

# The New Governance Role of Corporate Board: Sustainability Committees

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## ABSTRACT

The growing importance of managing stakeholder relations in modern corporations requires a new governance role of corporate boards to integrate environmental and social (ES) issues into corporate decision-making. With the detailed information on board sustainability committee manually collected from firm proxy statements for US S&P1500 companies, this paper performs a systematic analysis on the determinants and consequences of establishing board sustainability committees. Our initial analysis reveals that firms with strong ES reputation and exposed to high ES regulatory risk are more likely to form sustainability committees on boards. Firms also tend to introduce such committees when expanding businesses. Further analysis distinguishes sustainability committees based on its independence from other committees: Tier 1 committee refers to a specialized board committee designated to only ES issues while Tier 2 committee indicates an existing board committee with expanded ES responsibilities. In contrast to the weak outcomes of Tier 2 committees, our results suggest that firms experience increased third-party ES ratings but not reduced ES regulatory risk following the formation of Tier 1 committees, indicating that firms set up such committees to cater for renewed shareholder preference for ES-conscious investments. In keeping with this interpretation, we further document that stocks of firms with Tier 1 committees are associated with lower expected stock returns. This evidence is consistent with the notion that investors are willing to accept a lower rate of return on firms committed to building their ES reputation.

**Keywords:** ESG, ESG ratings, DEF 14A proxy filings, violations, corporate governance, stakeholderism, stock returns

**JEL Classification Number:** G11, G24, G34, M14, M41, M54

# 1. Introduction

In the recent decade, corporate commitment to sustainable growth on the environmental and social (ES) fronts has emerged to be the new focus of corporate decisions as a result of pressures from investors (Krueger et al., 2020; He et al., 2021; Chen et al., 2020), regulators (Hassan et al., 2019; Hwang et al., 2018; Ilhan et al., 2023) and the public at large (Heese and Pacelli, 2023; Dube and Zhu, 2021). While growing evidence reveals a multitude of corporate strategies that integrate sustainability into corporate decision-making<sup>1</sup>, it remains unclear how companies coordinate and govern these strategic responses in the interest of firm performance and shareholder wealth. The board of directors play a vital role in providing leadership at the highest corporate level. The primary objective of this study is to explore the new competencies of corporate boards in incorporating the sustainability agenda into corporate governance. Specifically, we address the questions of what factors drive the firm to establish board ES committees and the subsequent firm outcomes following the establishment of ES committees.

In the traditional corporate governance paradigm, the board of directors assumes the governance responsibility to mitigate the agency problem arising from the separation between ownership and control to maximize shareholder wealth. However, the rise of focus on corporate sustainability seems to run counter to this dominant role of boards because (1) ES activities directly benefit nonfinancial stakeholders such as customers and employees but not necessarily shareholders and (2) corporate sustainability oftentimes incurs upfront investment with benefits that only accrue in the distant future. As a result, sustainability activities oriented to social purpose may not always enhance firm value and shareholder wealth. In view of the conflicting nature between the stakeholder focus of sustainability activities and the shareholder commitments of boards, the emergency of sustainability committees is only tenable when the objective function of shareholders has evolved to concern not only profit generation but also social impact, termed as “shareholder welfare maximization” by Hart and Zingales (2022). Building on this new objective function of shareholders, we

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<sup>1</sup>Extant literature documents a variety of corporate actions that emerge to prioritize sustainability issues. For example, Comello et al. (2021) report that a growing number of companies in the US make public pledges on their climate actions. Additionally, according to Cohen et al. (2023) the proportion of companies incorporating ESG metrics into executive compensation as new incentives for corporate managers to prioritize sustainability in corporate policies worldwide increased to 30% in 2021 from 3% in 2010. Brown et al. (2022) also find that firms actively engage in technological upgrading to alleviate the regulatory costs of corporate pollution arising from pollution tax.

anticipate that corporate boards fulfil renewed shareholder commitments and acquire sustainability responsibilities aligned with the maximization of shareholder welfare encompassing both financial gains and prosocial investment impact.

To test this conjecture, we perform a systematic analysis on the governance role of boards, manifested through the establishment of sustainability committees, using a sample of firms in the S&P1500 universe in this research. Rather than identifying sustainability committees using commercial databases, we manually collect the information on the formation and composition of sustainability committees from the board of committees reported in firm proxy statements (i.e., DEF 14A filings<sup>2</sup>) for two reasons: (1) manual search ensures that the sustainability committee analyzed in this study form part of board committees in parallel with other committees such as governance and audit committees; and (2) it allows us to track detailed personal information of members associated with this new but important committee. We then further categorise all the sustainability committee information obtained from proxy filings into two cases: Tier 1 committees refer to a standalone, specialized sustainability committee with a committee name containing ES-related keywords, and Tier 2 committee refers to a subcommittee that is accountable for not only ES strategies but also other policies. For these Tier 2 committees, we locate ES-related keywords in the description of committee responsibilities rather than in committee names<sup>3</sup>. We find an increasing trend of initiating Tier 1 ES committees across firms that are included in S&P 1500 from 6% in 2011 to 11% in 2020 as shown in Figure 1, whereas Tier 2 committees rise from 5% in 2011 to 19% in 2020. There is a sharp increase of these committees after 2018, which coincides with the growing investor pressure on ES matters around the time (Dyck et al., 2019; Azar et al., 2021; He et al., 2021).

In the empirical analysis, we first provide evidence on what types of firms form a sustainability committee on board. Among other factors, we focus on three driving motives of incorporating

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<sup>2</sup>DEF 14A filings, also known as proxy statements, play a crucial role in corporate governance. These filings are submitted to the US Securities and Exchange Commission (SEC) by public companies to provide shareholders with essential information before annual shareholder meetings. Proxy statements contain details about corporate governance, executive compensation, board nominations, and other matters that require shareholder approval. They serve as a vital communication tool between companies and their shareholders, ensuring transparency and enabling informed decision-making. In our study, we center on the information found in corporate governance sections since it contains the essential information of corporate board committees: committee members and the committee responsibility.

<sup>3</sup>In this paper, sustainability and ES are interchangeable.

sustainability under board oversight: firm social reputation, ES risk management and business growth. Using Cox and Weibull hazard models, we find that firms are more likely to introduce a sustainability committee when its third-party ES ratings are higher. This is consistent with the notion that firms that have already built a strong ES reputation tend to sustain the reputation by instilling a sustainability focus at the board level in order to cater for investors who prefer ES-conscious stocks. We also find that firms with more existing environmental and social misconducts are more likely to establish the committee. This is in line with the monitoring role of the board to mitigate the litigation risk in the prevention of regulatory penalties that erode firm profits. Finally, firms tend to form a committee when making new investments.

Next, we explore the subsequent outcomes of having a sustainability committee in two main dimensions: firm ES performance and financial market implications. A firm's ES performance is measured by both third-party ratings and ES regulatory violations. The former captures the firm's reputation on the sustainability front while the latter reflects the actual ES risk. The baseline results show that there is a significant positive association between ES ratings from MSCI KLD and Refinitiv Asset4 and the presence of the sustainability committee, whereas there is no correlation of the sustainability committees with ES misconducts. To better isolate the impact of sustainability committee on firm outcomes, we also estimate the changes in ES ratings and misconducts using the event study approach in a difference in differences setting as suggested by the prior literature (Gormley and Matsa, 2014; Callaway and Sant'Anna, 2021; Baker et al., 2022). Consistent with our baseline findings, firms exhibit greater ES ratings but do not significantly reduce ES violations following the introduction of the sustainability committee. In the time series, we find that the improvement of ES ratings as a result of the sustainability committee becomes more pronounced after the Paris Agreement, a landmark international initiative that thrusts corporate sustainability into the spotlight. As discussed above, the board is expected to commit to shareholder welfare which manifests in (1) their preference for ES-conscious investments and (2) financial returns. Given that ES misconducts incur direct regulatory costs and hurt firm profits but sustainability committees do not materially alter a firm's ES risk profile, the evidence by far appears to be in line with the board's tendency to cater for investor preference on stocks of firms with good ES reputation.

The findings on the financial market impact associated with the establishment of sustainability

committees provide additional support for our argument. First, we conduct portfolio analysis by partitioning sample stocks into three groups: firms with Tier 1 committees, those with Tier 2 committees and firms with no sustainability committees. We find that the portfolio that consists of stocks with Tier 1 committees underperforms the portfolio of firms with no committees by a statistically significant 2.6% per year, which cannot be explained by the existing factors (i.e., Fama-French’s five factors in [Fama and French \(2015\)](#)). This is consistent with our previous findings that firms with ES committees promote positive firm image and build favourable market perception on the ES aspects, which caters for investor social preferences and decreases the cost of capital for firms.

Our findings contribute to the literature on the role of boards in corporate governance. Prior literature suggests that boards have functionality in guiding executive appointments, overseeing corporate transactions, and devising corporate strategies ([Masulis et al., 2007](#); [Bebchuk et al., 2009](#); [Anginer et al., 2018](#); [Bhagat and Bolton, 2019](#)). These studies emphasize the monitoring and advising role of boards dictated by the goal of maximizing shareholder wealth. However, Shareholders care about not only the financial performance of portfolio companies but also their ES awareness. This shifting investment dynamic calls for a new role of the board that considers ES issues. An emerging literature enquires about the new governance role of boards that take into account stakeholder interests in corporate decisions. [Dai et al. \(2023\)](#) and [Iliev and Roth \(2023\)](#) highlight the directors’ expertise in firms’ sustainability profile. However, a missing link between director expertise and corporate commitment to ES issues is the empowerment of the board that facilitates the incorporation of stakeholder benefits and sustainability into the corporate decision-making process. In other words, the board’s recognition of sustainability is the precondition for directors’ expertise in ES to have an impact on corporate policies.

