Employment litigations and ESG reporting transparency
An empirical analysis of S&P 500 firms

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ABSTRACT

This research aims to investigate the link between employment litigations and ESG disclosure scores of S&P 500 firms during the 2013-2021 period. Panel data regressions show that litigations related to employment disputes have a negative relationship with ESG disclosure scores. This main finding is robust to various sensitivity analyses. However, it can differ fundamentally according to the nature of firms' industries, light or heavy. In addition, interesting findings are found on the relation of ESG disclosure scores with financial performance, governance quality, CSR engagement, and firm reputation. These results imply that the relation between employers and employees is of great importance in the ESG and sustainable finance landscape. More broadly, the social side in the ESG field should be better considered by firms, investors, and policymakers, as it can play an important role in the ESG reporting transparency of firms.

JEL classification: G3
Keywords: Employment litigations; ESG disclosure scores; Panel data; S&P 500 firms.

Highlights

- Employment litigations have a negative relationship with ESG reporting transparency.
- There is a difference between firms in light and heavy industries.
- The presence of women on board helps improve the ESG disclosure transparency.
- CSR engagement improves the ESG disclosure transparency.
- The dual role of Chairs and CEOs improves the ESG reporting transparency.

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I. Introduction

This study about the relationship between employment litigations and ESG disclosure scores is motivated by the social aspect of employment litigations. Indeed, in the ESG field, the social aspect has been less considered than the governance and environmental aspects (e.g., Gillan et al., 2021) though it is very important as it is directly related to human beings. From this statement, employment litigations are a clear measure of the social performance of a company as it shows the degree of conflictual relationship between employers and employees. In the meanwhile, ESG reporting has been in the center of sustainable finance as it shows the transparency of firms and investors in the way they include sustainability in their investment strategies (e.g., Alshater et al., 2021). At a global level, such investment strategies help direct capital flows to companies and projects that align with sustainable development (e.g., Ziolo et al., 2021).

In this context, we decided to investigate the relationship between employment litigations and ESG disclosure scores (including its three individual pillars) of American firms in the S&P 500 index. We decided to consider this data sample because the US have been known as the country with the highest number of litigations (Doyle and Kleiner, 2002). In addition, employment lawsuits have been growing strongly among civil cases in the US. According to Unsal et al. (2017), almost 25% of all litigations in the federal court system are related to employment allegations. According to the Metropolitan Corporate Counsel (2008),[2] the annual direct litigation cost of Fortune 500 companies was $210 billion in 2006. In the meanwhile, ESG disclosure in the US has increased strongly during the last years, as indicated by the recent SEC rule (see a study by Goldman Sachs in 2022).[3] Therefore, understanding how employment litigations can affect the transparency of ESG disclosure can be insightful for both investors, policymakers, and firms. At the academic level, our study contributes to both the literature on ESG disclosure and that on corporate litigations. At the ESG level, most of previous studies investigated the relation between ESG and financial performance (e.g., Huang, 2021). Some recent research studied the link between ESG disclosure and firms' resilience during the COVID-19 pandemic (e.g., Hoang et al., 2022). Some authors analyzed the performance of ESG investing, ESG ratings, or ESG regulations (e.g., Cornell, 2021; Avramov et al., 2022; and Singhania et al., 2021). To the best of our knowledge, only Hackett et al. (2020) attempted to

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[2] The link to the article is: https://ccbjournal.com/articles/elawforum-litigation-portfolio-insurance
[3] The link to this article is below:
https://www.goldmansachs.com/insights/pages/gs-sustain-esg-regulations-us-sec-proposes-major-new-climate-disclosure.html

analyze the link between ESG risks and the rise of litigations in general, not those specifically related to employment. Therefore, our study can help widen the academic knowledge on the relationship between employment litigations and ESG disclosure scores for American firms in the S&P 500 index.

Regarding the literature on corporate litigations, most of previous studies investigated litigations related to patents, securities, and shareholders (e.g., Chen et al., 2016; Wilson, 2020; and Arena et al., 2021). Most of these studies attempted to investigate the link between litigations and firm performance in terms of reputation (Zhu, 2020), cost of capital (Qin et al., 2021), of risk (Liu et al., 2020), information bundling (Bliss et al., 2018), relation with investors (Mazur et al., 2018), cost of debt (Ni and Yin, 2018), innovation (Hassan et al., 2021), among others. However, to the best of our knowledge, no study has investigated the link between litigations and ESG disclosure scores though litigations are closely related to ESG as they cover the relationship between a firm and its stakeholders. In this study, we are interested in employment litigations as they are related to an important stakeholder of firms, who is its employees (Lins et al., 2017). To this regard, few research has analyzed employment litigations (e.g., Unsal and Brodmann, 2020; and Zuo, 2022). However, none of them has made the link between employment litigations and ESG reporting transparency though this is an important social aspect of firms. Therefore, our study contributes to this literature by considering the link between employment litigations and ESG disclosure scores.

With this objective, and with the Bloomberg terminal, we collected data on the annual number of employment litigations of S&P 500 firms from 2013 to 2021. In addition, we consider 18 firm factors in six different categories of variables which are ESG disclosure scores, financial performance, governance indicators, CSR engagement, firm reputation, and control variables. Results with panel data regressions show that employment litigations have a significant and negative relationship with ESG disclosure scores. Various robustness check analyses show that this result remains true only for firms in light industries. In addition, firm characteristics can have a moderating effect on the relationship between employment litigations and ESG disclosure transparency. These firm characteristics are corporate governance, CSR engagement, and financial leverage. This research thus shows the importance to consider the relationship between employers and employees in the ESG and sustainable finance landscape. This result leads us to recommend firms, investors, and policymakers to pay attention on the social side of ESG metrics and particularly on the relation between employers and employees.

The remainder of the paper is organized as follows. Section II presents the literature review and the research hypotheses to be tested. Section III focuses on the description of data and

methodology. Section IV presents the main results while section V checks their robustness. Section VI concludes the paper.

II. Literature review and research hypotheses

The objective of this section is to show how this present research can contribute to academic knowledge on both the ESG reporting topic and the employment litigation topic. Before that, we need to present first the theoretical framework which explains why there can be a link between ESG reporting transparency and employment litigations. For these reasons, subsection II.1 focuses on the theoretical framework while subsection II.2 presents previous empirical research related to the topic.

II.1. The theoretical framework on the relationship between ESG reporting and employment litigations

To explain the theoretical framework behind the relationship between employment litigations and corporate ESG reporting transparency, we will base on the main theories applied in corporate finance and CSR research. These are stakeholder theory, signal theory, legitimacy theory, agency theory, and information asymmetry theory. Before considering the involvement of these theories, we need to define what we mean by ESG reporting transparency. ESG reporting is the fact that a company publicly reports its Environmental, Social, and Governance (ESG) information. Environmental information includes greenhouse gas emissions, energy consumption, and waste treatment, etc. Social information includes employees' treatment (training, salary equality, unions, etc.), CSR practices, health & safety, and personal data protection, etc. Governance information includes the board of directors, bonus payment of directors, and number of board meetings, etc. Therefore, ESG reporting means the communication of these metrics publicly. To measure the transparency of corporate ESG reporting, we use the ESG disclosure score provided by Bloomberg which measures the quantity of ESG information reported by a firm compared to the metrics available in the GRI standards (Global Reporting Initiatives). This ESG disclosure score varies from 0.1 to 100, with 100 the highest score. The higher is the ESG disclosure score, the more firms are transparent in ESG reporting. It is important to note that this is not an indicator of the ESG performance of a firm but only the degree to which it is transparent in ESG reporting. In addition to the overall ESG disclosure score, we also consider the three individual pillars which are environmental disclosure score (E), social disclosure score (S), and governance disclosure score (G).

On the other hand, employment litigations mean the number of litigations related employee disputes that each firm in the data sample has each year from 2013 to 2021. A litigation means when the two parties of the dispute formally submitted to a court about any subject in which one party is plaintiff and the other party is defendant. Therefore, in an employment litigation, one party is the employer, and the other party is the employee. It means that the data on the number of employment litigations that we collect from the Bloomberg terminal shows the number of employee dispute cases submitted to a court per year per firm.

There can be a link between the number of employment litigations and the transparency of ESG reporting because according to the **stakeholder** theory, firms need to respond to expectations and concerns of its key stakeholders. The existence of employment litigations means that this requirement is not respected to some extent. In such case, a firm would prefer reporting less ESG information, especially social information, which is directly related to employment litigations, to avoid revealing conflictual situations within the company. In addition, according to the **signal** theory, a firm tends to attempt to transmit positive signals to its various stakeholders. Since employment litigations are a negative signal about the capability of a firm to manage its employees, firms tend to reveal less ESG information, especially social information, to reduce the risk of revealing bad signals to firms' stakeholders. Therefore, employment litigations can increase the **agency and information asymmetry** problems between firms' management and its various stakeholders, such as employees, investors, regulatory bodies, customers, providers, etc. Therefore, from the theoretical point of view, we make to following research hypothesis.

Hypothesis 1: There is a negative relationship between the number of employment litigations and the transparency of ESG reporting, especially the social reporting.

In addition to this main research hypothesis, we also seek to understand the underlying mechanism behind the relationship between the number of employment litigations and the ESG reporting transparency. We first hypothesize that the governance body of a firm plays an important role in moderating the relationship between employment litigations and ESG reporting transparency. This is because corporate governance has the possibility to make important decisions regarding both the relationship with employees and the transparency degree of ESG reporting. That is why we hypothesize that governance information, such as the percentage of women on board, the duality role between the chair of the board and the CEO, and the average age of the board members, can play a moderating role in the relationship between employment litigations and ESG reporting transparency. In addition, CSR engagement

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can also have a moderating effect on the relationship between employment litigations and ESG reporting transparency. Indeed, CSR engagement shows the commitment of a firm towards a better consideration of social aspects in firms' management. Therefore, the level of CSR engagement can influence the studied relationship. Finally, the financial leverage of firms can also have a moderating effect because creditors tend to require financial and ESG information from firms to evaluate its solvability. Therefore, a higher value of financial leverage can encourage firms to increase the transparency of ESG reporting and to reduce the litigation risk with employees. From these arguments, the second research hypotheses of our study are as follows.

