

## Does Board Compensation Influence Corporate Social Responsibility Investment?

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### Abstract

This paper empirically investigates the association between Board compensation and corporate social responsibility (CSR). Using data from publicly listed firms on the Bombay Stock Exchange(BSE) from 2013-2023. We find that board compensation is an important determinant of CSR investment. Further analysis reveals that this relationship is more profound when director compensation is above a threshold. Our additional analysis reveals that the relationship between CSR and board compensation is significantly positive for firms operating in low-competitive markets and having high growth opportunities. We also find that CSR is significantly negatively related to a firm's total risk. Overall, our results are robust to the alternate econometric methodologies.

**Keywords:** Corporate Social Responsibility, Board Compensation, Corporate Governance, Sustainability, Regulation

## 1. Introduction

Firms worldwide are taking steps to integrate corporate social responsibility(CSR) into their activities and, in turn, spend billions of dollars on CSR. The prevalence of sustainability reporting surged significantly from 2011, with only approximately 20% of companies publishing reports, to 72% just three years later in 2013. Subsequently, from 2013 to 2017, the frequency of reporting saw a steady rise each year, reaching 86% of companies reporting in 2018.<sup>1</sup> The evaluation of the benefits and costs of CSR is an ongoing topic of debate in academia, corporations and among corporate executives. CSR is increasingly becoming a focal point within corporate governance discussion, gaining traction within boardrooms across organisations of all sizes. The conventional belief suggests that a firm should reward its top management for undertaking CSR, which in turn improves firm performance. Literature on executive compensation and CSR has gained considerable, revealing a wealth of findings with conflicting evidence. Berrone and Gomez-Mejia (2009) find that good environmental performance in polluting industries increases CEO pay. Jian and Lee (2015) found a negative association between CSR and executive compensation; their additional analysis reveals that executives are rewarded for a normal level of CSR and penalised when CSR investments deviate from the expected amount. Karim, Lee and Suh (2018) found that a firm's social performance is negatively related to cash compensation and positively associated with equity-based compensation. there is a dearth of literature that directly examines the association between board compensation and CSR Investment, as the board of directors are responsible for and oversees the governance, culture and management of CSR<sup>2</sup>. In a more general sense, people see the firm performance in terms of profitability or return to shareholders. However, with the rise in sustainability reporting standards, firm performance is also evaluated by the impact they create on society through their socially responsible actions. The success or failure of the firm is not only the responsibility of the CEO; it is the collective responsibility of the board as well. The board is one of the essential constituents of the governance structure; their compensation could influence their decision, and that in turn reflects in the firm's growth and the alignment of their relations with the stockholders. The literature available on CSR majorly focuses on board characteristics and their attributes like board composition, board diversity, board expertise, size of board etc. (Rao and Tilt (2016);

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<sup>1</sup> <https://www.ga-institute.com/storage/press-releases/article/flash-report-86-of-sp-500-indexR-companies-publish-sustainability-responsibility-reports-in-20.html>

<sup>2</sup> <https://www.csr.com.au/investors-and-news/corporate-governance/board-charter>

Harjoto et al. (2015); Shammari et al. (2023); Rouf and Hossan (2021). The results of these empirical studies show that these attributes have a bearing on firm CSR. In this paper, we try to fill this gap by examining the publicly listed firms on the Bombay Stock Exchange during the years 2013 to 2023 and address the following questions: Are board compensation and CSR linked after controlling for CEO compensation? Do firms that pay high(Low) to their boards impact their CSR? How does heterogeneity among firms impact CSR and board compensation when investment in CSR is mandatory for firms? Does CSR impact total firm risk? And when firm risk is high(low), does board compensation impact CSR? To our knowledge, this is the first study to focus directly on board compensation and CSR.

CSR spending and reporting have increased globally during the last decade. Economic Policy Group report indicates that in 2013, global Fortune 500 companies spent US \$ 20 billion on CSR. On the side of CSR reporting, 64% of the top Fortune 500 firms reported CSR in 2005; amongst the largest 250 companies, 92% of companies reported CSR in 2005<sup>3</sup>. In India, as per Ministry of Corporate Affairs data for the financial year 2017-18, the total amount spent on CSR was ₹1709 million, which increased to ₹2621 million in the year 2020-21<sup>4</sup>. In our sample, the mean CSR increased from ₹124 million to ₹258 million from 2015 to 2023, respectively. On the other hand, in the last decade, the number of hours of work performed and the number of leadership positions held by non-executive directors have increased (Friestedt et al. (2020)). Therefore, a significant increase in the director's compensation has also been seen. The total average director compensation for S&P 500 companies was \$212,750 million in 2009, and it increased to \$263,748 million in 2014, and in 2022 it was \$ 316,091 million. In India, the average sitting fees and commission paid to Nifty 50 companies' non-executive directors in 2011 was ₹6.918 million and ₹31.57 million, respectively it increased to ₹9.594 million and ₹41.957 million in the year 2022, an increase of 38.68% over the two years. There is a considerable variation not only in terms of director compensation but also in the manner in which they are compensated. Directors are usually given annual retainer fees, sometimes supplemented with additional fees for committee membership and special services rendered. Unlike in developed countries, emerging countries' top executive compensation structure varies in pay composition. In India, top executives get almost 14-29% as variable pay, while in S&P 500 companies, stock awards