Our study provides a comprehensive investigation on the determinants and consequences of ES committees. Closely related to ours, [Khoo et al. \(2023\)](#) study the shareholder election of members on a firm’s corporate social responsibility (CSR) committees. However, our study is markedly different from theirs in two respects: (1) our focus is the sustainability committee on board but their data comes from Refinitiv Asset4 which may include similar committees outside board; (2) rather than examining how sustainability committees are elected, we investigate why

these committees are formed as well as the subsequent consequences of having these committees.

Second, we contribute to the literature on the value impact of corporate ES commitments. Prior literature suggests that firms respond to the increasing ES concerns through voluntary sustainability disclosure (Dhaliwal et al., 2011), donations (Masulis and Reza, 2015), pledges (Comello et al., 2021), and executive compensation (Cohen et al., 2023). We focus on the firms' ES commitment at the highest corporate governance level: corporate board. Specifically, we reveal the specific outcomes when boards acquire new competencies to promote ES policies and the choices board makes among the ES issues firms face (Hart and Zingales, 2022).

Finally, we add to the empirical literature that explores the asset pricing implications of a firm's ES commitment. Prior studies in this literature attribute the asset pricing impact of firm ES performance to three main reasons: risk-return trade-off (Bolton and Kacperczyk, 2021; Hsu et al., 2023), investor attention (Choi et al., 2020) and investor preferences (Pedersen et al., 2021a). Drawing on this line of literature, our study examines the impact of forming a sustainability committee on the cross section of stock returns and why. We document a reduced cost of equity capital for firms with sustainability committees as a result of improving ES ratings and therefore meeting investors' prosocial expectations.

The rest of the paper is structured as follows. Section 2 describes the process of developing our hypotheses on the determinants of and outcomes associated with sustainability committees. Section 3 discusses the details of our manual collection process on sustainability committees, variable and sample construction. Section 4 discusses the research design and empirical results. We conclude our findings in Section 5. The details of variable definitions are provided in Appendix A1.

## 2. Literature Review and Hypothesis Development

Our analysis is grounded in a framework that acknowledges heterogeneity in firms' commitment to environmental and social matters at the board level. Specifically, we classify boards into two tiers based on their acknowledgment and implementation of sustainability responsibilities. We refer to Tier 1 board committees as those specialised sustainability committees to govern firms' sustainability matters. These firms embed ES-related keywords into committees' names as a spe-

cialised board committee represents firms' leadership focus on ES issues (Porter and Kramer, 2011). Tier 2 board committees refer to that firms incorporate environmental and social commitment into their existing board-level committees. This section aims to survey the existing literature on corporate sustainability commitment in order to uncover the potential factors that align with board's objective function to maximize shareholder welfare and drive the formation of ES committees.

## 2.1. Determinants of the Sustainability Committee Establishment

*Firm reputation.* Firms may form ES committees motivated by maintaining their reputation in building up strong and harmonious relations with nonfinancial stakeholders. Prior literature demonstrates a variety of benefits for firms with strong social reputations. Lins et al. (2017) find that firms with higher ESG ratings have better performance in terms of stock market returns, profitability and growth during the 2008–2009 financial crisis, and Ding et al. (2021) provide consistent evidence that firms with higher ESG ratings experience higher stock returns during the covid-19 pandemic period. Besides, Deng et al. (2013) evidence that acquirers with high CSR ratings also experience higher returns during the announcement period and larger improvements in post-merger long-term operating performance compared to acquirers with low ESG ratings. Nofsinger et al. (2019) show that institutional investors also have selective preferences regarding firms' ESG ratings and underweight stocks with lower ESG ratings. Corporate reputation is an elusive concept and the above-mentioned literature has commonly used third-party ESG ratings as a proxy for corporate reputation in the ES aspects. Consistent with this practice in the academic research, Raghunandan and Rajgopal (2022) find that fund managers make ES investments based on ES ratings rather than actual ES risk events. This is understandable from institutional investors's point of view because third-party ratings are readily available and quantifiable to the users. Hence, firms have clear incentives to improve third-party ES ratings to meet the investors' demand for ES-conscious stock investments.

*ES Regulatory Risks.* Firms experience unfavourable market responses in terms of stock market and accounting performance if they fail to manage their ES risks (Flammer, 2013; Eccles et al., 2014; Krüger, 2015). Incorporating ES responsibilities at the board can act as an insurance mechanism and a risk management tool that install appropriate measures to insulate firms from financial



penalties and reputational damages associated with adverse ES incidents. To differentiate the ES ratings and ES risk profiles, we measure a firm’s ES risk using actual environmental and social regulatory violations. These violations are a direct consequence of a firm’s existing ES risk management. We expect that firms facing higher ES risks are more likely to manage such risks with board sustainability committee.

*Investor Pressure.* Institutional investors’ pressure on ES initiatives motivates firms to govern and improve their ES profile. As the most prominent factor in ES, [Krueger et al. \(2020\)](#)’s survey data indicates that a significant number of institutional investors believe that climate risks have an impact on the financial health of companies in their portfolios. In addition, prior literature also suggests that if shareholders lack confidence in a company’s ES performance, they advocate for the implementation of ES initiatives through ES-related proposals ([He et al., 2021](#)). Thus, it is plausible that a higher propensity to create a sustainability committee is linked to a larger proportion of institutional ownership since institutional equity investors frequently represent these investment clients ([Azar et al., 2021](#)). Therefore, We envision that higher institutional ownership may prompt companies to establish a dedicated board committee to address ES concerns.

*Firm fundamentals.* The presence of an ES committee could be related to various firm fundamentals. We hypothesize that firms with higher growth of capital expenditure may have a greater likelihood of establishing an ES committee since they may have more concerns regarding ES-related misconduct when there are in a business expansion. We also control for other common firm characteristics such as market capitalization and leverage ratio, as well as firm financial performance, including book-to-market ratio and return on assets as firms with financial slack tend to engage in ES commitment ([Cohn and Wardlaw, 2016](#); [Xu and Kim, 2022](#)).

## **2.2. The ES Outcomes Associated with ES Committees**

We examine how the market perception of firm ES performance, as proxied by commercial ES ratings, is associated with the ES committee establishment. According to [Woolcock et al. \(2001\)](#), social capital can be defined as an institution’s social, and professional networks representing a valuable resource that can be utilized during challenging circumstances. And prior studies provide supporting evidence that firms can leverage their higher social capital to perform better in terms of

stock market returns, profitability and growth during the financial crisis (Lins et al., 2017). Ding et al. (2021) provide additional evidence during Covid-19. In addition, ESG funds hold portfolio firms with higher ESG rating rather than investigating firms' actual ESG behaviour (Raghunandan and Rajgopal, 2022). Therefore, it is plausible that firms are incentivised to perform better in their ES profiles based on what they are measured by ES ratings, which is a commonly used tool to quantify firm ES performance. We then argue that when the board is delegated to govern corporate sustainability, it tends to focus on managing market perception, thereby catering for investor demand and improving firm valuation. Thus, we expect that the establishment of a sustainability committee leads to a higher third-party ES rating.

Next, we examine if the establishment of sustainability committees is associated with firms' ES regulatory risks. On the one hand, previous studies suggest that ES engagement could lower firms' risk and the risk reduction varies across engagement types (Hoepner et al., 2022). Combined with Porter and Kramer (2011)'s statement that a specialised board-level committee is a clear indication that shows firms would like to engage in that field, we expect that the establishment of sustainability committees leads to a reduction in firms' ES regulatory violations. However, on the other side, it is also plausible that the sustainability committee might exist in name only. As previous findings suggest, firms experience more ES misconducts when they just meet or beat the target short-term financial performance (Caskey and Ozel, 2017; Raghunandan, 2021). Therefore, boards may not be willing to make significant ES investments which may undermine a firm's short-term financial performance. In addition, there is an investor preference for green stocks. ES-oriented investors only invest in stocks based on firms' ES ratings rather than their actual compliance with labour and environmental laws (Raghunandan and Rajgopal, 2022). Therefore, on the other hand, it is possible that the formation of a sustainability committee does not significantly reduce firm ES risks.

### **2.3. Financial Market Outcomes of ES Committees**

Finally, we study the asset pricing implications of sustainability committees as a way to infer how these committees have influenced cost of equity capital. Based on the above discussions, there may be two mechanisms through which sustainability committees influence stock returns. One is that the establishment of sustainability committees reduces firms' ES risk exposure, thereby

resulting in a lower cost of capital. This is based on the findings in prior literature that investors demand a higher required rate of return for firms that are exposed to greater ES risks (Chava, 2014; Bolton and Kacperczyk, 2021) and vice versa. Another mechanism is that sustainability committees build up firms' social reputation in accord with the renewed investor preference for ES conscious investments. The improved ES reputation then attracts more investors, lowering its cost of equity capital. According to Pastor et al. (2022), they find that greener firms have lower costs of capital by using their general equilibrium model. Similarly, Pedersen et al. (2021b) assume that investors have ESG preference in their utility functions and find that a firm's cost of capital is lower if its ESG rating is higher.

### 3. Data and Descriptive Statistics

#### 3.1. Manual Collection on Sustainability Committees

Our main variable of interest is the sustainability committee, which is an indicator that equals one if firms have a specialized committee dedicated to addressing potential ES issues. To collect data on sustainability committees, we use the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database, which is an online system maintained by the US Securities and Exchange Commission (SEC) that provides free access to corporate filings. The EDGAR system covers various types of filings, including annual reports (Form 10-K), quarterly reports (Form 10-Q), current reports (Form 8-K), and proxy statements. Companies that are required to file with the SEC must submit their disclosures and documents through the EDGAR system. We obtained the sustainability committee information from DEF14A filings, also known as definitive proxy statements, which are filed in connection with the solicitation of proxies for the company's annual meeting of shareholders. The DEF14A filings contain important information about the annual meetings, including details about matters to be voted on, the management team and board of directors, their compensation, and their relationships with other companies or individuals. That information is under the corporate governance section of DEF14A filings and our interested ES committee variables are obtained from this section.