Hypothesis 2a: Corporate governance has a moderating effect on the relationship between employment litigations and ESG reporting transparency.

Hypothesis 2b: CSR engagement has a moderating effect on the relationship between employment litigations and ESG reporting transparency.

Hypothesis 2c: Financial leverage has a moderating effect on the relationship between employment litigations and ESG reporting transparency.

II.2. The empirical framework on the relationship between employment litigations and ESG reporting

To define the empirical framework about the relationship between employment litigations and ESG reporting transparency, we will base on previous empirical studies related to employment litigations and ESG reporting.

To the best of our knowledge, Hackett et al. (2020) is the only study that investigates the direct link between ESG risks and litigations. According to the authors, ESG related litigations have increased strongly these later years. According to Doyle and Kleiner (2002), the US has 30 times more lawsuits per person than Japan. Businesses are particularly vulnerable to frivolous lawsuits, being heavily burdened by legislation imposed to protect the individual. Shen (2015) investigated labor litigations in China and found that labor litigation is also beneficial to employers in market economies where there are independent trade unions, as legal cases likely lead to less collective bargaining and strike actions. Posthuma et al. (2016) examined employment lawsuits across case type and alternative dispute resolution methods and found that employers were more likely to win in high social context cases (civil rights) than in other cases (employment retirement income security act of 1974, ERISA). Unsal et al. (2017) analyzed employee litigation and other work-related complaints to examine if the judicial process favors firms that engage in lobbying. The authors found that employee litigation

increases the number of labor-related bills. In addition, an increase in employee lawsuits may drive firms into lobbying to change policy proposals.

Adhikari et al. (2019) found that firms where women have more power in the top management team, measured by female executives' plurality and pay slice, face fewer operations-related lawsuits. Unsal and Rayfield (2019) investigated the effect of employee lawsuits on **CEO turnover** and showed that there is an increased turnover of CEOs following labor lawsuits, regardless of the case outcome or motivation. Unsal (2019) investigated the impact of analyst coverage on labor relations and found that an increase in analyst coverage lowers the work-related litigations. Unsal (2019b) investigated the link between employee lawsuit and risk in US public firms and found that a greater number of employee litigation increases firm risk. Unsal and Brodmann (2020) investigated the impact of employee relations on the reputation of the board of directors and CEO and found that when firms engage in employee mistreatment, both directors and CEOs are punished by deterioration in their reputation, as proxied by a reduced number of outside seats. Unsal and Hassan (2020) investigated the link between employee lawsuits and capital structure and showed that employee lawsuits increase firms' leverage ratios, and firms with frequent employee allegations maintain high leverage ratios. Unsal and Rayfield (2020) investigated the relationship between takeover susceptibility and labor litigations and found a positive relationship between employee litigation and takeover protection. Unsal and Brodman (2020) investigated the impact of employee relations on the reputation of the board of directors and CEO and found that when firms engage in employee mistreatment, both directors and CEOs are punished by deterioration in their reputation, as proxied by a reduced number of outside seats.

Liu (2021) investigated the relationship between CEO gender and labor lawsuits and found that firms led by female CEOs experience fewer labor lawsuits. Malm et al. (2021) found that older CEOs face fewer lawsuits, and this negative relationship tends to be stronger in labor-intensive firms. Rayfield and Unsal (2021) investigated the link between institutional monitoring and litigation risk related to employee disputes and found that institutional investors play a significant role in reducing employment litigation. Unsal (2021) investigated the link between labor lawsuits and debt maturity and showed that employee litigations have a significant negative effect on the use of short-term debt and a significant positive effect on long-term debt. Zuo et al. (2022) investigated the relationship between employee lawsuits and stock price crash risk and found that that firms with higher employee lawsuit ratios tend to have a higher stock price crash risk.

II.3. Contributions to the academic literature and practical knowledge

From the above theoretical and empirical framework about the relationship between employment litigations and ESG reporting transparency, our academic and practical contributions are as follows. First, previous studies on corporate litigations with different stakeholders have focused on its impacts on financial performance of firms while ESG reporting has been ignored. Given the importance of ESG disclosure and ESG performance nowadays, it is important for both firms, investors, data providers, and policymakers to understand the relationship between employment litigations and ESG reporting transparency. For firms, this knowledge helps them better integrate the importance the management of employee litigations in the ESG policy and reporting. For investors, this knowledge can help them better evaluate the link between firms' employee management and the ESG information necessary for their asset allocation. For data providers, especially ESG data providers, the finding of this research can help them better evaluate the risk of less transparent public ESG reporting by firms caused by corporate litigations with employees. For policymakers, employment litigations are part of CSR policies and understanding its relationship with ESG reporting transparency can help them better link the two important topics on CSR and ESG. Second, this research also underlines the importance of the social aspect in the ESG field. This is important as the social aspect has been less considered than the environmental and governance aspects while it is an important part in businesses and in the society.

To an academic point of view, linking employment litigations and ESG reporting transparency is important considering the increasing number of research works on the ESG topic in finance. Most of previous ESG studies have focused on the link between ESG performance and financial performance (Hoang et al., 2020). Some of them have also considered the role of ESG engagement in firm resilience during the COVID-19 pandemic (e.g., Hoang et al., 2022), while some others investigated the link between firm ESG reporting and country achievement in the Sustainable Development Goals (SDGs) (e.g., Hoang et al., 2023). In such context, the findings of this current research can provide new knowledge to the academic community by investigating the link between ESG reporting transparency and employment litigations. In addition, previous studies on corporate litigations, and especially on employment litigations, have focused on its link with firm financial performance rather than firm engagement in ESG reporting transparency. Therefore, the finding of this study would help researchers better understand the link between employment litigations and ESG reporting transparency.

III. Data and methodology

III.1. Presentation of the sample

We decided to study American firms inside the S&P 500 index as these are firms with the most available data on the number of litigations. We consider the components of the S&P 500 index in May 2022 and the annual historical data of these companies from 2013 to 2021, the period for which we can collect complete data on the number of litigations from the Bloomberg terminal. For each company, Bloomberg reports 11 categories of litigations, including the common category "Others" for all the companies. In total, there are 74 different litigation categories for the 504 companies in the S&P 500 index. For each category of litigations, we collect its number per year from 2013 to 2021. Therefore, our litigation data sample indicates the number of litigations in different categories that a firm encounters each year. It is worth noting that we needed to collect this data manually for each firm and each year from 2013 to 2021. This task requires us almost one month of data collection and treatment.

The distribution of firms and litigations per sector is presented in Table 1. From Table 1, we note that the sector with the highest number of firms is the Information Technology (IT) sector, with 76 firms, such as Apple, Microsoft, Amazon, Cisco, etc. This is followed by the Industrials sector with 72 firms, such as American Airlines Group, Alaska Air Group, Avis Budget Group, etc. The third sector with the most companies in our sample is the Financials sector, with 66 firms such as AF Legal Group, AIG, JP Morgan, CBOE, etc. These three most representative sectors in the S&P 500 are followed by the Health Care sector (65 firms), Consumer Discretionary (60 firms), Consumer Staples (32 firms), Real Estate (30 firms), Utilities (29 firms), Materials (27 firms), Communication Services (26 firms), and Energy (21 firms).

Table 1 also shows the five categories of litigations that are the most frequent in each sector. For the IT sector, the categories of litigations the most contracted are related to Patent, General Contracts, Employment, and Antitrust, as well as All other types and other statutes. On the other hand, the categories of litigations the most frequently contracted for firms in the Industrials sector are related to product liability (inducing personal injury), consumer credit, insurance, pharmaceutical product liability, and asbestos. In the Health Care sector, the category of litigations the most frequent is pharmaceutical product liability (inducing personal injury), which represents almost 50% of the total number of litigations. This is followed by product liability (inducing personal injury), RICO (Racketeer Influenced and Corrupt Organizations), personal injury, ERISA (Employee Retirement Income Security Act), followed by all other types. In the Financials sector, the categories of litigations the most frequently contracted are insurance, consumer credit, general contract, foreclosure, and all other types.

Table 1: The distribution of firms and litigations per sector

Sector	Number of firms	The five most frequent litigation categories in each sector	Percentage
Communication services	26	All other types	19.37%
		Patent	16.78%
		Other Statutes	12.18%
		Copyright	8.42%
		Employment	**7.09%**
		General Contract	6.50%
Consumer discretionary	60	**Personal Injury**	24.62%
		All other types	12.25%
		Marine Pers. Injury	8.18%
		Employment	**7.71%**
		General Contract	6.05%
		Pr. Liab. - Contracts	5.44%
Consumer staples	32	**Personal Injury**	28.83%
		Health Care/Pharma Prod. Liab.	22.65%
		Prod. Liab. - PI	12.58%
		RICO	9.43%
		All other types	8.25%
		Employment	**5.95%**
Energy	21	Personal Injury	17.43%
		Other Statutes	13.97%
		All other types	13.45%
		Environmental	11.83%
		Prod. Liab. - PI	8.83%
		General Contract	4.98%
Financials	66	Insurance	29.36%
		All other types	12.91%
		Consumer Credit	7.98%
		General Contract	7.42%
		Foreclosure	6.60%
		ERISA	6.59%
Health care	65	Health Care/Pharma Prod. Liab.	48.92%
		Prod. Liab. - PI	38.29%
		RICO	4.56%
		Personal Injury	1.78%
		All other types	1.29%
		ERISA	0.99%
Industrials	72	Prod. Liab. - PI	46.03%
		Consumer Credit	11.99%
		Insurance	6.25%
		Health Care/Pharma Prod. Liab.	6.21%
		All other types	4.95%
		Asbestos	4.81%
Information technology	76	Patent	28.92%
		All other types	12.79%
		General Contract	11.15%
		Other Statutes	7.34%
		Employment	**6.20%**
		Antitrust	3.98%
Materials	27	Personal Injury	41.18%
		Prod. Liab. - PI	18.08%

		Asbestos	7.38%
		All other types	5.89%
		Foreclosure	5.59%
		General Contract	2.85%
Real estate	30	Personal Injury	16.38%
		All other types	13.93%
		ADA - Other	13.81%
		General Contract	10.09%
		Employment	**8.19%**
		Other Statutes	3.96%
Utilities	29	All other types	22.88%
		Land Cond.	13.68%
		Employment	**9.38%**
		General Contract	8.13%
		Personal Injury	6.49%
		Other Statutes	4.95%

Note: This table presents the distribution of firms and litigations in our sample. The first column indicates the sectors. The second column indicates the number of firms in the corresponding section. The third column indicates the five categories of litigations the most frequent for firms in each sector. The fourth and last column indicates the proportion of each category of litigations over all the categories of litigations available in the sector. Prod. denotes product. Liab. denotes liability. PI denotes personal injury. RICO denotes Racketeer Influenced and Corrupt Organizations. ERISA denotes Employee Retirement Income Security Act. Cond. refers to Condemnation. ADA means Americans with Disabilities Act.

