-Squared	0.048	0.047	0.047
Observations	2,564	2,564	2,564

Table 21. Robustness Check: Dollar Amount of Violation Penalty and ESG Skill Sets of Directors

This table shows the results of regressing the logarithm of the dollar amount of violation penalty on each of three variables related to directors with ESG skill sets, including a dummy variable indicating the appointment of directors with ESG skill sets, a numerical variable that is the number of keyword occurrences of ESG skill sets, and a percentage variable indicating the fraction of directors with ESG skill sets on board, and also on CEO ESG incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and firm fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	(1)	(2)	(3)
Keyword Occurrences of ESG Skill Sets	0.082**		
	(0.037)		
Directors with ESG Skill Sets = 1		0.151	
		(0.472)	
Fraction of Directors with ESG Skill Sets on Board			0.619
			(0.926)
CEO ESG Incentives = 1	0.545	0.605	0.591
	(0.467)	(0.449)	(0.452)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
R-Squared	0.154	0.152	0.152
Observations	2,564	2,564	2,564

Table 22. Robustness Check: Violations and Environmental Skill Sets of Directors

This table shows the results of regressing the logarithm of either the number of environmental violation cases or the dollar amount of environmental violation penalty on each of three variables related to directors with environmental skill sets, including a dummy variable indicating the appointment of directors with environmental skill sets, a numerical variable that is the number of keyword occurrences of environmental skill sets, and a percentage variable indicating the fraction of directors with environmental skill sets on board, and also on CEO environmental incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and industry fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Environmental Skill Sets	0.088*	0.046				
	(0.047)	(0.060)				
Directors with Environmental Skill Sets = 1			0.198	0.061		
			(0.143)	(0.238)		
Fraction of Directors with Environmental Skill Sets on Board					1.589*	0.874
					(0.837)	(1.095)
CEO Environmental Incentives = 1	0.650	0.550	0.685	0.568	0.673	0.562
	(0.423)	(0.434)	(0.471)	(0.444)	(0.431)	(0.433)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.076	0.047	0.059	0.046	0.072	0.047
Observations	2,564	2,564	2,564	2,564	2,564	2,564

Table 23. Robustness Check: Violations and HCM Skill Sets of Directors

This table shows the results of regressing the logarithm of either the number of HCM violation cases or the dollar amount of HCM violation penalty on each of three variables related to directors with HCM skill sets, including a dummy variable indicating the appointment of directors with HCM skill sets, a numerical variable that is the number of keyword occurrences of HCM skill sets, and a percentage variable indicating the fraction of directors with HCM skill sets on board, and also on CEO HCM incentives. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and industry fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of HCM Skill Sets	-0.103	0.070				
	(0.108)	(0.052)				
Directors with HCM Skill Sets = 1			-0.152	0.404*		
			(0.281)	(0.239)		
Fraction of Directors with HCM Skill Sets on Board					-1.282	1.000
					(1.404)	(0.777)
CEO HCM Incentives = 1	-0.286	0.184	-0.337	0.196	-0.298	0.187
	(0.843)	(0.280)	(0.870)	(0.279)	(0.848)	(0.283)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.021	0.052	0.020	0.052	0.021	0.052
Observations	2,564	2,564	2,564	2,564	2,564	2,564

Table 24. Robustness Check: Violations and Other ESG Skill Sets of Directors

This table shows the results of regressing the logarithm of either the number of violation cases or the dollar amount of violation penalty on each of three variables related to directors with other ESG skill sets, including a dummy variable indicating the appointment of directors with other ESG skill sets, a numerical variable that is the number of keyword occurrences of other ESG skill sets, and a percentage variable indicating the fraction of directors with other ESG skill sets on board, and also on CEO incentives related to other ESG aspects. Controls include return to assets, log (book to market), log (sale), book leverage, cash-to-asset ratios, capital expenditures, and Big Three institutional investor ownership. I also control for year fixed effects and industry fixed effects. I cluster standard errors by both year and industry. The standard errors are reported in parenthesis below the coefficients. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels.

	# Cases	$ Penalty	# Cases	$ Penalty	# Cases	$ Penalty
	(1)	(2)	(3)	(4)	(5)	(6)
Keyword Occurrences of Other ESG Skill Sets	-0.116	-0.002				
	(0.075)	(0.112)				
Directors with Other ESG Skill Sets = 1			-0.323	0.245		
			(0.218)	(0.326)		
Fraction of Directors with Other ESG Skill Sets on Board					-1.225	-0.059
					(0.822)	(1.432)
CEO Other ESG Incentives = 1	0.407	0.526	0.400	0.490	0.407	0.528
	(0.472)	(0.535)	(0.474)	(0.529)	(0.475)	(0.541)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.091	0.053	0.053	0.053	0.090	0.053
Observations	2564	2564	2564	2564	2564	2564