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<sup>3</sup> <https://www.economicpolicygroup.com/publication/business-backs-education-report-launch/>

<sup>4</sup> <https://www.csr.gov.in/content/csr/global/master/home/home.html>

and option grants represent 60% of total average director compensation. In our sample, the average director compensation (cash plus stock) is approximately ₹7 million, the median is ₹3 million, and the maximum is ₹452 million.

Extensive research has been conducted in the past to investigate the relationship between executive compensation and firm performance and CSR. Established literature on executive compensation highlights the importance of executive compensation contracts (Bebchuk et al., 2003; Elsayed & Elbardan, 2018). Executive compensation is designed in a way that can direct managerial behaviour into specific objectives that have both financial and social implications. The CEO is the face of the company, while the board's role is to monitor, control and supervise the top management, establish executive compensation and protect the interest of shareholders. An essential aspect requiring examination is the factors that influence board decisions and actions. Firms with higher board compensation exhibit more socially responsible behaviour. If this is the case, we expect a positive relationship between board compensation and CSR. The total board compensation and average director compensation are used as key variables of interest, and the total amount spent on CSR activities is used as a dependent variable. In all our analyses, we control for CEO compensation and other firm and governance characteristics and examine whether board compensation impacts CSR investment. We further investigate that it is possible that the relationship between board compensation and CSR could be influenced by the heterogeneity that exists among firms paying high or low compensation. Therefore, we further divided our sample into two sub-sample based on the median value of average director compensation.

It is equally important to understand whether board compensation is positively related to CSR when competition is high or low because the product market competition may moderate the effect of CSR on board compensation. We expect the firm to have a positive relationship between board compensation and CSR due to the mandatory CSR provision of the Companies Act 2013. Alexander and Zhou (1995) find that in more competitive markets, the incentive component of the executive tends to be higher because increased(decreased) competition in the product market may increase(decrease) managerial efforts. Moreover, the firm has to pay for the managerial efforts. Therefore, we divide our sample into two sub-samples based on the product market competition. Consistent with the prior literature, we employ HHI (Herfindalh-Hirschman Index) as a proxy variable for competition.

We also examine the moderating effect of growth opportunities on board compensation and CSR for the same reason cited above. A firm with more growth opportunities spends more on CSR than low-growth firms. We employ the market-to-book ratio as the proxy for growth opportunities.

Finally, we explore the impact of CSR on total firm risk. The notion behind this is that CSR reduces firm risk because of enhanced stakeholder relations, which in turn increases the firm value and decreases the firm risk. We also explore the moderating effect of total firm risk on CSR and Board compensation. Jo and Na (2012) found that CSR engagement inversely affects firm risk after controlling for firm characteristics. Gao et al. (2022) found that CSR-linked compensation reduces firm risk only when it is above the optimal level and has no significant effect below the optimal level.

The result of our analysis reveals that aggregate board and director compensation is an important determinant of CSR investment. Firms that pay more compensation to their boards invest more in CSR than their counterpart. Our further analysis reveals that this relationship occurs when the aggregate board or director compensation is above a threshold, competition is low, and growth opportunities are higher. Consistent with the literature, we find that CSR reduces the firm's total risk. In addition, we also find that in less risky firms, the relationship between CSR and board compensation is negative and significant.

Our paper contributes to the literature in the following way. First, we investigate the effect of aggregate board and average director compensation on CSR investment. We extend compensation literature that majorly focuses on a firm's financial performance. We show that the compensation of board members positively impacts investment in CSR after controlling for CEO compensation. Second, we contribute to the literature on corporate governance by demonstrating the effect of high and low-compensation firms on CSR investment. It may be possible that a firm's CSR investment may be affected by the amount of compensation firms pay to their board member. Third, we provide evidence that the heterogeneity that exists among firms operating in high and low product market competition and firms that have high and low growth opportunities and board compensation could induce CSR investment. Fourth, we also demonstrate that investment in CSR reduces firm total risk. we provide evidence that higher board compensation impacts CSR investment more in low risk firms in contrast to high risk firm.

The remainder of the paper is organized as follows: In section 2, we discuss the institutional settings. Section 3 discusses the literature review, and in section 4, we discuss the data, sample and variable construction and empirical methodology. Section 5 discusses the empirical results, and section 6 discusses the paper's conclusion.