Therefore, Table 1 indicates that the categories of litigations are very different in function of the sector and thus the nature of activities of the firm. That is why in our empirical analysis, we will conduct a robustness check by considering different subsamples corresponding to firms in each sector. It is also important to note that the five biggest categories of litigations represent almost 60% of litigations contracted by firms in each sector. Therefore, it quite representative of the litigation issue of firms in each sector.

In addition to the number of litigations of each firm, our data sample is also composed of ESG and financial variables. We included the ESG disclosure scores with the objective to understand how the number and category of litigations can influence the firms' transparency in ESG reporting. We consider not only the global ESG disclosure score but also the three individual disclosure scores, meaning environmental (E), social (S), and governance (G) disclosure scores. These scores are proprietary data calculated by Bloomberg team with annual values varying from 0 to 100, with 100 the highest value. A higher score means that a company reports more ESG information, compared to the number of metrics considered by Bloomberg according the GRI standard (Global Reporting Initiative). These variables have been widely used in the literature to measure firms' engagement in ESG reporting (e.g., Hoang et al., 2022) The second group of variables that we consider is related to the financial performance of firms. Our objective is indeed to understand how the number and categories of litigations can influence the financial performance of firms. This latter is measured by two common ratios which are

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ROA and ROE. ROA, return on assets, measures the ratio between net income and total assets to show how profitable the assets of companies are used to create net income. The ROA is thus of primary interest to the company. ROE, return on equity, is the ratio between net income and equity to show how profitable is the equity provided by shareholders. This ratio is therefore of high interest to shareholders.

Table 2: List of considered variables

Name of the variable	Definition
Group 1: ESG variables	
ESG disclosure score	The score of ESG information disclosed (100 is the highest value)
Environmental disclosure score	The score of environmental information disclosed (100 is the highest value)
Social disclosure score	The score of social information disclosed (100 is the highest value)
Governance disclosure score	The score of governance information disclosed (100 is the highest value)
Group 2: Financial performance	
Return on assets	Net income / Total assets
Return on equity	Net income / Total equity
Group 3: Governance variables	
Percentage of women on board	The percentage of members of the board who are female.
Duality	1 if one person is both director and chair of the board, 0 if not.
Age	Average age of board members
Group 4: CSR variables	
Employee CSR training	1 if Yes, 0 if No.
CSR Sustainability Committee	1 if Yes, 0 if No.
Health and Safety Committee	1 if Yes, 0 if No.
CSR_Mean	Average value of the three CSR variables
Group 5: Media and reputation variables	
Analyst recommendations	To buy or sell stocks of companies, score from 1 to 5, with 5 is to buy and 1 is to sell.
Group 6: Control variables	
TL_TA	Total liabilities / Total assets (capital structure)
Price to book ratio	Market value / Book value
Ln(Cap)	Log value of market capitalization

Note: This table presents the ESG and other firm variables used in our empirical analysis.

The third group of variables is related to governance information of firms with the objective to understand the interaction between the governance body and litigation issues of firms. Indeed, academic studies show that firm governance plays an important role in firms' accountability and transparency (e.g., Hoang et al., 2021). Therefore, it is important to investigate the link between firm governance and the number/category of litigations. The governance variables that we consider in our study are percentage of women on board, duality, and average age of board members. Indeed, previous studies show that the gender representation in the management body of firms plays an important role in different firm aspects

(e.g., Adhikari et al., 2019; Sarkar and Selarka, 2020). In addition, the duality variable shows whether the decision power within the governance body of firms is concentrated or not. Indeed, duality is a dummy variable which is equal to 1 if one person is both the chair of the board and the CEO, and 0 if not. This variable has also been considered in numerous academic studies on firm governance, such as Muller-Kahle and Schiehll (2013). The third governance variable that we consider is the average age of board members. This variable is included because it has been proved that the age of the members in the management of a company can influence the decision-making process of firms (e.g., McGuiness, 2021). As the litigation issue can be a direct consequence of decisions from the firm management team, it is thus interesting to understand the link between the average age of board members and the number/category of litigations.

The fourth group of variables is related to the corporate social responsibility (CSR) of firms. Why should we consider the CSR parameter of firms in the number and category of litigations? Indeed, CSR information can indicate part of the ethics and value of firms. As the litigation issue is a matter of trust and compliance, CSR engagement is directly concerned. In addition, previous academic studies show that there is a link between CSR and the compliance level of firms (e.g., Jiang et al., 2022). The CSR variables that we consider are CSR training, CSR committee, and Health and Safety committee. These are dummy variables. When they are equal to 1, it means that the activity (training) and committees exist in the company, and 0 otherwise. Even if this cannot capture the whole dimension of CSR, it allows us to have a first idea of firms' engagement in CSR and thus how this engagement can influence the number/category of litigations.

The fifth group of variables is related to the media and reputation of firms. We decided to include these variables because litigations, a proxy for controverses of firms, can have an important impact on the reputation of firms and on the way the media can publish news on firms. We can cite some examples of litigations such as Enron and Renault Nissan (e.g., Nguyen, 2014; Emerson, 2001). When litigations become an interest of the media, the consequence on the reputation and financial performance of companies can be very serious. We can cite the loss caused by the Renault scandal which is 26.1 billion yen (or £188.3 million) in the third quarter of 2019, at the height of the scandal (see Richardson, 2020). In addition, previous academic studies show that firms' reputation plays an important role in the investment decision of investors (e.g., Kamiyra et al., 2021). In this context, we think that it is important to consider media and reputation variables in our study. There are two variables in this group which are news heat and analyst recommendations. The news heat variable measures the number of news related to a firm published in the media. Its value is from 1 to 4, with 4 meaning

that the publication activity is in the top 98th percentile of the publication volume over the last 45 days. A score of 3, 2, and 1, represent the top 96th, 90th, and 80th percentiles, respectively. This variable can show us the intensity of media publication on the firm. This can be a proxy for the media reputation of the company. We follow Unsal (2019) to consider the coverage by analysts and use the analyst recommendation variable as it shows the opinion of analysts using the Bloomberg terminal on a company through their recommendation to buy or sell its stocks. The value of this variable spreads from 1 to 5, with 5 is the recommendation to buy and 1 is the recommendation to sell. Thus, the closer the score is to 5, the stronger is the proportion of analysts who recommend investors to buy, and inversely for the recommendation to sell. This variable can help us better understand the opinion of investors on a company and know whether it can have a link with the number/category of litigations.

Finally, the control variables that we consider are the capital structure of firms (the ratio between debt and total assets), the price to book ratio PBR (market value of stocks over its book value), the market capitalization (a proxy for the size of firms), and the abnormal expenses. The last variable is included because it shows exceptional expenses of firms, including expenses on litigations. All the variables are collected from the Bloomberg terminal with annual values from 2013 to 2021. The fiscal year is considered, and all monetary values are in millions of USD.

To better understand our data sample, Section IV presents the main descriptive statistics in the whole sample, as well as in each of the 11 sectors. It also shows the correlation analysis among the variables.

III.2. Descriptive statistics of ESG and financial variables

To provide us with the maximum of information, we present below the main descriptive statistics of the whole sample. Descriptive statistics for firms in each sector are in the Appendix.

From Table 3 we can draw the following descriptions. The average firm in the sample has an ESG disclosure score of 46.94. It means that the average firm provides almost 47% of the ESG metrics listed by Bloomberg, according to the GRI (Global Reporting Initiative). In addition, the average firm in the sample discloses about 27% of environmental metrics, 25% of social metrics, and 87% of governance metrics. These statistics show that governance metrics are the most reported by SP500 firms, as it has been shown in previous studies (e.g., Adams and Abhayawansa, 2022). Environmental and social metrics are far behind, with a small advance of environmental metrics. This result suggests that more efforts should be made by S&P 500 firms in ESG reporting, and mostly in environmental and social reporting. As for the financial performance, the average firm in our sample has a ROA of almost 7% and a ROE of

almost 23%. This result means that net income represents 7% of total assets and 23% of total equity. It means that the profitability of equity is much higher than that of total assets. This result may suggest that shareholders of sampled firms may greatly benefit from this high ROE through the dividend policy. Regarding governance variables, the average firm has almost 22% of women on board. In addition, half of firms have a duality, meaning the same person is both chairman of the board and CEO of the company. We also note that the average age of the members of the board of S&P 500 firms is 62 years old. Regarding CSR variables, only 12% of firms have CSR training for employees; 41% of firms have a CSR committee that reports directly to the board; and 16% of firms have a Health and Safety committee that reports to the board. Finally, regarding control variables, the average firm has a high value of debt (66% of total assets), a market capitalization of 48,615,090 million of USD, and a value of abnormal expenses of 300,470 million of USD.