The primary obstacle in analysing the sustainability committee is the lack of detailed informa-

tion and coverage by commercial databases (e.g., BoardEx, see appendix). For instance, BoardEx has two crucial coverage issues. Based on our comparison of the sustainability committee coverage, we argue that SEC EDGAR covers more firms as stated in Appendix A2. Second, as BoardEx only provide board committee names but without any details of the responsibility of firms, therefore, it lacks coverage on the tier 2 sustainability committee. However, there is no uniform format for firms to report their DEF 14A filings. The best we can do is manually collect the committee information. Specifically, We follow two steps to collect the ES committee information: we start by collecting the sustainability committee information from the section of “board committee”. We require a firm’s DEF 14A filing to mention the words “board committee(s)”. We then locate 1000 words immediately following “board committee(s)”, which is the most likely paragraph that discusses the details of the committee information. We then further require those 1000 words to mention the ES-related keywords in our terminology list (as stated in Appendix A3) at least once. If the first step does not yield relevant information, we then locate the subsequent 2000 words following the phrase “corporate governance” and ensure that they include ES-related keywords in our terminology list at least once. Both two steps contain our second manual data cleaning to ensure the subsequent words are mentioning sustainability committees. Finally, if we find no information from the above two steps, we assume that a firm does not have a sustainability committee.

After the data cleaning process, we categorise the sustainability committee information into two tiers. Tier 1 sustainability committee pertains to companies that establish a dedicated ES committee at the board level and it contains ES-related keywords in the name of the committee, such as environmental committee or corporate social responsibility committee. Next, if a board committee is responsible for ES criterion and only contains ES keywords in its responsibilities but it does not have any ES-related keywords in its name (e.g., Nominating and Governance Committee in a firm is responsible for ES-related issues), then it is defined as a Tier 2 ES Committee. We create an indicator variable of *Tier 1 Committee* (*Tier 2 Committee*) equals one if firms have a Tier 1 (Tier 2) sustainability committee. In addition, we also obtain another indicator that equals one if firms either have a Tier 1 sustainability committee or a Tier 2 committee (i.e., ES Committee = 1).

### 3.2. Measuring Market Perception

We include the vector of market perception, which is intended to capture the impacts of ES rating provided by third-party rating agencies. ES rating is the rating assigned to the company by MSCI KLD. Originally, MSCI KLD does not provide a genuine scale itself. However, prior academic studies (e.g., [Lins et al., 2017](#)) have summed up KLD’s judgment as to “strengths” and “concerns” separately and scaled both by the total number of strengths and concerns available. This course of action results in a scale of  $-1$  to  $+1$ . Note that KLD also has strengths and concerns items for norms-oriented categories related to alcohol, military, firearms, gambling, nuclear, and tobacco, which we decided to ignore. Thus, the aggregate ES rating for each company is calculated as total scores of strengths deducted from the total scores of concerns. And the strengths and concerns come from the following six dimensions: Community, Diversity, Employee Relations, Environment, Human Rights, and Product. And thus is a proxy for the extent to which a firm is making an effort to improve its ES performance.

### 3.3. Measuring ES Risks

We measure a firm’s exposure to social and environmental responsibilities by the consequences of their real activity management in the following manner. We classify violations as pertaining to the consumer, labour, environment, or “other” based on Good Jobs First’s classification scheme. Specifically, Good Jobs First assigns all violations to one of nine types, primarily based on the federal agency responsible for assessing the violation: competition, consumer protection, employment, environment, financial, government contracting, healthcare, workplace safety, and miscellaneous. We classify “employment” and “workplace safety” violations as pertaining to labour issues; “environment” violations as pertaining to environmental issues; and “competition” and “consumer protection” as pertaining to consumer issues. We further combine consumer and labour violations into social issues. We classify the remaining types of violations as “other.” Violations pertaining to labour, consumer protection, and the environment comprise the vast majority of observations in the Violation Tracker. In the end, for each year, we compute firms’ ES violations as the natural logarithm of the numbers of social and environmental compliance violations by the firm. we also

compute an alternative measurement of firm ES risks as the natural logarithm of firms' environmental and social violation penalties.

### 3.4. Sample Construcion

For financing information, we collect them from CRSP (Center for Research in Security Prices), and we gather accounting information from Compustat. We start with the Compustat universe and keep all firm-year observations for which financial information is available. To examine the market perceptions, we included ES ratings from MSCI KLD and Refinitiv. Next, to study the consequences of firms' real ES activity management, we include the violations from environmental and social aspects from Violation Tracker. We also combine firms' environmental and social penalties as an alternative measurement of firms' ES risk. Our analysis focuses on firms that are included in S&P1500 historical constituent index from 2011 to 2020, which restricts our analysis to 20,153 firm-year observations.

### 3.5. Portfolio Analysis

Finally, we test the asset pricing implications of ES committees. Followed by [Fama and French \(2015\)](#), we formed three portfolios by ES committees. Portfolio 1 contains firms with Tier 1 sustainability committees. And Portfolio 2 includes firms with Tier 2 sustainability committees. Portfolio 3 contains firms with no sustainability committees. For each stock, we obtain the monthly 1-year follow-up stock price data for the portfolio analysis and rebalance the sustainability committee portfolio on the last date of each June. For each portfolio, we calculated the value-weighted monthly returns for all sustainability committee portfolios. Next, in order to see if the sustainability committee portfolio returns can be fully explained by the existing factors, we add monthly Fama-French 5 Factor returns from Keneth French's website into the portfolio return data. Finally, we run the regression of monthly portfolio returns against Fama-French 5-factor returns by the sustainability committee.

### 3.6. Summary Statistics

Table 1 shows the summary statistics. The average size of the firms is 2.5 billion dollars. Furthermore, the mean value of ROA is positive, which suggests that the sample of firms is profitable on average. The median firm has a relatively low leverage ratio of 39%. The average institutional ownership is 78% in our sample, which suggests that institutional investors hold a substantial portion of the outstanding shares of S&P 1500 firms. The mean value of businesses' new investment measurement, the natural logarithm of Property, Plant and Equipment (PPE) is relatively large (0.3 billion dollars), which accounts for a significant portion of firms' market capitalisation on average.

[Insert Table 1 here]

## 4. Empirical Analyses

### 4.1. Firm-level Determinants of Sustainability Committees

We start our empirical analysis by examining the determinants of ES committee initiation. To explore the potential factors that affect the establishment of ES committees, we follow Wang et al. (2021) and Dube and Zhu (2021) to estimate the Cox and Weibull hazard models in which the "failure event" is the establishment of an ES committee in a given year<sup>4</sup>. As discussed above, these determinants likely relate to market perception of firms, ES risks, investor pressure and firm characteristics and we examine the following model:

$$\begin{aligned} ES\ Committee_{i,t+1} = & \alpha + \beta_1 ES\ Rating_{i,t} + \beta_2 ES\ Risk_{i,t} + \beta_3 IO_{i,t} + \beta_4 PPE_{i,t} + \\ & \beta_5 BM_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Size_{i,t} + \beta_8 Leverage_{i,t} + \tau_t + \theta_j + \epsilon_{i,t}, \end{aligned} \tag{1}$$

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<sup>4</sup>We use COX model because it places no parametric structure on the hazard function but allows the independent variables to shift the function upward (positive coefficient) or downward (negative coefficient). We choose the Weibull distribution for its flexibility and we use the Exponential distribution to fit the fact that a large proportion of firms build up ES committees after 2018, as shown in Figure 1.

where  $t$  indexes years and  $j$  indexes industries. The dependent indicator variable  $ES\ Committee_{i,t+1}$  equals one if firms  $i$  either have a Tier 1 or Tier 2 ES committee in year  $t + 1$  and zero otherwise. Furthermore, we change the main independent variable into  $Tier\ 1\ Committee_{i,t+1}$ , which narrows down to firms that have a Tier 1 ES committees in year  $t + 1$ . Based on the previous discussion, we include control variables: market perception, ES risks, investor pressure, and common firm characteristics in year  $t$ . The vector of  $ES\ Rating_{i,t}$  relates to market perception received by firms in year  $t$ .  $ES\ Rating$  is the firm’s ES rating measured by MSCI KLD, which contains the strengths and concerns from aspects of the community, diversity, employee relations, environment, human rights and product. We followed the previous literature on the application of ES rating measurement and it is calculated as the sum of all strengths from seven vectors minus the sum of all concerns. We exclude the metrics on norms-oriented categories related to alcohol, military, firearms, gambling, nuclear, and tobacco (e.g., [Lins et al. \(2017\)](#) and [Ding et al. \(2021\)](#)). Next, we included in the vector  $ES\ Risk_{i,t}$ , which is intended to capture firms’ real activity management towards corporate crime and misconduct in environmental and social aspects. There are two measurements:  $\#ES\ Risk$  is the natural logarithm of the number of compliance ES violations by companies. Besides, we obtained an alternative measurement of violations as the natural logarithm of adjusted penalties by the company as  $\$ES\ Risk$ . The institutional ownership,  $IO$ , is measured by the fraction of the firm’s equity owned by institutional investors. Next,  $BM$  and  $ROA$  is calculated as the book-to-market ratio and return on firm assets respectively. We also include the natural logarithm of market capitalisation and leverage ratio as  $Size$  and  $Leverage$ .