## **2. Institutional settings**

In India, the history of philanthropic activities is not new; it dates back thousands of years with the concept of 'Daan', meaning voluntary donation. The country has one of the world's richest traditions of philanthropy. Before the colonial era, many large and small provinces made several arrangements to ensure that members of their provinces would not suffer. The post-independence India adopted a "mixed economy" model, which integrated the features of capitalism and socialism. The government took care of India's majority of economic activities, and then-government leadership believed that since planning was impossible in a market-based economy, the state and public sector would inevitably play a leading role in economic progress. So, most of the economic activities were taken care of by State and Public Sector Enterprises (PSUs) to bring the economy on track with balanced socioeconomic development. Indian PSUs have a long history; their immense contribution to the social good cannot be ignored. However, on the counter, the post-independence role of the private sector was limited due to heavy licensing and legal regulations. There were only a few big Indian corporate houses that not only supported the Indian freedom movement but also helped in building the nation. Initially, because of their religious and cultural beliefs, they performed philanthropic activities. However, they had a commercial backing initiative to advance the nation's economic and social development, so their generosity was not entirely selfless. During this regime, CSR activities were mostly dependent on corporate self-regulation. However, as times have changed, a substantial shift in the methodology has occurred. After 1991, India witnessed a major shift in economic activities due to the Liberalization, Privatization and Globalization (LPG) policies, and this paved the way for private and foreign companies to enter a market full of potential, but this move has changed the scenario. A major shift has been seen from a philanthropic-based model to a stakeholder-based model. Businesses are directly responsible to their stakeholders. What is good for the stakeholders is good for society<sup>5</sup>.

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<sup>5</sup> <https://www.forbes.com/advisor/investing/milton-friedman-social-responsibility-of-business/>

India is the first country to move from a voluntary CSR to a mandatory CSR regime. Indian Companies Act, 2013 makes it mandatory for every firm that has a net worth greater than 5,000 crores, a revenue greater ₹1,000 crores, or a net profit greater than five crores to spend at least 2% of its average three-year net profit on CSR initiatives each fiscal year. The Act also confers the responsibility to the Board to ensure compliance. The act also grants authority to the companies so that they are free to create and execute their own rules of CSR investment and provide explanations for any non-fulfilment or non-utilization of CSR funds.

In light of these institutional settings, India provides numerous opportunities to study the impact of Board Compensation on CSR. The first reason is that in our data set, we find a considerable variation in board and director compensation; this helps us establish an association that a firm that pays more(less) in board compensation could invest more(less) in CSR. The second reason is that section 135 of the Companies Act 2013 makes it mandatory for certain class firms that meet the prescribed threshold to invest two percent of three-year average net profit. As CSR is a board-driven process, the responsibility of the board as a CSR-eligible company would be to approve the CSR policy, ensure that activities included in CSR policy have been undertaken by the company, satisfy itself regarding the utilisation of the disbursed funds if the company fails to spend the prescribed amount board has to specify the reasons for not spending the prescribed amount in its report. w.e.f 22<sup>nd</sup> January 2021, any non-compliance with the CSR provision would be considered a civil wrong.<sup>6</sup> So, boards have a wide array of responsibilities to ensure that CSR activities align with the legal provisions. The third reason is that India is the fastest-growing country in terms of GDP and has one of the world's largest stock markets, having more than 5200 companies listed on BSE and 142 million registered investors<sup>7</sup>. This all makes it interesting to study the link between board compensation and CSR.

### **3. Literature Review and Hypothesis Development**

Executive compensation, firm performance, and corporate social responsibility are well studied in the prior literature. However, there is a dearth of literature that explores the association between CSR and board compensation and firm risk.

Literature on CSR covers a variety of perspectives behind firm's involvement in CSR. Responsible stockholders are emancipated in the corporate process and, therefore encourage

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<sup>6</sup> <https://www.mca.gov.in/content/mca/global/en/acts-rules/ebooks/rules.html>

<sup>7</sup> <https://listing.bseindia.com/home.htm>

firms to pursue a non-financial objective that helps in achieving social and environmental objectives (Gilbert,1956). CSR initiatives contribute to the enhancement of firm value as they yield long-term benefits to the firm. Firms forgo the short-term profit to invest in social and environmental objectives with no immediate payoff, being socially responsible and focused on the long-term objective, the firms will enjoy profitability in the long run ((Fatemi et al., (2015); Benabou and Tirole (2010; Kane (2002)). On the other hand, the contrary view is that CSR is motivated by the agency theory; managers invest in CSR to gain private benefits. They are not very concerned about shareholder wealth. Masulis and Reza (2015) argue that firm contributions to director-affiliated charities serve to promote CEO interest and may signal the misallocation of corporate resources, ultimately leading to a reduction in firm value.