Table 3: Descriptive statistics

Variables	Mean	STD	Min	25%	Median	75%	Max
ESG_Dis	46.94	12.40	5.09	35.59	46.43	56.52	82.01
E_Dis	27.83	21.59	0.00	5.26	27.39	44.37	92.30
S_Dis	25.35	13.83	0.00	13.36	23.31	35.13	71.86
G_Dis	87.50	6.14	0.00	84.98	87.48	91.24	100.00
ROA	6.69	7.79	-61.82	2.43	5.63	10.19	76.25
ROE	23.71	54.16	-315.62	8.87	15.36	26.47	1048.62
Wo_Bo	22.67	10.20	0.00	16.67	22.22	30.00	66.67
Duality	0.47	0.50	0.00	0.00	0.00	1.00	1.00
Age	62.36	3.72	32.33	60.36	62.54	64.57	77.00
CSR_Training	0.12	0.32	0.00	0.00	0.00	0.00	1.00
CSR_Comm	0.41	0.49	0.00	0.00	0.00	1.00	1.00
Health_Safety	0.16	0.37	0.00	0.00	0.00	0.00	1.00
CSR_Mean	0.23	0.28	0.00	0.00	0.00	0.33	1.00
TL_TA	0.66	0.30	0.04	0.49	0.64	0.80	4.35
PBR	11.38	69.27	0.33	2.09	3.49	6.41	1372.89
Cap	48615.09	110008.70	62.53	11324.15	20902.15	42529.25	2428612.00
Ln(Cap)	10.06	1.09	4.14	9.33	9.95	10.66	14.70
Ab_Expenses	300.47	2377.18	-78214.15	0.00	44.40	264.00	27637.00

Note: All the variables are defined in section III. All monetary values are in millions USD.

The observation of Tables 3.2 to 3.12 (in the Appendix) for the descriptive statistics of firms in each sector allows us to draw the following conclusion. The sectors with the highest ESG disclosure score are Materials and Utilities, with a score of about 56%, followed by the Consumer Staples sector (54%). The sector with the lowest ESG disclosure score is Communication Services, with a score of 40%. The other sectors have a score of between 40% and 50% in general. For all the sectors, governance metrics are always the most reported (with a score of almost 80%), followed by environmental and social metrics. However, there is an exception with the Utilities sector for which there is a very high score on environmental disclosure (45%) and on social disclosure (35%). This may be because the Utilities sector is more regulated than in other sectors (see a KPMG study on this topic). Furthermore, Utilities is one of the most energy-consuming sectors. This may explain a high score of environmental disclosure in the Utilities sector, compared to the other sectors.

Regarding the financial performance, the comparison among the 11 sectors shows that the sector with the highest profitability during the 2013-2021 period is the Consumer Staples sector, with a ROA of 9.41% and a ROE of 41.52%. On the contrary, the sector with the lowest profitability is the energy sector (ROA of 0.78% and ROE of 1.62%), followed by the Utilities sector (2.47% and 7.94%, respectively). Otherwise, the IT, Health Care, Consumer Discretionary, and Industrials sectors also have a very high profitability. With the governance variables, we note that there is not a significant difference among the sectors regarding the percentage of women on board, which is around 20%-25% in all sectors. As for the duality variables, the value is the highest in the Financials sector at 0.51 and the lowest in the IT sector (0.32). This finding suggests that in the Financials sector, almost half of the companies have a duality, meaning the same person is the chairman of the board and the CEO of the company. In the IT sector, this percentage is 32%. As for the average age of the members in the board, there is not a big difference among the sectors, which is around 62 years old on average. As for the CSR variables, the comparison among the 11 sectors shows that the sector with the highest CSR engagement (measured by CSR training, CSR committee, and Health & Safety committee) is the Materials sector while the Communication Services sector has the lowest CSR engagement. We also note that the percentage of firms which have a CSR committee is very high compared to the percentage of firms which have CSR training. However, still few firms have a Safety and Health committee (e.g., Velte and Stawinoga, 2020).

Regarding the control variables, the comparison among the 11 sectors shows that the sector with the highest proportion of debt is the Real Estate sector, with a ratio of 90% of debt over total assets. The sector with the lowest proportion of debt is the Energy sector with a ratio of

53%. As for the price to book ratio, firms in the sector Consumer Discretionary is the most overvalued by the market with a price to book ratio of 53%, while those in the Utilities sector are the less overvalued by the market with a price to book ratio of 2.14%. As for the market valuation, firms in the Communication Services have the highest market capitalization (105,646 million USD) while firms in the Utilities sectors have the lowest market capitalization (24,725 million USD). Finally, the value of abnormal expenses is the highest in the Communication Services sector (453 million USD on average).

Overall, the descriptive statistics show us that the ESG disclosure score of SP500 firms is still low (around 50%), with an overrepresentation of governance metrics (a score of 80%) and a low disclosure of environmental and social metrics (around 25%). Second, the level of CSR engagement seems to be still low in general, except for the existence of a CSR committee. The percentage of women on board remains small, only 20%, while almost half of the firms have a duality in the roles of chairman of the board and executive director of the company. Finally, firms in the energy and utilities sectors seem to have a better ESG disclosure practice than firms in other sectors. These findings suggest that the sectoral analysis of litigations can be of great importance and the next sub-section presents the correlation analysis between litigations and ESG/finance variables.

III.3. Data description for employment litigations

The litigations related to employment are presented in Table 4. Table 4 shows that the employment litigations the most frequent in our data sample on SP500 firms are general contracts (306 firms), employment (260 firms), and personal injury (188 firms). For this reason, in the first analysis, we will focus on these three categories of employment litigations. The main descriptive statistics of these categories of litigations are presented in Table 5. Table 5 shows that the average number of litigations on personal injury is the highest, at about 9 litigations. The lowest average number of litigations is for the category FMLA (Family and Medical Leave Act, at about 0.07 litigation per firm on average. We also note that the maximal value of the personal injury litigation category is very high, at 3,475 litigations. A look at our database shows that this is the case for the **CTVA** (Corteva, Inc.) company in 2015. This is a company in the Materials sector, and more precisely in agriscience. According to the SEC website,[4] the high number of litigations on personal injury in 2015 for CTVA is related to the injury to a

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[4] https://sec.report/Ticker/ctva

person's body, emotions, or reputation, as contradistinguished to property rights. From the data file, we also note that the number of litigations varies strongly among firms and in time.

Table 4: Litigations related to the relationship with employees

Abbreviation	Complete name	Definition	Number of observations (number of firms)
1. Contracts	General contracts	Litigations in the contracts with various stakeholders	2755 (306)
2. Employment	Employment	Employee disputes	2348 (260)
3. Per_Injury	Personal injury	Accidents of employees	1697 (188)
4. Civil_Rights	Other civil rights	Equality, human rights, freedom, discrimination	859 (95)
5. ERISA	ERISA	Employee Retirement Income Security Act	788 (87)
6. Ada_Employ	ADA – Employment	Americans with Disabilities Act (1990)	583 (65)
7. FLSA	FLSA	Fair Labor Standards Act	576 (64)
8. Labor_General	Labor – General	Labor disputes	456 (51)
9. FMLA	FMLA	Family and Medical Leave Act	200 (22)
10. Labor_Rels	Labor & Manage, Rels	Litigations due to the relations between labor and the management	62 (7)
11. Employer_Liab	Employer Liab, PI	Employers' Liability Compulsory Insurance Act (1969)	36 (4)

Notes: This table presents the categories of litigations related to the relationship with employees. The first column presents the abbreviation of the litigation category in the data file. The second column presents the title of the litigation category, as presented on the Bloomberg terminal. The third column presents the definition of the litigation category. The fourth column presents the number of observations and the number of firms for which there is a specific category of litigations.

Table 5: Descriptive statistics of employment litigations

Variables	Mean	STD	Min	25%	Median	75%	Max
Contracts	4.09	12.16	0	0	1	3	351
Employment	**3.15**	**8.82**	**0**	**0**	**1**	**3**	**185**
Per_Injury	9.35	88.03	0	0	0	2	3475
Civil_Rights	0.62	2.38	0	0	0	0	45
ERISA	2.63	22.59	0	0	0	0	369
Ada_Employ	0.37	1.80	0	0	0	0	49
FLSA	0.41	3.43	0	0	0	0	163
Labor_General	0.30	1.99	0	0	0	0	96
FMLA	0.07	0.47	0	0	0	0	9
Labor_Rels	0.02	0.31	0	0	0	0	8
Employer_Liab	0.21	2.73	0	0	0	0	78

Notes: This table presents the main descriptive statistics of employment litigations of the firms in the SP500 index. "STD" denotes the standard deviation. "Min" denotes the minimal value. "25%" denotes the 25% quantile value. "Median" denotes the 50% quantile value. "75%" denotes the 75% quantile value. "Max" denotes the maximal value. The first column presents the different categories of employment litigations, as defined in Table 4.

Figure 3 presents the correlation among the employment litigation categories. From Figure 3, we note that the highest correlation is between Employment and ADA_Employment, with a correlation coefficient of 0.75. This high correlation suggests that most of employee disputes (Employment) may be related to issues on disabled employees (ADA_Employment). The second highest correlation is between Employment and Labor_General, with a correlation coefficient of 0.63. This result suggests that employee disputes and labor disputes may be related to similar conflictual topics with employees. The third highest correlation is between Employment and Civil_Rights, with a correlation coefficient of 0.51. This result suggests that civil rights can be part of employee disputes. Overall, we see that the employment litigation category (employee disputes) is closely related to some specific types of employee disputes such as disability and civil rights. In other cases, the correlation is quite low, for example between ERISA (Employee Retirement Income Security Act), FLSA (Fair Labor Standards Act), FMLA (Family and Medical Leave Act), Labor relations, Employer liability, and other employment litigation categories. This result shows that the litigation with employees can be of different nature and employee disputes can be related to disability, civil rights, and labor disputes.