Table 2 presents the results of our analysis on the determinants of ES committee initiation. We follow the prior studies to estimate different hazard models where the "failure event" is the adoption of ES committees. Specifically, Columns 1, 4 and 7 present the COX proportional hazard model whereas Columns 2, 3, 5, 6, 8, and 9 report the estimates assuming the hazard function following a Weibull (exponential) distribution. The results of Columns 1 - 9 show that firms with favourable market perceptions are more likely to build up an ES committee, which suggests that firms maintain their favourable market perception throughout the initiation of a specialised board-level committee. There are alternative combinations of violation measurements through Columns 1 - 9, while the coefficients of market perception, in other words, firms’ ES ratings reach consistency. There is also



evidence of a positive relation between ES risk in the current year and the ES committee initiation in the next year, while the Tier 2 committee is not correlated with the ES risk according to the last three columns. Next, consistent with our expectation, firms with higher expansion in new business are more likely to form an ES committee to respond to potential ES initiatives. Last, we do not conclude a significant relation between firm financial performance (i.e., BM ratio and ROA) and the formation of ES committees while there is little evidence that the leverage ratio is associated with the establishment of ES committees. We control for year-fixed effects and 2-digit industry-fixed effects throughout all columns<sup>5</sup>.

[Insert Table 2 here]

## 4.2. ES Ratings Outcomes of Sustainability Committees

Next, we first explore if there is a relation between ES committee establishment and market perception, as represented by commercial ES ratings. Our analysis is based on the following model:

$$\begin{aligned}
 ES\ Rating_{i,t+1} = & \alpha + \beta_1 ES\ Committee_{i,t} + \beta_2 ES\ Risk_{i,t} + \beta_3 IO_{i,t} + \beta_4 PPE_{i,t} + \\
 & \beta_5 BM_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Size_{i,t} + \beta_8 Leverage_{i,t} + \tau_t + \theta_j + \epsilon_{i,t},
 \end{aligned}
 \tag{2}$$

where the dependent variable,  $ES\ rating_{i,t+1}$  is the ES rating provided by MSCI KLD (or Refinitiv, as an alternative measurement). The main interest of the independent variable,  $ES\ committee_{i,t}$  is measured as if firms have an ES Committee either it is categorised as Tier 1 or Tier 2 in year  $t$ . Furthermore, we also restrict the main independent variable to only include the Tier 1 ES committee. Besides, we obtain the same group of control variables as stated in Eq. (1).

Table 3, Panel A, presents the results of this test using MSCI KLD ES rating as the dependent variable. Based on the results from Columns 1 and 4, the coefficient on  $ES\ Committee$  is significantly positive, suggesting that the establishment of an ES committee would bring favourable market perception to the firms. Next, Columns 2 and 5 also indicate a positive relation if we

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<sup>5</sup>We control for industry-fixed effects instead of firm-fixed effects since ES committees are persistent within firms, and controlling for firm-fixed effects would throw away much of its economically meaningful variations (deHaan, 2021).

only include the Tier 1 ES committees. While we do not find a significant relation between Tier 2 Committees and firms' ES ratings. Intuitively, there is a strong connection between the market perception in the current year and in the next year. The significant negative relation between firm compliance violation measurements and ES ratings indicates once poor real activity management is realised, there is an instant response in market perception in the following year. We further included the Refinitiv ES rating as an alternative dependent variable in Panel B. There is still a salient relation between ES rating and ES committee, or a restricted variable that only includes Tier 1 ES committees. While there is little evidence on the relation between Tier 2 ES committees and ES Ratings. Similarly, The ES rating measured by Refinitiv in the current year is positively correlated with the ES rating in the next year for a firm with strong significance. Besides, the relation between ES risks and ES ratings is robust if we use the Refinitiv ES rating as a proxy for market perception.

[Insert Table 3 here]

#### 4.2.1. The ES Rating Outcomes Following the Adoption of ES Committees

To better isolate the causal effect of the ES committee establishment on a firm's ES rating, we follow [Gormley and Matsa \(2014\)](#) to estimate this relation by an event study in a difference-in-differences setting. The treatment group consists of firms that adopted a specialised ES committee during the period from 2011-2020. The control group consists of firms that do not have Tier 1 ES committees but show similar characteristics to treatment firms in a [-3, +3] window from three years before to three years after the adoption. To make the samples between the two groups more comparable, we identify control firms using the nearest neighbour method and the matching characteristics we use are the same as those control variables included in Eq. (1) in year  $t - 1$ . Eventually, the five closest firms in a given year from never or have not been treated samples are matched to the treatment observations. The matched samples are used for the multi-event DID models and the regression model takes the following form:

$$\begin{aligned}
ES\ Rating_{i,c,t+1} = & \alpha + \beta_1 (Treatment \times Post)_{i,c,t} + \beta_2 ES\ Rating_{i,c,t} + \beta_3 ES\ Risk_{i,c,t} + \\
& \beta_4 IO_{i,c,t} + \beta_5 PPE_{i,c,t} + \beta_6 BM_{i,c,t} + \beta_7 ROA_{i,c,t} + \beta_8 Size_{i,c,t} + \\
& \beta_9 Leverage_{i,c,t} + \tau_{c,t} + \theta_{c,i} + \epsilon_{c,i,t},
\end{aligned} \tag{3}$$

where  $t$  indexes years,  $i$  indexes firms and  $c$  indexes cohorts. The dependent variable is the ES rating provided by MSCI KLD.  $Treatment \times Post_{i,c,t}$  is an interaction term of the  $Treatment$  dummy, equals one for treatment firms and zero otherwise, and the  $Post$  dummy is equal to one in the years following the adoption of an ES committee. The coefficient on this interaction represents the average treatment effect on the treated firms, which are adopters of ES committees in year  $t$  in a given cohort.  $\tau_{c,t}$  is the cohort-year period fixed effects that control for the  $Post$  dummy in each event.  $\theta_{c,i}$  controls the cohort-firm fixed effects which absorbs the  $Treatment$ .

Table 5, Column (1) to Column (3) shows the treatment effect of firms' ES ratings estimated results of our event study approach.  $\beta_1$  in  $t = -1$  is omitted and normalized as a benchmark. Column (1) shows the analysis by applying firms' ES ratings as the dependent variable. The coefficient of the  $Treatment \times Post$  variable is positive and significant during the post-treatment periods, indicating that a specialised ES board committee improves a firm's ES rating compared with firms that do not initiate ES committees. In Column (2) and Column (3), we further decompose firms' ES ratings into ES concerns and ES strengths to deeply understand how the ES committee establishment affects a firm's ES rating. We find a negative and significant relation between ES committees and firm ES rating concerns while the coefficient is not significant when we change the dependent variable into ES rating strengths. Combining the results we conclude that an ES committee improves a firm's ES rating through reducing the ES rating concerns.

#### 4.2.2. Paris Agreement Analysis

We consider a setting in which expectations regarding future climate regulations receive an exogenous shock, namely the December 2015 Paris Agreement, under which world governments

agreed to take actions to limit global temperature increases. When the agreement was announced, a natural implication for executives and investors to draw was the governments, including US federal and state governments would tighten their environmental regulations related to the mitigation of climate change. This shock implies that US firms would face greater climate regulatory risk, especially those firms more exposed to this risk because of their business activities. To test if the possibility of the ES committee initiation increases after the Paris Agreement, we interact the ES committee variables with the *Paris* dummy variable, which equals one for years after the Agreement year of 2015. We obtain the following setting to study the effect of ES committees on firm ES ratings:

$$\begin{aligned}
 ES\ Rating_{i,t+1} = & \alpha + \beta_1 (ES\ Committee \times Paris)_{i,t} + \beta_2 ES\ Committee_{i,t} + \beta_3 Paris_{i,t} + \\
 & \beta_4 ES\ Rating_{i,t} + \beta_5 ES\ Risk_{i,t} + \beta_6 IO_{i,t} + \beta_7 PPE_{i,t} + \beta_8 BM_{i,t} + \\
 & \beta_9 ROA_{i,t} + \beta_{10} Size_{i,t} + \beta_{11} Leverage_{i,t} + \tau_t + \theta_j + \epsilon_{i,t},
 \end{aligned}
 \tag{4}$$

where the dependent variable,  $ES\ Rating_{i,t+1}$  is the ES rating provided by MSCI KLD. The interaction term of  $(ES\ Committee \times Paris)_{i,t}$  equals one if firms adopt ES committees after the Paris Agreement. Furthermore, we restrict the analysis of the effect of the Tier ES committee based on the findings in Table 3.

Table 6 presents the results of our analysis. The significantly positive interaction between the *EScommittee* variable and the *Paris* dummy in Columns 1 and 3 suggests following the exogenous shock in regulatory changes and holding all other variables constant, firms with ES committees experience an increase of 0.26 in firms' ES ratings on average. As the mean value of the ES rating is 1.14, we should acknowledge this effect has a significant economic sense. Similarly, the significant coefficient on the interaction between the *Tier 1 Committee* and *Paris* shows that firms with a specialised Tier 1 ES committee will increase firms' ES ratings by 0.28 on average in the next year.

### 4.3. ES Risks Outcomes of Sustainability Committees

We next explore the effect of ES committees on firms' ES compliance violation risk management. Cohn et al. (2022) examine the applicability of count data models in financial research and emphasize their benefits in this field. Count data models are advantageous in finance research because they can effectively model infrequent occurrences and manage data sets with numerous zero values. As observed from Table 1, there is a significant portion of firms that do not have corporate misconducts and crimes. Therefore, we follow Cohn et al. (2022) to include the Poisson pseudo-maximum likelihood estimation to study this relation. The details of the analysed regression are obtained as follows:

$$\begin{aligned} \#ES\ Risk_{i,t+1} = & \alpha + \beta_1 ES\ Committee_{i,t} + \beta_2 ES\ Rating_{i,t} + \beta_3 IO_{i,t} + \beta_4 PPE_{i,t} + \\ & \beta_5 BM_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Size_{i,t} + \beta_8 Leverage_{i,t} + \tau_t + \theta_j + \epsilon_{i,t}, \end{aligned} \tag{5}$$

where the dependent variable is the natural logarithm of the number of violations by firm  $i$  in year  $t$ . We also include another alternative dependent variable as  $ES\ Risk_{i,t+1}$ , which represents the natural logarithm of the dollar amount of penalties by firm  $i$  in year  $t + 1$ .  $ES\ Committee_{i,t}$  is an indicator variable that equals one if a firm either has a Tier 1 or a Tier 2 ES committee. And we also include the same vector of control variables as stated in the previous setting. We alternatively change the independent variable  $ES\ Committee_{i,t}$  into  $Tier\ 1\ Committe_{i,t}$  ( $Tier\ 2\ Committe_{i,t}$ ), which is an indicator that equals one if firm  $i$  has a Tier 1 (Tier 2) ES committee in year  $t$ .

**[Insert Table 4 here]**

Table 4 indicates there is no significant relation between the ES committee and violations, which is consistent with our hypothesis that the ES committee does not improve real activity management. By far, our findings indicate that the establishment of ES committees has proven beneficial for firms, fostering positive market perceptions, which is aligning with investors' preferences for stocks associated with strong ES reputations. However, we find no evidence of a material reduction in firms' irresponsibility, which is measured by firms' ES compliance violations after the ES

committee initiation. In the next section, we seek further approval for our hypothesis from the implication on financial performance.

[Insert Table 5 here]

## 4.4. Financial Market Outcomes

### 4.4.1. Cross-sectional Regression

First, we examine the cross-sectional variation in the relation between stock returns and firm ES committees. For all tiers of ES committees, we related them to their corresponding subsequent monthly stock returns in the cross-section. We first estimate the following cross-sectional regression model using pooled OLS:

$$R_{i,k+1} = \alpha + \beta_1 ES\ Committee_k + \beta_2 Controls_k, \quad (6)$$

where  $R_{i,k+1}$  measures the stock return of firm  $i$  in month  $k + 1$  and  $ES\ Committee_k$  is a generic term alternately standing for *Tier 1 Committee*, *Tier 2 Committee* and *ES Committee* in month  $k + 1$ . The vector of controls is the same as included in Eq. (1). We also include year-month fixed effects and cluster standard errors at the firm level. Our coefficient of interest is  $\beta_1$ .

We report the results in Table 7. We find a negative and statistically significant effect on firms' subsequent monthly stock returns. The effect is also economically significant: for firms with Tier 1 ES committees, leads to a 40 basic points decrease in stock returns per month, or 4.8% annualised. In the last two Columns, we include industry fixed effects and year-month fixed effects. The economic significance reduces to 20 bps, or 2.4% annualised.

### 4.4.2. Fama-MacBeth Regression

In Table 8, we examine the ES committee-return relation by running Fama-MacBeth regression to control for a variety of firm characteristics as included in Eq. (1). The results of these regressions are consistent with the results obtained from the pooled cross-sectional regression of stock returns

on ES committees, which show that Tier 1 ES committees significantly negatively predict future stock returns (40 bps per month, or 4.8% annualised). The predictability of ES committees is not subsumed after including a bunch of firm characteristics jointly.

[Insert Table 8 here]

#### 4.4.3. Portfolio Analysis

In Table 9, we follow standard procedure and investigate the extent to which the variation in average returns of ES committee-sorted portfolios can be explained by existing risk factors. The regression is followed by the five-factor model of Fama and French (2015) and it is estimated by:

$$R_t = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 CMA_t + \beta_5 RMW_t, \quad (7)$$

where  $R_t$  is the excess return to some asset in month  $t$ ,  $RMRF_t$  is the month  $t$  value-weighted market return minus the risk-free rate, and  $SMB_t$  (small minus big),  $HML_t$  (high minus low), and  $CMA_t$  (conservative minus aggressive) and  $RMW_t$  (robust minus weak) are the month  $t$  returns on zero-investment factor-mimicking portfolios designed to capture size, book-to-market, investment and operating profitability effects, respectively. The intercept coefficient  $\alpha$ , is the abnormal return in excess of what could have been achieved by passive investments in the factors. This research design adopts controls for standard risk factors and tests if the long-short portfolio in the focal characteristic yields alpha. The last row in Table 9 shows the results of estimating the above equation where the dependent variable is the monthly return difference between Tier 1 ES committee portfolios and no ES committee portfolios. Thus, the alpha in this estimation is the abnormal return on a zero-investment strategy that buys the Tier 1 ES committee portfolio and sells short the no ES committee portfolio. For this specification, the alpha is 22 basis points per month or about 2.6% per year with significance. The remaining rows of Table 9 summarize the result of estimating the above equation for Tier 1 ES committee, Tier 2 ES committee, no ES committee (in other words, firms do not have ES committees). As stated in the table, the significant performance difference between Tier 1 ES committee and no ES committee portfolios is driven by the significant negative underperformance of the Tier 1 ES committee portfolio. The Tier 1 ES committee portfolio earns

a negative and significant alpha of 18 basis points per month, while the alphas of either Tier 2 ES committee or no ES committee portfolio are fully explained by the Fama-French 5-factor model. Overall, we show significant evidence that the Tier 1 ES committee portfolio underperforms other portfolios during our sample period of 2011 to 2020 and the return difference delivers marginal significance.

[Insert Table 9 here]

## 5. Conclusion

A rapidly growing number of large firms, at least in the US, has recently begun to include ES criterion in board committees, which indicates their effort to shift to stakeholderism. However, although theoretically “shareholders stakeholderism” and policy changes could set the stage for a fresh turn in the corporate purpose cycle, neither trend is likely to be sufficiently potent to alter fundamentally corporate purpose in US firms. In this paper, we examine both the factors that determine the ES committee formation and the economic outcomes that emerge for the firms build up specialised ES committees. Among the determinants of the ES committees, we identify the factors that have impacts on the formation of the ES committees: market perception (firm ES ratings), ES compliance violation risks and business growth. Next, we draw a causal relation between firm ES ratings and the ES committee formation by using an event study with a difference-in-difference setting, while we do not find evidence that ES committee formation reduces firm ES compliance violations, which is consistent with our hypothesis that the establishment of ES committees caters investors preferences on stocks of firms with good ES reputation. Finally, our analysis of the effect of ES committees on stock returns provides supplementary evidence that the long-short portfolio of buying firms with Tier 1 ES committees and selling firms have no such ES committees earns negative return differences as the establishment of ES committees reduces firms’ cost of capital, while the statistical power is marginal.



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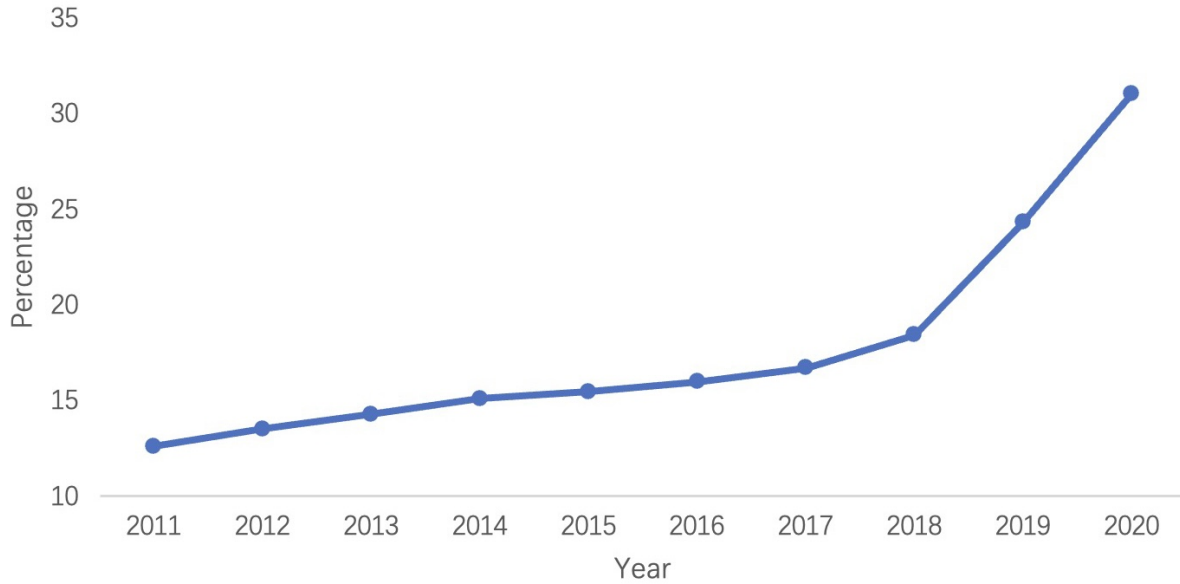
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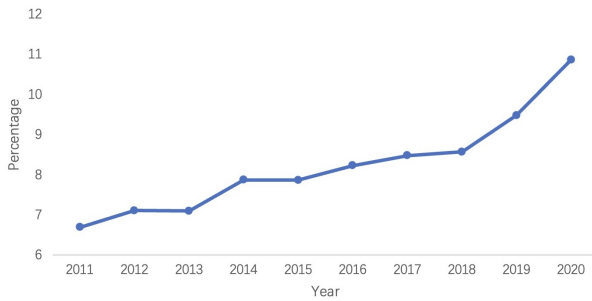
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### Figure 1: The Adoption of ES Committee Over Time

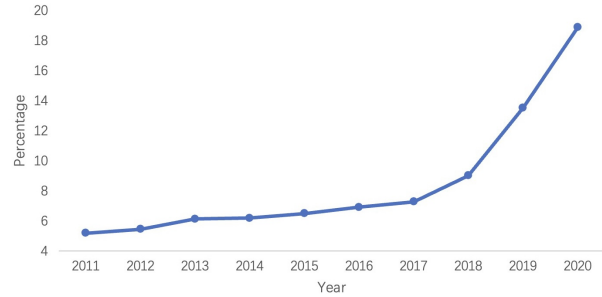
This figure plots the percentage of ES Committee adoption among S&P 1500 firms from 2011 to 2020. Panel A shows the adoption rate of Tier 1 ES committee. Panel B plots the adoption rate of Tier 2 Committee over the sample period. In Panel C, we show the ES committee adoption rate by aggregating Tier 1 and Tier 2 ES committee.