Figure 3: Correlation among the eleven employment litigation categories
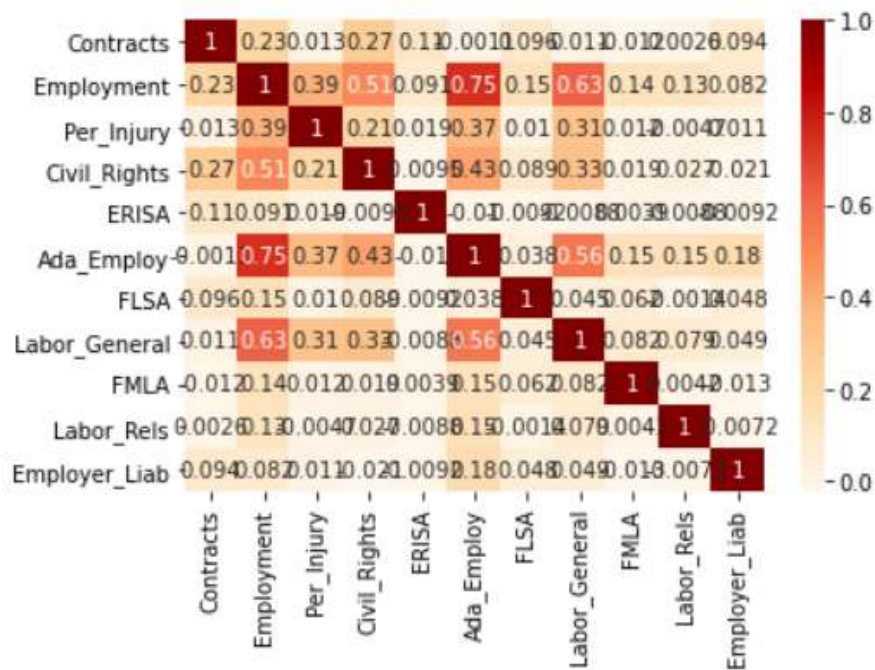
Note: This figure shows the heatmap on the correlation coefficients among the employment litigation categories. It is performed by the authors while using the Python software.

From this study on employment litigations, we decide to start our empirical analysis with the three most important employment litigation categories which are contracts, employment, and personal injury, as defined in Table 4. The next section will present our methodology to answer our research questions.

III.4. Methodology

With the objective to investigate the relationship between employment litigations and ESG reporting transparency of firms in the S&P 500 index, our methodology framework is described below. To answer the research question[5] about the link between employment litigations and ESG disclosure by firms, we consider a panel data regression. Considering previous studies with the ESG disclosure score or ESG performance as the dependent variable, the main independent variables considered are firm size (total assets), market to book ratio, ROA, ownership, leverage, age of board members, duality, and percentage of women on board. The baseline regression that we estimate is as follows:

$$Y_{i,t} = \alpha + \beta_1 Employment_{Litigations_{i,t}} + \beta_2 Size_{i,t} + \beta_2 MB_{i,t} + \beta_3 Leverage_{i,t} +$$
$$\beta_4 ROA_{i,t} + \beta_5 Insiders_{i,t} + \beta_6 Institutionals_{i,t} + \beta_7 Wo\_Bo_{i,t} + \beta_8 Duality_{i,t} + \beta_9 Age_{i,t} +$$
$$\beta_{10} Sector\_Dummy_{i,t} + \varepsilon_{i,t} \ (1)$$

Where variable $Y_{i,t}$ represents the ESG disclosure score, as well as the three individual components which are E, S, and G, separately. Employment litigation is the main independent variable which is the number of employment litigations encountered by a firm *i* in year *t*. The other variables are the baseline independent variables. The sector_dummy variable is to capture the sectoral effect on the transparency of ESG information disclosure.

Table 6 presents the distribution of firms in different industries and the category of industries (light or heavy).

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[5] It is worth noting that in the first step of our study, we consider 4 research questions. The second one is related to the link between employment litigations and financial performance. The third one is related to the link between employment litigations and firm reputation. The fourth one is related to the link between employment litigations and firm reputation. We estimated corresponding panel data regressions for these research questions. However, the R-square for these regressions is very low, around 10%. That is why we decided to not consider the other research questions and focus only on the first research question about the link between ESG disclosure scores and employment litigations.

Table 6: Sector codes for the "Sector_Dummy" variable

Sector	Sector code	Industry
Energy	1	Heavy (1)
Materials	2	Heavy (1)
Industrials	3	Heavy (1)
Utilities	4	Heavy (1)
Consumer Discretionary	5	Light (0)
Consumer Staples	6	Light (0)
Healthcare	7	Light (0)
Financials	8	Light (0)
Information Technology	9	Light (0)
Communication Services	10	Light (0)
Real Estate	11	Light (0)
TOTAL		

The baseline estimation method is the OLS method including the firm fixed effect. To better understand the underlying mechanism behind the studied relationship, we include various interactive variables between employment litigations and various firm factors related to firms' governance (women on board, duality, and average age of board members), CSR engagement (the average of the three considered CSR variables), and the financial leverage of firms.

In addition to this baseline regression model and the baseline OLS method, we also perform additional empirical analyses to check the robustness. The first robustness check analysis is to extend the baseline regression in equation (1) by including new variables such as the three considered CSR variables (CSR training, CSR committee, and Health & Safety committee), the abnormal expense variables, and the relative value between the number of employment litigations and total assets. The second robustness check analysis is to perform the baseline regression model on two different subsamples of firms in light and heavy industries. The third robustness check analysis is to use alternative methods to estimate regression equation (1) with the objective to better address a potential endogeneity issue. These alternative methods are 2SLS and GMM.

IV. Baseline results and the underlying mechanism
IV.1. Baseline results

Table 7 presents the baseline results with the OLS method to estimate equation (1).

Table 7: OLS results with the baseline model

Dependent variable	(1) ESG disclosure	(2) E_Disclosure	(3) S_Disclosure	(4) G_Disclosure
Constant	24.574***	-4.1154**	9.8535***	67.825***
	2.2073	2.0269	2.2931	3.1250
Employment litigations	**-0.0510***	**-0.1136***	**-0.0399***	**0.0004**
	0.0072	0.0085	0.0103	0.0054
Size	2.9406***	4.8811***	2.8792***	1.0678***
	0.0863	0.1838	0.1015	0.0632
Market to book ratio	-0.0017***	0.0007	-0.0051***	-0.0007
	0.0006	0.0017	0.0008	0.0004
Leverage	-1.6245***	-2.7349***	-1.9447***	-0.1988**
	0.1936	0.4902	0.1440	0.0902
ROA	0.0695***	0.1501***	0.0302	0.0283***
	0.0166	0.0262	0.0186	0.0107
Insiders	-0.0047**	-0.0056*	-0.0052	-0.0034***
	0.0024	0.0032	0.0036	0.0007
Institutional	-8.395e-07	-3.613e-07	-1.467e-06***	-6.91e-07**
	4.499e-07	7.131e-07	4.506e-07	2.807e-07
Wo_Bo	0.2141***	0.3505***	0.2222***	0.0701***
	0.0108	0.0118	0.0179	0.0073
Duality	0.1915*	-0.0668	0.3269**	0.3141**
	0.1099	0.2120	0.1469	0.1530
Age	-0.0698**	-0.1993***	-0.1492***	0.1385**
	0.0321	0.0142	0.0335	0.0542
Sector_Dummy	-1.0311***	-1.6867***	-1.2045***	-0.2050***
	0.0420	0.0893	0.0448	0.0161
Observations	4509	4509	4509	4509
Adjusted R^2	0.2892	0.2387	0.2595	0.1797
Firm fixed effect	Y	Y	Y	Y

Table 7 shows that there is **a significant and negative relationship between the number of employment litigations and the overall ESG disclosure score as well as its environmental and social components**. This result means that a higher number of employment litigations reduces the quantity of ESG information disclosed by firms, and especially environmental and social information. Very surprisingly, the estimated coefficient is the highest when the environmental disclosure score is the dependent variable. This result suggests that employment disputes can be related to environmental topics and a higher number of employment disputes may prevent firms from publicly disclosing the firm's environmental information. Overall, the baseline result presented in Table 7 shows that the number of litigations related to employee disputes reduces the transparency of firms in ESG reporting. This therefore increases information asymmetry between firms and its stakeholders. This can also provide negative signals to both internal and external stakeholders of firms, which can generate an agency problem among these stakeholders. This can also show that the firm fails to

comply with the requirement and expectation from its most important stakeholder, meaning its employees.

Regarding the other variables in the regression model, Table 7 shows that the size of firms has a positive relationship with the ESG disclosure score and its three components. It means that the bigger is the firm, the more it has the necessary resources to make a transparent ESG reporting. The market to book ratio has a significant and negative relationship with the ESG disclosure score and the social disclosure score. This result means that the more a firm is overvalued by the market, the less transparent is its ESG and social disclosure scores. This result may indicate that the US market did not necessarily value ESG reporting efforts of listed firms during the study period (from 2013 to 2021). This may suggest that investors in American stock exchanges consider that ESG reporting is costly to firms and can reduce the equity value of the firm. Therefore, they did not value ESG reporting efforts of firms. The financial leverage of firms has a significant and negative effect on the ESG disclosure score and its three individual components. This result means that the more a firm is indebted, the less transparent is its ESG reporting. This result may be because ESG information may reveal a higher long-term risk of firms, which may result in a higher cost of debt required by creditors. Therefore, firms with a high financial leverage tend to disclose less ESG information. The financial performance, measured by the ROA ratio, has a positive relationship with the ESG disclosure score, the environmental disclosure score, and the social disclosure score. However, the coefficient is not significant for the social disclosure score. This result means that the higher is the financial performance of firms, the higher is the transparency of its ESG disclosure. It means that financial performance helps increase the necessary resources to improve the transparency of ESG reporting.