Panel A: ES Committee

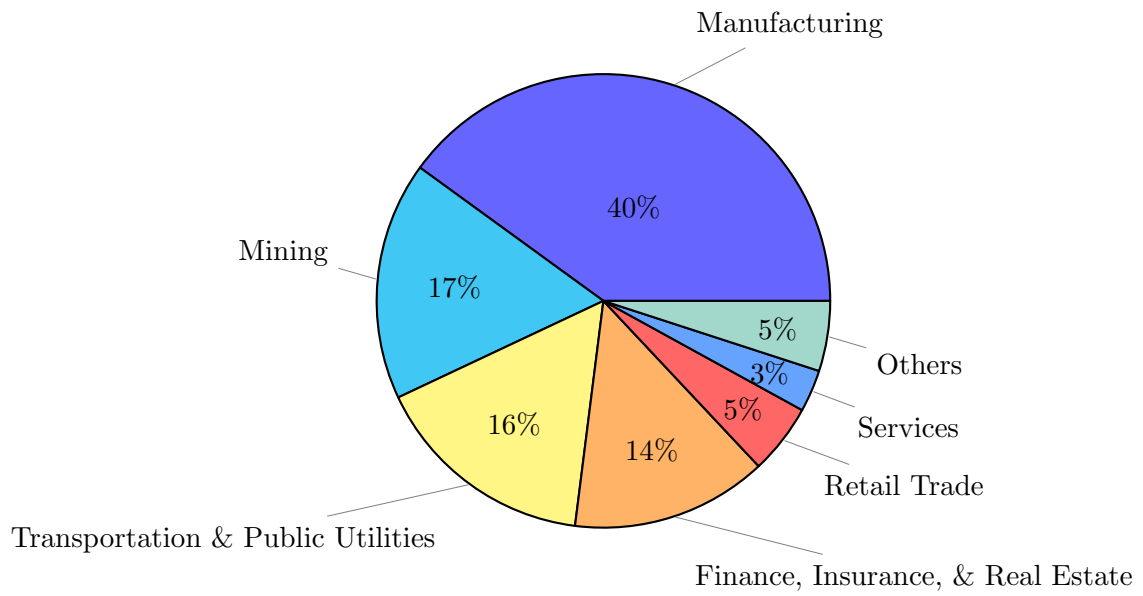


Panel B: Tier 1 Committee



Panel C: Tier 2 Committee

**Figure 2: The Adoption of ES Committees by Industry**



**Table 1:**  
**Firm-Level Summary Statistics**

This table reports summary statistics including number of observations ( $N$ ), mean ( $Mean$ ), standard deviation (St. Dev), median ( $Median$ ), 25th and 75th percentiles ( $25^{th}$  and  $75^{th}$ ) for the sample used in this study. *Tier 1 Committee* is an indicator variable that equals one if firms establish a dedicated board committee focusing on environmental and social matters identified based on committee names. *Tier 2 Committee* is an indicator variable for firms that assign firm environmental and social responsibilities to existing board committees, identified based on board committee descriptions. *ES Committee* is an indicator variable that equals one if a firm has either a Tier 1 or Tier 2 sustainability committee. *ES Rating (MSCI)* is the ES rating obtained from the MSCI KLD database. *ES Rating (Refinitiv)* is the ES rating provided by the Refinitiv database.  $\#ES$  Violation is the natural logarithm of violations provided by the Violation Tracker database.  $\$ES$  Violation is the natural logarithm of adjusted penalties provided by the Violation Tracker database. *IO* is the fraction of firms' equity owned by institutional investors. *PPE* is the natural logarithm of investment in property, plant and equipment (PPE). *ROA* is defined as income scaled by total assets. *Leverage* is the dollar amount of debts scaled by the firm's total debts plus common equity. *BM* is the book value of equity divided by the market value of equity. *Size* is the natural logarithm of a firm's market capitalisation. All continuous variables are winsorized at the 1% and 99% of their distribution. The sample period is from 2011 to 2020.

	N	Mean	St. Dev	Median	$25^{th}$	$75^{th}$
ES Committee	20153	0.152	0.362	0	0	0
Tier 1 Committee	20153	0.071	0.263	0	0	0
Tier 2 Committee	20153	0.083	0.271	0	0	0
ES Rating (MSCI)	12998	1.141	2.424	1	0	2
ES Rating (Refinitiv)	12452	38.032	22.655	32.651	19.042	55.605
$\#ES$ Violation	20153	0.132	0.382	0	0	0
$\$ES$ Violation	20153	1.452	3.965	0	0	0
IO	17177	0.762	0.245	0.842	0.700	0.931
PPE	18663	5.795	2.232	5.8171	4.362	7.275
ROA	19966	0.032	0.115	0.034	0.011	0.075
Leverage	19663	0.392	0.262	0.391	0.182	0.575
BM	16458	0.552	0.612	0.404	0.232	0.675
Size	16459	7.841	1.743	7.759	6.711	8.991

Table 2:  
**Determinants of ES Committee Establishment**

This table presents both Cox and Weibull hazard models where "failure event" is the adoption of Tier 1 (Tier 2) ES committee in a firm. The sample consists of S&P 1500 firms over our sample period with treated firms dropped from the sample once they have adopted ES committees. The dependent variable in Columns (1)-(3) is *Tier 1 Committee*. The dependent variable in the following columns is the ES committee. Independent variables include ES Rating (*ES Rating (MSCI)*), ES compliance violation (*\$ES Violation* and *#ES Violation*), institutional ownership (*IO*), corporate investment (*PPE*), book-to-market ratio (*BM*), return-to-assets ratio (*ROA*), and firm size (*Size*). Detailed variable definitions are provided in Appendix Table A1. The sample period is 2011 to 2020. We control for the year and industry-fixed effects. *z*-values reported in parentheses are based on standard errors clustered at the firm level. The superscripts \*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Model Variable	Dependent Variable								
	<i>ES Committee<sub>t+1</sub></i>			<i>Tier 1 Committee<sub>t+1</sub></i>			<i>Tier 2 Committee<sub>t+1</sub></i>		
	Cox (1)	Weibull (2)	Weibull (3)	Cox (4)	Weibull (5)	Weibull (6)	Cox (7)	Weibull (8)	Weibull (9)
ES Rating (MSCI)	0.054*** (3.397)	0.049*** (2.921)	0.051*** (3.029)	0.058** (2.066)	0.052* (1.792)	0.055* (1.867)	0.054** (2.260)	0.050** (2.016)	0.052** (2.113)
\$ES Violation	0.013** (2.044)	0.013** (2.055)		0.018* (1.720)	0.019* (1.749)		0.008 (0.848)	0.008 (0.873)	
#ES Violation			0.181*** (2.638)			0.229** (2.019)			0.140 (1.279)
IO	-0.768*** (-3.015)	-0.881*** (-3.324)	-0.879*** (-3.305)	-0.617 (-1.536)	-0.748* (-1.810)	-0.746* (-1.799)	-0.915*** (-2.638)	-1.012*** (-2.843)	-1.008*** (-2.824)
PPE	0.421*** (9.024)	0.421*** (8.940)	0.414*** (8.724)	0.595*** (7.749)	0.595*** (7.681)	0.589*** (7.523)	0.258*** (3.730)	0.260*** (3.742)	0.252*** (3.609)
BM	-0.073 (-0.613)	-0.084 (-0.698)	-0.087 (-0.722)	-0.229 (-1.576)	-0.247* (-1.685)	-0.251* (-1.695)	0.082 (0.410)	0.076 (0.379)	0.071 (0.352)
ROA	0.825 (1.576)	0.806 (1.529)	0.843 (1.593)	-0.068 (-0.089)	-0.098 (-0.127)	-0.071 (-0.091)	1.667** (2.280)	1.646** (2.267)	1.691** (2.330)
Size	-0.081 (-1.504)	-0.088 (-1.603)	-0.090* (-1.649)	-0.260*** (-2.946)	-0.268*** (-3.018)	-0.271*** (-3.045)	0.086 (1.044)	0.080 (0.961)	0.077 (0.930)
Leverage	-0.457** (-2.178)	-0.520** (-2.463)	-0.499** (-2.349)	-0.261 (-0.766)	-0.328 (-0.961)	-0.304 (-0.887)	-0.663** (-2.141)	-0.725** (-2.339)	-0.708** (-2.282)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235

**Table 3:**  
**The ES Rating Outcomes of Sustainability Committees**

This table reports the effects of ES committees on firms' ES ratings. The dependent variable is firm-level ES rating in the following year which is measured by ES ratings from MSCI KLD in Columns (1)-(3) and by ratings from Refinitiv Asset4 in Columns (4)-(6). Control variables are ES Rating (*ES Rating (MSCI)*), ES compliance violation (*#ES Violation*), institutional ownership (*IO*), corporate investment (*PPE*), book-to-market ratio (*BM*), return-to-assets ratio (*ROA*), and firm size (*Size*). We control for the year and industry-fixed effects. Detailed variable definitions are provided in Appendix Table A1. The sample period is 2011 to 2020. *t*-values reported in parentheses are based on standard errors clustered at the firm level. The superscripts \*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively. The sample period is 2011 to 2020.

Panel A: <i>ES Rating</i> <sub><i>t</i>+1</sub> ( <i>MSCI</i> )						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
ES Committee	0.273*** (4.021)			0.268*** (3.963)		
Tier 1 Committee		0.297*** (3.233)			0.293*** (3.201)	
Tier 2 Committee			0.134 (1.525)			0.126 (1.455)
ES Rating (MSCI)	0.583*** (41.273)	0.585*** (41.283)	0.588*** (41.705)	0.584*** (41.225)	0.586*** (41.212)	0.589 (41.633)
#ES Violation	-0.223*** (-4.181)	-0.220*** (-4.082)	-0.221*** (-4.123)			
\$ES Violation				-0.017*** (-3.583)	-0.017*** (-3.533)	-0.016*** (-3.286)
IO	-0.200** (-2.102)	-0.202** (-2.123)	-0.184* (-1.932)	-0.179* (-1.872)	-0.182* (-1.925)	-0.196** (-2.065)
PPE	0.021 (1.135)	0.015 (0.803)	0.010 (0.582)	0.016 (0.863)	0.017 (0.926)	0.020 (1.072)
BM	0.090 (1.613)	0.093* (1.666)	0.085 (1.502)	0.080 (1.402)	0.082 (1.442)	0.088 (1.565)
ROA	-0.371** (-2.185)	-0.377** (-2.223)	-0.381** (-2.232)	-0.365** (-2.143)	-0.374** (-2.202)	-0.362** (-2.136)
Size	0.300*** (11.482)	0.302*** (11.392)	0.297*** (11.125)	0.291*** (11.083)	0.295*** (11.203)	0.297*** (11.375)
Leverage	-0.007 (-0.093)	-0.010 (-0.133)	-0.001 (-0.025)	0.005 (0.065)	0.002 (0.033)	-0.004 (-0.066)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,433	8,433	8,433	8,433	8,433	8,433
Adj. R-squared	0.625	0.622	0.620	0.622	0.622	0.620



Table 3: Continued

Panel B: $ES\ Rating_{t+1}$ ( <i>Refinitiv</i> )						
Variable	(1)	(2)	(3)	(4)	(5)	(6)
ES Committee	0.274*** (4.264)			0.271*** (4.266)		
Tier 1 Committee		0.274*** (3.247)			0.277*** (3.264)	
Tier 2 Committee			0.154* (1.890)			0.148* (1.827)
ES Rating (Refinitiv)	0.606*** (43.140)	0.609*** (43.128)	0.611*** (43.776)	0.607*** (43.011)	0.609*** (42.932)	0.611*** (43.618)
#ES Violation	-0.204*** (-2.830)	-0.200*** (-2.587)	-0.208*** (-2.639)			
\$ES Violation				-0.016*** (-3.574)	-0.016*** (-3.503)	-0.015*** (-3.258)
IO	-0.180** (-1.973)	-0.197** (-2.162)	-0.195** (-2.149)	-0.176* (-1.930)	-0.194** (-2.122)	-0.191** (-2.111)
PPE	0.009 (0.515)	0.014 (0.783)	0.019 (1.099)	0.014 (0.823)	0.019 (1.082)	0.024 (1.381)
BM	0.096* (1.838)	0.104** (2.015)	0.100* (1.925)	0.092* (1.748)	0.100* (1.927)	0.096* (1.846)
ROA	-0.407** (-2.483)	-0.404** (-2.467)	-0.414** (-2.529)	-0.396** (-2.424)	-0.394** (-2.412)	-0.404** (-2.474)
Size	0.293*** (11.823)	0.297*** (12.092)	0.294*** (11.892)	0.289*** (11.813)	0.294*** (12.093)	0.290*** (11.894)
Leverage	-0.004 (-0.055)	-0.013 (-0.167)	-0.002 (-0.020)	-0.000 (-0.001)	-0.009 (-0.120)	0.002 (0.028)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,052	9,052	9,052	9,052	9,052	9,052
Adj. R-squared	0.623	0.622	0.622	0.643	0.641	0.642

**Table 4:**  
**The ES Risk Management Outcome of Sustainability Committees**

This table reports the effect of ES committees on firms' ES risk management by regressing the ES compliance violations on ES committee variables, along with other controls in the Poisson Pseudo-Maximum Likelihood estimation (PPML) framework. The sample period is 2011 to 2020. The dependent variables are the natural logarithm of the number of violations (*#ES Violation*), and the logarithm of the adjusted penalty (*\$ES Violation*). Control variables are ES Rating (*ES Rating (MSCI)*), ES compliance violation (*#ES Violation*), institutional ownership (*IO*), corporate investment (*PPE*), book-to-market ratio (*BM*), return-to-assets ratio (*ROA*), and firm size (*Size*). Detailed definitions of all the control variables are provided in Appendix A1. We control for the year and industry-fixed effects. *t*-values reported in parentheses are based on standard errors clustered at the firm level. \*\*\* represents 1% significance; \*\* represents 5% significance; \* represents 10% significance.

Variable	Dependent Variable					
	<i>#ES Violation<sub>t+1</sub></i>			<i>\$ES Violation<sub>t+1</sub></i>		
	(1)	(2)	(3)	(4)	(5)	(6)
ES Committee	0.058 (0.891)			0.046 (0.754)		
Tier 1 Committee		0.074 (1.249)			0.093 (1.567)	
Tier 2 Committee			-0.007 (-0.101)			-0.043 (-0.640)
ES Rating	-0.030*** (-3.420)	-0.029*** (-3.403)	-0.028*** (-3.269)	-0.033*** (-3.717)	-0.033*** (-3.771)	-0.031*** (-3.558)
#ES Violation	0.845*** (14.731)	0.845*** (14.501)	0.848*** (14.583)			
\$ES Violation				0.069*** (11.662)	0.069*** (11.622)	0.069*** (11.714)
IO	0.274 (1.603)	0.266 (1.580)	0.266 (1.569)	0.188 (1.108)	0.182 (1.081)	0.176 (1.053)
PPE	0.426*** (8.304)	0.424*** (8.320)	0.430*** (8.446)	0.415*** (8.360)	0.411*** (8.285)	0.418*** (8.403)
BM	-0.147 (-1.481)	-0.138 (-1.409)	-0.142 (-1.421)	-0.060 (-0.585)	-0.053 (-0.520)	-0.053 (-0.518)
ROA	0.426 (1.194)	0.440 (1.233)	0.429 (1.197)	0.560 (1.419)	0.572 (1.451)	0.567 (1.439)
Size	0.004 (0.087)	0.009 (0.184)	0.007 (0.134)	0.025 (0.479)	0.030 (0.572)	0.029 (0.558)
Leverage	-0.067 (-0.437)	-0.065 (-0.423)	-0.072 (-0.470)	-0.051 (-0.335)	-0.050 (-0.323)	-0.054 (-0.350)
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,837	9,837	9,837	9,837	9,837	9,837
Pseudo R-squared	0.315	0.319	0.356	0.326	0.302	0.331

**Table 5:**  
**The ES Rating Outcomes Following the Adoption of ES Committees**

This table reports the regression analysis of a firm's ES rating changes around the adoption of an ES board committee in a seven-year window from three years before to three years after the adoption in a difference-in-differences setting. Our treatment sample consists of firms that adopted an ES committee during the period from 2011-2020. The control group consists of firms that do not have ES committees but show similar characteristics to treatment firms. We identify control firms using nearest neighbour matching method. The matching characteristics we use are the same as those used in Table 2. The *Treatment* dummy is equal to one for treatment firms and zero otherwise. The *Post* dummy is equal to one in the years following the adoption of an ES committee. Detailed definitions of all the control variables are provided in Appendix A1. We include cohort-firm and cohort-time fixed effects in the regression. *t*-values reported in parentheses are based on standard errors clustered at the firm level. \*\*\* represents 1% significance; \*\* represents 5% significance; \* represents 10% significance.

Variable	Dependent Variable			
	<i>ES Rating</i> <sub><i>t</i>+1</sub>	<i>ES Rating Concern</i> <sub><i>t</i>+1</sub>	<i>ES Rating Strength</i> <sub><i>t</i>+1</sub>	# <i>ES Violation</i> <sub><i>t</i>+1</sub>
	(1)	(2)	(3)	(4)
Treatment × Post	0.808** (1.991)	-0.971*** (-4.810)	-0.294 (-0.918)	0.061 (0.425)
ES Rating	0.173*** (3.019)	0.220*** (3.698)	0.071 (1.003)	-0.016 (-0.640)
#ES Violation	0.001 (0.004)	0.124 (0.855)	-0.005 (-0.022)	-0.505*** (-5.177)
IO	-0.565 (-0.486)	-0.245 (-0.322)	-0.920 (-0.885)	-0.358 (-0.758)
PPE	1.008* (1.835)	0.070 (0.261)	1.165*** (2.654)	0.434 (1.342)
BM	0.320 (0.563)	-0.237 (-0.809)	-0.008 (-0.022)	-0.193 (-0.526)
ROA	1.665 (1.530)	-0.526 (-0.953)	0.619 (0.925)	0.628 (0.707)
Size	-0.436 (-0.830)	0.022 (0.096)	-0.450 (-1.222)	-0.379 (-1.085)
Leverage	0.369 (0.232)	-0.428 (-0.737)	0.577 (0.516)	-0.580 (-0.715)
Cohort×Firm FE	Yes	Yes	Yes	Yes
Cohort×Year FE	Yes	Yes	Yes	Yes
Observations	2,177	2,177	2,177	2,584
Adj. R-squared	0.686	0.749	0.803	0.191

**Table 6:**  
**The Effect of ES Committees Following the Paris Agreement**

The dependent variable is the ES rating provided by the MSCI KLD database. Tier 1 Committee is an indicator variable that equals one if firms have a Tier 1 ES committee. ES Committee is an indicator variable that equals one if firms have either Tier 1 or Tier 2 ES committees. Paris is a dummy variable that equals zero for the period 2011-2016 and equals one for the period 2017-2020. Control variables are defined in Appendix A1. We control for the year and industry-fixed effects.  $t$ -values reported in parentheses are based on standard errors clustered at the firm level. \*\*\* represents 1% significance; \*\* represents 5% significance; \* represents 10% significance.