Regarding the firm ownership structure, both insider and institutional owners of firms seem to reduce the transparency of ESG reporting, especially that of governance reporting. This interesting result shows that shareholders, both insider and outsider, prefer reporting less ESG information, especially governance information. This may be because shareholders consider that ESG reporting is costly and prefer reducing the firm efforts in achieving such tasks. This may also be because shareholders want to avoid scandals and controverses and prefer reporting less ESG information, especially governance information. As for the percentage of women on board, we find that the estimated coefficient is significantly positive in all cases. This result means that the presence of women on the board of directors encourages the transparency in ESG reporting of S&P 500 firms. This is true for both the global ESG disclosure score and the E, S, G individual disclosure scores. Regarding the duality in the role of the chair of board and

the CEO, it improves the transparency of ESG reporting, except for the environmental disclosure score. Interestingly, the estimated coefficient related to the "age" variable is significantly negative, except when the governance disclosure score is the dependent variable. This result means that the younger are the members of the board, the more transparent is the ESG reporting of firms. However, the higher is the age of board members, the more transparent is the disclosure of governance metrics. This result suggests that older board members tend to encourage the disclosure of governance information of firms. Finally, the sector dummy variable is significant. This result means that there is a sectoral heterogeneity in the relationship between firm factors and the transparency of ESG disclosure.

To summarize, the baseline finding in Table 7 shows that there is a negative link between the number of litigations with employees and the transparency in ESG reporting. To explain the mechanism behind this negative relationship, we include different interactive variables between a firm factor and the employment litigation variable with the results presented below.

IV.2. The underlying mechanism behind the ESG-Employment litigations relationship

To attempt to explain the negative relationship between ESG disclosure score and the number of employment litigations, we will include interactive variables between employment litigations and various firm factors. This new variable will allow us to better understand how firm factors can contribute to strengthen or to weaken the negative relationship between employment litigations and ESG disclosure score.

[Insert Tables 8.1, 8.2, 8.3, 8.4, and 8.5 here]

Table 8.1 presents the results with the inclusion of the interactive variable between the number of employment litigations and the **percentage of women on board**. The estimated coefficient is **significantly positive**, except when the environmental and governance disclosure scores are the dependent variable. This result means that in response to an increase in the number of employment litigations, a higher percentage of women on board tends to have a positive effect on the link between ESG disclosure score and employment litigations. It means that a higher percentage of women on board would strengthen the positive relationship between employment litigations and ESG disclosure scores. This result may be due to the fact that employment litigations can be widely related to the gender equality issue and a higher percentage of women on board would encourage a higher level of transparency in ESG reporting to better show the gender equality issue in the firm.

Table 8.2 shows that the estimated coefficient related to the interactive variable between employment litigations and **duality** is **significantly positive**, except when the environmental

and governance disclosure scores are the dependent variable. This result shows that the dual role between the chair and the CEO helps improve the transparency of ESG disclosure in response to an increase in the number of employment litigations.

Table 8.3 shows that the estimated coefficient related to the interactive variable between employment litigations and the average **age** of board members is **significantly negative** for all the four dependent variables (ESG, E, S, and G). This result means that in response to an increase of the number of employment litigations, a higher average age of board members would decrease the ESG disclosure transparency.

Table 8.4 shows that the estimated coefficient related to the interactive variable between employment litigations and **CSR_Mean significant and negative** when the social disclosure score is the dependent variable, while it is significantly positive when governance disclosure score is the dependent variable, and insignificant otherwise. This result means that firms' engagement in CSR activities would decrease the social disclosure score in response to an increase in the number of employment litigations. However, it would help improve the transparency of the governance disclosure score. In the meanwhile, CSR activities would not have a significant effect on the relation between employment litigations and ESG/E disclosure scores.

Finally, Table 8.5 shows that the estimated coefficient between employment litigations and firms' financial **leverage** is **significantly positive** in all cases. This result means that a higher value of financial leverage would help improve the transparency of ESG reporting of firms in response to an increase in the number of employment litigations. This result may be because a higher value of leverage means a higher requirement of reporting by creditors. That is why a higher value of leverage would help firms improve the transparency of ESG reporting.

To check the robustness of the main finding about the negative relationship between ESG reporting transparency and employment litigations, Section V will proceed various sensitivity analyses.

V. Robustness check analyses

In this section, we will proceed some sensitivity analyses of the main results obtained in section IV. Robustness check 1 considers extensive regression models in which we include CSR variables and abnormal expenses variable, respectively. Robustness check 2 considers estimating the baseline model with two subsamples of firms in light industries and in heavy industries.

V.1. Robustness check 1 – Extensive regression models

Table 9.1. presents the results while including CSR variables in regression (1) shows that the baseline result found in Table 7 remains true for the ESG, E, and S disclosure scores, meaning with a significant and negative estimated coefficient. However, **the result changes when the governance disclosure score is the dependent variable** as its associated coefficient becomes significantly positive, while it is not significant in the baseline regression model. This result means that the negative relationship between the number of employment litigations is robust for the ESG, E, and S disclosure scores. However, when including CSR variables in the regression model, the number of employment litigations increases the transparency of the disclosure of governance information of firms. This interesting result suggests that firms' engagement in CSR activities can provide incentives to its management to be more transparent in the disclosure of governance information as a response to an increasing number of employment litigations.

[Insert Tables 9.1, 9.2, and 9.3 here]

Table 9.2 presents the result when including the abnormal expense variable in the regression. We find that the result remains the same as the baseline one in Table 7, meaning a significant and negative coefficient for ESG, E, and S disclosure scores as the dependent variable and insignificant when the governance disclosure score is the dependent variable.

Table 9.3 presents the results obtained when replacing the absolute number of employment litigations by the relative number while dividing the former by the log value of total assets. The results in Table 9.3 show that the results remain similar with those with Table 7, except that the estimated coefficient related to the social disclosure score become insignificant when considering the employment litigation ratio. This result means that when normalizing the number of employment litigations to the log value of total assets, it does not have a significant relation with the social disclosure score anymore. However, the negative coefficient remains significant for the case of ESG disclosure score and environmental disclosure score. This finding allows us to main the global negative relationship between employment litigations and ESG reporting transparency.

Therefore, we can conclude that **the main finding remains robust** when including additional variables in the regression model. The next subsection checks the robustness of the main finding in two different subsamples.

V.2. Robustness check 2 – With subsamples

We decided to consider two subsamples determined in function of the industry category, light or heavy. The reason behind this distinction is that heavy-industry firms consume more resources and are usually more carbon-intensive. Therefore, the work conditions of employees may be more constrained by technical aspects, and this can generate more litigations between employers and employees. Heavy industries include energy, materials, industrials, and utilities; while light industries include consumer discretionary, consumer staples, healthcare, financials, information technology, communication services, and real estates. Table 10.1 presents the results for firms in light industries while Table 10.2 shows that for firms in heavy industries.

[Insert Tables 10.1 and 10.2 here]

Table 10.1 shows that the baseline result remains true for firms in light industries when ESG, S, and G disclosure scores are the dependent variable. However, **the result changes when the social disclosure score is the dependent variable** as the related estimated coefficient becomes significantly positive, instead of negative. This result means that for firms in light industries, a higher number of employment litigations forces them to provide a more transparent disclosure of social metrics. This may be because for firms in light industries, employment litigations provide stronger bad signal than for those in heavy industries. Therefore, to reduce the impact, firms in light industries tend to be more transparent in the reporting of social metrics.

Table 10.2 shows that result of the baseline regression model applied on firms in heavy industries. The result is totally different from the baseline model in Table 7. The estimated coefficient becomes insignificant when the ESG and S disclosure scores are the dependent variable. Surprisingly, the estimated coefficient becomes significantly positive when E and G disclosure scores are the dependent variable. **This result means that there is a significant difference between firms in light industries and those in heavy industries** regarding the relationship between the number of employment litigations and the transparency in ESG disclosure. For firms in heavy industries, the higher is the number of employment litigations, the more transparent are the environmental and governance disclosure scores. This result may be because firms in heavy industries are more exposed to scandals and controverses, especially regarding environmental and governance aspects. Therefore, when the number of employment litigations increases, firms in heavy industries tend to make more efforts in reporting environmental and governance information to reduce the risk of scandal and controverse.

The result obtained with subsamples of firms in light and heavy

VI. Conclusion

This paper investigates the relationship between employment litigations and ESG reporting of American firms in the S&P 500 index over the 2013-2021 period. With annual data on the number of employee disputes, the empirical results show that there is a significant and negative relationship between employment litigations and ESG reporting. This result means that the higher is the number of employment litigations, the lower is the transparency of ESG reporting. This result suggests that the relationship with employees plays an important role in the engagement of firms in ESG reporting. Conflictual relationship with employees can force firms to justify it by disclosing less ESG information. However, we find that this result can change in function of the industry category of firms, in light or heavy industries. Indeed, the main finding about the negative relationship between ESG disclosure score and the number of employment litigations remains true only for firms in light industries while it is not true anymore for firms in heavy industries. This interesting result suggests that there is a significant difference between firms in light and heavy industries, regarding the relationship between ESG reporting transparency and employment litigations. Therefore, public policies regarding employment litigations and ESG reporting need to consider this sectoral difference. In addition, we find that firm characteristics can have a moderating effect in the relationship between employment litigations and the transparency of ESG reporting.

Finally, this research leads us to confirm that the social aspect, and especially the way firms manage human capital, is an important topic and the relationship with employees is of great importance in the ESG field. Therefore, more attention should be paid on the management of the relationship and of the litigations with employees when these latter happen. Future research may go further with other social metrics and investigate their relationship with both ESG and financial performance of firms.

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Employment litigations and ESG reporting transparency
An empirical analysis of S&P 500 firms

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Table 8.1: OLS results with interactive variable between women on board and employment litigations

	(1)	(2)	(3)	(4)
Dependent variable	**ESG disclosure**	**E_Disclosure**	**S_Disclosure**	**G_Disclosure**
Constant	24.864***	-3.6510*	10.183***	67.902***
	2.2553	1.9011	2.3750	3.1959
Employment litigations	**-0.1468***	**-0.2670***	**-0.1488***	**-0.0250**
	0.0524	0.1004	0.0492	0.0275
Litigations x Wo_Bo	0.0037*	0.0060	0.0042**	0.0010
	0.0021	0.0041	0.0020	0.0009
Wo_Bo	0.2034***	0.3333***	0.2100***	0.0672***
	0.0123	0.0195	0.0177	0.0066
Size	2.9529***	4.9007***	2.8931***	1.0711***
	0.0921	0.1940	0.1058	0.0651
Market to book ratio	-0.0017***	0.0007	-0.0050***	-0.0007
	0.0006	0.0017	0.0008	0.0004
Leverage	-1.6119***	-2.7147***	-1.9303***	-0.1955**
	0.1972	0.4966	0.1424	0.0926
ROA	0.0702***	0.1513***	0.0311*	0.0285***
	0.0169	0.0268	0.0187	0.0107
Insiders	-0.0048**	-0.0057*	-0.0053	-0.0034***
	0.0024	0.0032	0.0036	0.0007
Institutional	-8.509e-07*	-3.797e-07	-1.48e-06***	-6.941e-07**
	4.541e-07	7.175e-07	4.557e-07	2.841e-07
Duality	0.2031*	-0.0482	0.3401**	0.3172**
	0.1089	0.2094	0.1486	0.1518
Age	-0.0724**	-0.2036***	-0.1522***	0.1378**
	0.0333	0.0160	0.0350	0.0550
Sector_Dummy	-1.0318***	-1.6878***	-1.2053***	-0.2052***
	0.0416	0.0880	0.0457	0.0159
Observations	4509	4509	4509	4509
Adjusted R^2	0.2895	0.2389	0.2597	0.1798
Firm fixed effect	Y	Y	Y	Y

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Table 8.2: OLS results with interactive variable between duality and employment litigations

Dependent variable	(1) ESG disclosure	(2) E_Disclosure	(3) S_Disclosure	(4) G_Disclosure
Constant	24.696***	-4.0361**	10.113***	67.855***
	2.1868	1.9533	2.3215	3.0996
Employment litigations	**-0.0626***	**-0.1211***	**-0.0645***	**-0.0024**
	0.0080	0.0127	0.0093	0.0053
Litigations x Duality	0.0366*	0.0237	0.0776***	0.0087
	0.0208	0.0309	0.0256	0.0121
Duality	0.0754	-0.1418	0.0809	0.2865**
	0.0809	0.1682	0.1462	0.1388
Size	2.9281***	4.8730***	2.8526***	1.0648***
	0.0825	0.1775	0.1008	0.0647
Market to book ratio	-0.0017***	0.0006	-0.0051***	-0.0007
	0.0007	0.0017	0.0008	0.0004
Leverage	-1.6347***	-2.7415***	-1.9663***	-0.2013**
	0.1929	0.4869	0.1484	0.0892
ROA	0.0689***	0.1497***	0.0290	0.0281***
	0.0165	0.0259	0.0189	0.0106
Insiders	-0.0048**	-0.0056*	-0.0053	-0.0034***
	0.0024	0.0032	0.0036	0.0007
Institutional	-8.395e-07*	-3.614e-07	-1.467e-06***	-6.91e-07**
	4.486e-07	7.123e-07	4.48e-07	2.805e-07
Wo_Bo	0.2143***	0.3506***	0.2227***	0.0701***
	0.0108	0.0117	0.0180	0.0073
Age	-0.0692**	-0.1990***	-0.1480***	0.1386**
	0.0324	0.0143	0.0340	0.0544
Sector_Dummy	-1.0309***	-1.6866***	-1.2041***	-0.2050***
	0.0419	0.0893	0.0447	0.0161
Observations	4509	4509	4509	4509
Adjusted R^2	0.2892	0.2387	0.2596	0.1797
Firm fixed effect	Y	Y	Y	Y

Table 8.3: OLS results with interactive variable between age and employment litigations

	(1)	(2)	(3)	(4)
Dependent variable	**ESG disclosure**	**E_Disclosure**	**S_Disclosure**	**G_Disclosure**
Constant	22.475***	-7.8395***	8.4719***	66.632***
	2.0374	1.4880	2.1346	3.3642
Employment litigations	**0.5205*****	**0.9004*****	**0.3363*****	**0.3252****
	0.1447	0.2690	0.0967	0.1279
Litigations x Age	-0.0097***	-0.0171***	-0.0064***	-0.0055***
	0.0024	0.0045	0.0017	0.0021
Age	-0.0405	-0.1474***	-0.1299***	0.1551***
	0.0328	0.0191	0.0328	0.0581
Size	2.9741***	4.9404***	2.9012***	1.0868***
	0.0789	0.1736	0.0962	0.0622
Market to book ratio	-0.0016**	0.0008	-0.0050***	-0.0007
	0.0007	0.0018	0.0008	0.0005
Leverage	-1.6089***	-2.7073***	-1.9344***	-0.1900**
	0.1913	0.4813	0.1471	0.0904
ROA	0.0708***	0.1524***	0.0311*	0.0290***
	0.0161	0.0255	0.0183	0.0105
Insiders	-0.0047**	-0.0055*	-0.0052	-0.0034***
	0.0023	0.0031	0.0036	0.0007
Institutional	-7.962e-07*	-2.846e-07	-1.439e-06***	-6.665e-07**
	4.458e-07	7.024e-07	4.452e-07	2.859e-07
Wo_Bo	0.2155***	0.3529***	0.2231***	0.0709***
	0.0109	0.0124	0.0180	0.0072
Duality	0.2039*	-0.0448	0.3351**	0.3211**
	0.1106	0.2101	0.1479	0.1544
Sector_Dummy	-1.0350***	-1.6936***	-1.2071***	-0.2072***
	0.0429	0.0914	0.0449	0.0162
Observations	4509	4509	4509	4509
Adjusted R^2	0.2910	0.2403	0.2604	0.1821
Firm fixed effect	Y	Y	Y	Y

Table 8.4: OLS results with interactive variable between CSR mean and employment litigations

	(1)	(2)	(3)	(4)
Dependent variable	ESG disclosure	E_Disclosure	S_Disclosure	G_Disclosure
Constant	26.228***	-1.4198	11.311***	68.639***
	1.8838	1.1359	2.0986	3.0519
Employment litigations	**-0.0324***	**-0.1015***	**0.0026**	**0.0015**
	0.0066	0.0167	0.0135	0.0063
Litigations x CSR_Mean	0.0083	0.0758	-0.0829**	0.0316***
	0.0250	0.0574	0.0391	0.0121
CSR_Mean	14.251***	22.524***	13.549***	6.7036***
	0.4255	0.8869	0.4738	0.3789
Size	2.1698***	3.6526***	2.1611***	0.7007***
	0.0695	0.1320	0.1039	0.0508
Market to book ratio	0.0006	0.0044***	-0.0030***	0.0004
	0.0005	0.0016	0.0007	0.0004
Leverage	-1.0762***	-1.8647***	-1.4287***	0.0607
	0.2306	0.4554	0.2607	0.1348
ROA	0.0941***	0.1895***	0.0529***	0.0401***
	0.0122	0.0188	0.0156	0.0091
Insiders	-0.0032	-0.0031	-0.0038	-0.0027***
	0.0023	0.0031	0.0035	0.0006
Institutional	4.34e-07	1.66e-06***	-2.691e-07	-8.807e-08
	3.735e-07	6.003e-07	3.911e-07	2.296e-07
Wo_Bo	0.1687***	0.2783***	0.1798***	0.0485***
	0.0104	0.0188	0.0152	0.0056
Duality	0.2715***	0.0667	0.3928**	0.3549***
	0.0681	0.1596	0.1671	0.1251
Age	-0.0621**	-0.1869***	-0.1424***	0.1422***
	0.0269	0.0159	0.0293	0.0510
Sector_Dummy	-0.6227***	-1.0409***	-0.8165***	-0.0128**
	0.0313	0.0746	0.0446	0.0065
Observations	4509	4509	4509	4509
Adjusted R^2	0. 0.3944	0.3211	0.3404	0.2795
Firm fixed effect	Y	Y	Y	Y

Table 8.5: OLS results with interactive variable between leverage and employment litigations

	(1)	(2)	(3)	(4)
Dependent variable	**ESG disclosure**	**E_Disclosure**	**S_Disclosure**	**G_Disclosure**
Constant	24.643***	-4.0274**	9.9098***	67.889***
	2.2139	2.0152	2.2972	3.1385
Employment litigations	**-0.2465***	**-0.3619***	**-0.1987***	**-0.1791**
	0.0241	0.0566	0.0274	0.0208
Litigations x Leverage	0.2851***	0.3621***	0.2316***	0.2618***
	0.0324	0.0775	0.0417	0.0324
Leverage	-2.1074***	-3.3482***	-2.3369***	-0.6422***
	0.1928	0.5518	0.1502	0.1141
Size	2.9195***	4.8543***	2.8620***	1.0484***
	0.0866	0.1853	0.1005	0.0659
Market to book ratio	-0.0022***	3.67e-05	-0.0054***	-0.0011***
	0.0006	0.0016	0.0008	0.0004
ROA	0.0669***	0.1467***	0.0281	0.0259**
	0.0165	0.0260	0.0185	0.0107
Insiders	-0.0046*	-0.0054	-0.0051	-0.0033***
	0.0024	0.0033	0.0037	0.0008
Institutional	-8.003e-07*	-3.116e-07	-1.435e-06***	-6.551e-07**
	4.502e-07	7.14e-07	4.529e-07	2.831e-07
Wo_Bo	0.2150***	0.3516***	0.2229***	0.0709***
	0.0107	0.0117	0.0177	0.0072
Duality	0.1811*	-0.0799	0.3185**	0.3046**
	0.1056	0.2128	0.1450	0.1466
Age	-0.0633**	-0.1912***	-0.1440***	0.1444***
	0.0323	0.0142	0.0341	0.0546
Sector_Dummy	-1.0245***	-1.6783***	-1.1991***	-0.1989***
	0.0407	0.0871***	0.0445	0.0153
Observations	4509	4509	4509	4509
Adjusted R^2	0.2906	0.2394	0.2603	0.1839
Firm fixed effect	Y	Y	Y	Y