	<i>Dependent Variable : ES Rating<sub>t+1</sub></i>			
	(1)	(2)	(3)	(4)
ES Committee	0.119* (1.682)		0.106 (1.501)	
Tier 1 Committee		0.123 (1.341)		0.113 (1.236)
Paris	-0.017 (-0.181)	0.008 (0.083)	-0.023 (-0.256)	0.003 (0.031)
ES Committee × Paris	0.256** (2.273)		0.258** (2.281)	
Tier 1 Committee × Paris		0.272*** (3.476)		0.279*** (3.543)
ES Rating	0.653*** (45.472)	0.655*** (44.937)	0.655*** (45.522)	0.657*** (44.874)
#ES Violation	-0.092*** (-4.357)	-0.090*** (-4.213)		
\$ES Violation			-0.016*** (-3.564)	-0.016*** (-3.478)
IO	-0.194** (-2.122)	-0.221** (-2.424)	-0.191** (-2.098)	-0.217** (-2.394)
PPE	-0.019 (-1.071)	-0.013 (-0.764)	-0.018 (-1.047)	-0.013 (-0.754)
BM	0.094 (1.632)	0.105* (1.848)	0.091 (1.564)	0.101* (1.752)
ROA	-0.370** (-2.248)	-0.371** (-2.244)	-0.357** (-2.162)	-0.357** (-2.164)
Size	0.241*** (9.707)	0.249*** (10.164)	0.237*** (9.622)	0.244*** (10.048)
Leverage	0.018 (0.242)	0.009 (0.114)	0.023 (0.318)	0.014 (0.192)
Year FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Observations	7,335	7,335	7,335	7,335
Adj. R-squared	0.678	0.679	0.678	0.679

**Table 7:**  
**Cross-Sectional Regressions of Stock Returns on ES Committees**

The sample period is 2011-2020. The dependent variable is the firms' stock return in the subsequent month. Tier 1 Committee is an indicator variable that equals one if a firm has a Tier 1 ES committee. Tier 2 Committee is an indicator that equals one if a firm has a Tier 2 ES committee. Definitions of the control variables are provided in Appendix A1. We report the results of the cross-sectional regression with standard errors clustered at the firm and year-month level.  $t$ -values are reported in parentheses and \*\*\* represents 1% significance; \*\* represents 5% significance; \* represents 10% significance, respectively.

	Dependent Variable: $Return_{k+1}$					
	(1)	(2)	(3)	(4)	(5)	(6)
ES Committee	-0.001 (-0.930)			-0.001 (-1.098)		
Tier 1 Committee		-0.004*** (-4.132)			-0.002** (-2.130)	
Tier 2 Committee			0.003 (0.982)			0.000 (0.481)
Size	-0.001*** (-3.658)	-0.001*** (-3.240)	-0.001*** (-4.942)	-0.001*** (-2.847)	-0.001*** (-3.045)	-0.001*** (-3.312)
BM	0.001 (1.268)	0.001* (1.671)	0.001 (1.031)	0.003** (2.022)	0.003** (2.039)	0.003** (1.992)
ROE	-0.000* (-1.838)	-0.000* (-1.958)	-0.000* (-1.851)	-0.000*** (-2.817)	-0.000*** (-2.839)	-0.000*** (-2.808)
Leverage	0.004*** (3.589)	0.005*** (3.957)	0.004*** (3.456)	0.005*** (4.571)	0.005*** (4.626)	0.005*** (4.512)
Year-Month FEs	No	No	No	Yes	Yes	Yes
Industry FEs	No	No	No	Yes	Yes	Yes
Observations	145,581	145,581	144,945	144,945	139,329	139,329
Adj. R-Squared	0.030	0.030	0.040	0.030	0.040	0.040

**Table 8:**  
**Fama-MacBeth Regressions**

This table reports the cross-sectional regression results. The dependent variable is the firm's stock return in the next month. ES Committee is an indicator variable that equals one if a firm either has a Tier 1 ES committee or Tier 2 ES committee. Tier 1 Committee (Tier 2 Committee) indicator equals one if a firm has a Tier 1 ES committee (Tier 2 committee). The control variable definition is provided in Appendix A1. Standard errors are estimated using the Newey-West correction.  $t$ -values are reported in parentheses and significance levels are indicated by \*, \*\* and \*\*\*, respectively.

	Dependent Variable: $Return_{k+1}$		
	(1)	(2)	(3)
ES Committee	-0.002 (-1.090)		
Tier 1 Committee		-0.004*** (-3.081)	
Tier 2 Committee			0.002 (1.054)
Size	-0.001 (-0.961)	-0.001 (-0.952)	-0.001 (-1.405)
BM	-0.003 (-1.178)	-0.003 (-1.123)	-0.004 (-1.254)
ROE	-0.000 (-0.792)	-0.000 (-0.883)	-0.000 (-0.822)
Leverage	0.003 (0.892)	0.003 (1.018)	0.002 (0.794)
Observations	139,329	139,329	139,329
Adj. R-Squared	0.030	0.040	0.040

**Table 9:**  
**Asset Pricing Factor Tests**

This table shows asset pricing factor tests for three portfolios sorted on ES committees. We rebalance portfolios at the end of each June. The results reflect monthly data. The sample runs from July 2011 to June 2021. To adjust for risk exposure, we perform time-series regressions of ES committee-sorted portfolios' excess returns on the Fama and French (2015) five factors (MKT, SMB, HML, the profitability factor-RMW, and the investment factor-CMA). The alpha in the last 3 rows represents the abnormal returns achieved through a zero-investment strategy of buying a Tier 1 committee portfolio and simultaneously short-selling another ES committee portfolio. The sample spans from July 2011 through June 2021. Data on the Fama-French five factors comes from Kenneth French's website.  $t$ -values are reported in parentheses and significance levels are indicated by \*, \*\* and \*\*\*, respectively.

	$\alpha$	RMRF	SMB	HML	CMA	RMW
Tier 1 Committee	-0.002**	0.914***	-0.052	0.343***	0.158***	0.051
	-1.992	40.751	-1.263	9.535	2.641	1.003
Tier 2 Committee	0.001	0.894***	-0.157***	0.010	0.139**	0.119**
	0.143	43.410	-4.160	0.310	2.530	2.550
No ES Committee	0.000	1.042***	-0.018	-0.074***	-0.068**	0.087***
	0.913	90.690	-0.850	-4.032	-2.233	3.323
Tier 1 - No Committee	-0.002*	-0.128***	-0.034	0.418***	0.227***	-0.035
	-1.832	-4.253	-0.617	8.616	2.813	-0.527

Table A1: **Variable Definition**

This table provides detailed definitions of variables used in this study.

Variable acronyms	Definition	Data source
ES Committee	An indicator variable for firms with well-defined firm environmental and social responsibilities in the Board of Committees section of DEF 14A proxy filings	SEC EDGAR
Tier 1 Committee	An indicator variables for firms that set up a specialized board committee on environmental and social issues, identified based on committee names	SEC EDGAR
Tier 2 Committee	An indicator variable for firms that assign firm environmental and social responsibilities to existing board committees, identified based on board committee descriptions	SEC EDGAR
ESRating (MSCI)	Firm-level environmental and social ratings provided by MSCI KLD database	MSCI KLD
ESRating (Refinitiv)	Firm-level environmental and social ratings provided by Refinitiv Asset4 database	Refinitiv Asset4
#ESViolation	Natural logarithm of the number of environmental and social compliance violations, regardless of fine amount	ViolationTracker
\$ESViolation	Natural logarithm of the dollar amount of penalties arising from a firm's environmental and social compliance violations	ViolationTracker
IO	Fraction of a firm's equity held by institutional investors in the previous year, scaled by shares outstanding	Thomson Reuters 13F
PPE	Natural logarithm of a firm's property, plant and equipment (PPE) in the previous year (in USD millions)	Compustat
ROA	Income before extraordinary items scaled by total assets	Compustat
Leverage	Book value of Leverage defined as the book value of debt divided by the book value of assets	Compustat
BM	Book value of equity divided by market value of equity in the previous year	Compustat
Size	Natural logarithm of market capitalization (in USD millions)	Compustat



Table A2: Coverage of ES Committees Across Data Sources

This table reports the ES committee coverage obtained from different data sources during our sample period from 2011 to 2020.

Year	No. Firms	CSR Committee = 1(BoardEx)	ES Committee = 1 (SEC EDGAR)	Both = 1
2011	2,199	161	212	129
2012	2,179	154	219	123
2013	2,163	157	241	130
2014	2,145	171	256	135
2015	2,072	168	253	133
2016	1,991	182	264	145
2017	1,929	188	276	152
2018	1,872	194	304	155
2019	1,804	216	412	168
2020	1,761	263	540	197

Table A3: **ES Terminology list**

This table provides the ES-related keywords used to identify if firms have a board-level sustainability committee.

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Terminology list of ES keywords for manual collection

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ESG

CSR (Corporate Social Responsibility)

Environment (al)

Safety

Health

Social (responsibility)

Public responsibility

Public issue(s)

Corporate responsibility

Corporate citizenship

Sustainability (or sustainable development)

Community development

Public affair(s)

Community relation(s)

Community Affair(s)

Community Relation

Corporate Governance and Responsibility

Civic Responsibility

Corporate Reputation

Community Reinvestment

Social issue(s)

Image of (the) company

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