Table 9.1. Regressions including CSR variables

	(1)	(2)	(3)	(4)
Dependent variable	**ESG disclosure**	**E_Disclosure**	**S_Disclosure**	**G_Disclosure**
Constant	25.756***	-2.0867*	11.172***	68.030***
	1.9571	1.1554	2.1183	3.1900
Employment litigations	**-0.0281***	**-0.0778***	**-0.0196**	**0.0128***
	0.0035	0.0046	0.0078	0.0041
Size	2.1628***	3.6540***	2.1468***	0.6926***
	0.0517	0.1102	0.0908	0.0527
Market to book ratio	0.0004	0.0041**	-0.0030***	0.0002
	0.0006	0.0017	0.0007	0.0005
Leverage	-0.8667***	-1.6131***	-1.3136***	0.3223*
	0.2594	0.4636	0.2897	0.1718
ROA	0.1004***	0.1974***	0.0559***	0.0479***
	0.0118	0.0190	0.0149	0.0089
Insiders	-0.0031	-0.0030	-0.0037	-0.0025***
	0.0022	0.0030	0.0035	0.0005
Institutional	3.185e-07	1.531e-06**	-3.457e-07	-2.284e-07
	4.026e-07	6.354e-07	4.1e-07	2.552e-07
Wo_Bo	0.1782***	0.2892***	0.1856***	0.0603***
	0.0103	0.0196	0.0152	0.0042
Duality	0.2960***	0.0906	0.4139**	0.3834***
	0.0860	0.1528	0.1930	0.0906
Age	-0.0518*	-0.1755***	-0.1355***	0.1549***
	0.0290	0.0154	0.0303	0.0536
Sector_Dummy	-0.6905***	-1.1123***	-0.8665***	-0.0948***
	0.0352	0.0815	0.0412	0.0122
CSR Training	9.1539***	12.744***	6.9980***	7.7225***
	0.3384	0.6107	0.3971	0.2117
CSR Committee	3.8232***	6.2865***	4.1027***	1.0898***
	0.3672	0.7963	0.2549	0.1472
Health & Safety Committee	3.3201***	6.1738***	3.2879***	0.5078***
	0.2626	0.5146	0.3801	0.1491
Observations	4509	4509	4509	4509
Adjusted R^2	0.4145	0.3299	0.3485	0.3866
Firm fixed effect	Y	Y	Y	Y

Table 9.2: OLS results with abnormal expenses variable

	(1)	(2)	(3)	(4)
Dependent variable	**ESG disclosure**	**E_Disclosure**	**S_Disclosure**	**G_Disclosure**
Constant	23.386***	-5.9727***	8.5968***	67.374***
	1.9826	1.8158	2.0276	3.0458
Employment litigations	**-0.0492***	**-0.1108***	**-0.0379***	**0.0011**
	0.0071	0.0095	0.0090	0.0057
Size	2.8949***	4.8096***	2.8308***	1.0504***
	0.0837	0.1808	0.0913	0.0665
Market to book ratio	-0.0021***	-1.248e-05	-0.0055***	-0.0009**
	0.0005	0.0016	0.0008	0.0004
Leverage	-1.6868***	-2.8323***	-2.0106***	-0.2225**
	0.1958	0.4947	0.1318	0.0942
ROA	0.0950***	0.1900***	0.0572***	0.0380***
	0.0153	0.0270	0.0156	0.0097
Insiders	-0.0046**	-0.0054*	-0.0051***	-0.0034***
	0.0023	0.0032	0.0036	0.0007
Institutional	-6.322e-07	-3.716e-08	-1.248e-06***	-6.122e-07**
	4.497e-07	7.143e-07	4.446e-07	2.83e-07
Wo_Bo	0.2115***	0.3464***	0.2194***	0.0691***
	0.0109	0.0123	0.0177	0.0074
Duality	0.2493**	0.0236	0.3880***	0.3361**
	0.1109	0.2189	0.1488	0.1520
Age	-0.0507*	-0.1696***	-0.1291***	0.1457***
	0.0308	0.0166	0.0316	0.0535
Sector_Dummy	-0.9973***	-1.6338***	-1.1687***	-0.1921***
	0.0423	0.0895	0.0462	0.0164
Abnormal expenses	0.0005***	0.0007***	0.0005***	0.0002***
	7.413e-05	0.0001	6.104e-05	3.629e-05
Observations	4509	4509	4509	4509
Adjusted R^2	0.2969	0.2449	0.2663	0.1843
Firm fixed effect	Y	Y	Y	Y

Table 9.3: OLS results with the ratio of employment litigations over total assets

	(1)	(2)	(3)	(4)
Dependent variable	**ESG disclosure**	**E_Disclosure**	**S_Disclosure**	**G_Disclosure**
Constant	28.869***	2.7880	11.064***	72.592***
	1.6606	1.8350	1.7810	2.7297
Employment litigations / Total assets	**-0.4538***	**-1.4187***	**0.0903**	**-0.0338**
	0.0703	0.1162	0.1174	0.0676
Size	2.5700***	4.3001***	2.2990***	1.1154***
	0.1169	0.2299	0.1242	0.0633
Market to book ratio	0.0003	0.0039***	-0.0030**	-0.0001
	0.0004	0.0011	0.0012	0.0004
Leverage	-1.2818***	-2.8903***	-1.3413***	0.3806***
	0.2160	0.4840	0.3676	0.0713
ROA	0.1655***	0.3009***	0.1466***	0.0494***
	0.0158	0.0282	0.0142	0.0104
Insiders	-0.0028	-0.0030	-0.0024	-0.0031***
	0.0022	0.0032	0.0034	0.0005
Institutional	-4.647e-07	5.114e-08	-4.392e-07	-1.004e-06***
	4.713e-07	7.381e-07	4.724e-07	2.678e-07
Wo_Bo	0.2114***	0.3486***	0.2209***	0.0652***
	0.0140	0.0208	0.0163	0.0095
Duality	0.0860	-0.4605	0.4970**	0.2214
	0.1253	0.3189	0.2003	0.1576
Age	-0.1731***	-0.3383***	-0.2161***	0.0344
	0.0324	0.0186	0.0389	0.0471
Sector_Dummy	-0.4409***	-0.8986***	-0.3251***	-0.0999***
	0.0495	0.0640	0.0706	0.0292
Observations	4509	4509	4509	4509
Adjusted R^2	0.2475	0.2067	0.2066	0.1725
Firm fixed effect	Y	Y	Y	Y

Table 10.1: OLS results with subsamples – light industries

	(1)	(2)	(3)	(4)
Dependent variable	ESG_Dis	E_Dis	S_Dis	G_Dis
Constant	25.379***	-4.3984*	8.5539***	71.811***
	1.9978	2.2966	2.1892	2.6716
Employment litigations	**-0.0222*****	**-0.0859*****	**0.0187***	**0.0005**
	0.0061	0.0076	0.0105	0.0054
Size	2.5266***	4.2170***	2.2621***	1.1052***
	0.1160	0.2290	0.1208	0.0657
Market to book ratio	0.0010***	0.0055***	-0.0024*	3.114e-05
	0.0004	0.0008	0.0013	0.0004
Leverage	-1.3461***	-3.0311***	-1.3802***	0.3674***
	0.2510	0.4720	0.4171	0.0775
ROA	0.1751***	0.3200***	0.1540***	0.0516***
	0.0182	0.0319	0.0165	0.0109
Insiders	-0.0024	-0.0022	-0.0021	-0.0030***
	0.0022	0.0032	0.0033	0.0005
Institutional	9.112e-09	1.02e-06	-9.224e-08	-8.977e-07***
	5.052e-07	7.944e-07	5.102e-07	2.685e-07
Wo_Bo	0.2189***	0.3636***	0.2266***	0.0669***
	0.0137	0.0201	0.0157	0.0097
Duality	0.1297	-0.3713	0.5292***	0.2313
	0.1323	0.3432	0.1916	0.1589
Age	-0.1696***	-0.3309***	-0.2138***	0.0351
	0.0344	0.0211	0.0405	0.0475
Observations	3177	3177	3177	3177
Adjusted R^2	0.2446	0.2020	0.2057	0.1723
Firm fixed effect	Y	Y	Y	Y

Table 10.2: OLS results with subsamples – Heavy industries

Dependent variable	(1) ESG_Dis	(2) E_Dis	(3) S_Dis	(4) G_Dis
Constant	-10.239***	-58.735***	-24.184***	51.982***
	2.0623	4.2819	2.2475	5.5212
Employment litigations	**0.0328**	**0.1180***	**-0.0790**	**0.0593***
	0.0363	0.0658	0.0482	0.0102
Size	4.4576***	7.4679***	5.1817***	0.7363***
	0.1533	0.3757	0.2102	0.0618
Market to book ratio	-0.0277***	-0.0520***	-0.0282***	-0.0030
	0.0042	0.0075	0.0055	0.0021
Leverage	-0.2956	4.0882***	-1.6650	-3.3013***
	0.6199	0.8360	1.0470	0.4118
ROA	-0.1593***	-0.2054***	-0.2169***	-0.0561**
	0.0480	0.0715	0.0687	0.0247
Insiders	-0.0260**	-0.0331**	-0.0357**	-0.0093*
	0.0116	0.0158	0.0158	0.0051
Institutional	0.0004	2.2e-05	0.0001	0.0011***
	0.0003	0.0004	0.0003	0.0002
Wo_Bo	0.2224***	0.3575***	0.2362***	0.0739***
	0.0171	0.0351	0.0321	0.0108
Duality	0.0682	0.0969	-0.2985	0.4047**
	0.2805	0.5730	0.2610	0.1680
Age	0.2192***	0.1708***	0.0173	0.4684***
	0.0175	0.0541	0.0241	0.0843
Observations	1332	1332	1332	1332
Adjusted R^2	0.3691	0.3034	0.3437	0.2435
Firm fixed effect	Y	Y	Y	Y