The other perspective is the stakeholder's theory, which is wider than the shareholder's view. This emphasises the firm relations with the implicit and explicit stakeholders (Donaldson and Peterson (1995); Jones and Wick (1999)). According to Freeman (1984), stakeholders are individuals or entities that possess a claim, ownership, rights or interest in a firm or its activities. In corporate governance literature, the shareholder and stakeholder perspectives are always contested. Are corporate governance mechanisms developed primarily to protect the interests of shareholders or stakeholders? Adams et al. (2011) address this question at the level of board members, and their findings suggest that these controversies can never be resolved, as they are rooted in people's beliefs about their goals in life. Rose (2007) study contends that ethics education has little influence on many business leaders' decisions; their actions are governed by corporate laws rather than personal ethics.

As mentioned, India is the first country to move from a voluntary CSR regime to a mandatory CSR regime. The onus of CSR investment or sustainability is on the board. Otherwise, the board has to specify in its report the reason for not spending the prescribed amount. If a Company fails to comply with the provisions of section 135 of the company's act, 2013 would be liable for penalty and non-compliance<sup>8</sup>. The findings outlined in the report co-published by MIT Sloan Management Review and the Boston Consulting Group indicate that 86% of the survey respondents agreed that the board of directors plays a significant role in driving the organisation's sustainability initiatives<sup>9</sup>. This paper examines

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<sup>8</sup> <https://wirc-icai.org/wirc-reference-manual/part5/corporate-social-responsibility.html>

<sup>9</sup> <https://sloanreview.mit.edu/projects/corporate-sustainability-at-a-crossroads/>

the stakeholder's perspective by exploring the relationship between board compensation and CSR. We posit that as an integral component of the governance structure, the compensation received by board members may influence their actions towards CSR initiatives.

As discussed, the role of the CEO is to perform the business's day-to-day operations and implement and execute the strategic decisions taken in the board meeting. On the counterpart, the board's role is to make strategic decisions that align with the interests of shareholders (in a narrow sense) and stakeholders (in a broader sense). Literature suggests that traditionally, the board's goal is to encourage executives to maximize the firm profitability by aligning executive interest with that of shareholders (Holmstrom, 1979; Jensen & Meckling, 1976). Conyon and Peck, 1998 find that executive pay and corporate performance are more aligned in companies with outsider-dominated boards. However, if the board's objective is to promote ethical and environmentally sustainable conduct among executives, executive compensation can also serve as a means to align executive incentives with CSR. Empirical evidence suggests that greater CSR enhance shareholder value because CSR investment is associated with improved employee and customer goodwill (Perez & Bosque (2015); Soloman & Hansen, 1985) and customer loyalty. In contrast, empirical evidence from previous studies also suggests that CSR is linked to enhanced non-financial performance, such as heightened non-operational efficiencies and superior product quality. Consequently, a firm can be perceived as a nexus of contracts between shareholders and stakeholders. Each stakeholder group contributes vital resources to the firm in exchange for entitlements delineated within explicit contracts (e.g. wage agreements and product warranties) or implied within implicit contracts (e.g. assurance of job security for employees and continued service for customers). Investment in CSR exerts a favourable influence on shareholder value by prioritizing the interests of various stakeholders, thereby bolstering their willingness to support the firm's operations, ultimately enhancing shareholder value. The benefit of a meticulously crafted board incentive program lies in its capacity to provide board members with stronger motivations for diligently overseeing the organization and implementing essential policy adjustments. Within this framework, it is reasonable to anticipate that directors should be incentivized for their efforts and are compensated in a manner that motivates them to make decisions that maximizing shareholder 'wealth (in a narrow sense) in advancing CSR practices (in the broader sense).

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Initially, the research on CSR was more focused towards measures of financial performance. Later, scholars investigate the relationship between CSR and firm risk. The results of these empirical studies show that investors consider the less socially responsible firm to be riskier because they see management skills at the firm as low (Alexander & Bucholtz, 1978). Even the stakeholders may anticipate an increase in firm costs due to a lack of involvement in CSR. Low CSR impacts a firm ability to obtain capital at consistent rates from the market. Investments in employee relations and environmental policies reduce firm cost of capital (Ghoul et al.(2011). Prior literature explored the relationship between CSR, Vega (risk-taking incentives of CEO) of CEO compensation and firm risk. Chakraborty et al. (2019) found that executive risk-taking incentives matter only in low-CSR firms but are ineffective in high-CSR firms. As a firm's CSR status improves (declines), its risk-taking capacity increases (decreases), and the firm responds by adjusting compensation contracts to increase (decrease) CEO risk-taking incentives (Vega) (Dunbar et al., 2019). Increased levels of CSR may exhibit an inverse relationship with firm risk. This inverse association can manifest through reduced probabilities of facing litigation and penalties and establishing positive and stable relations with government bodies and financial communities (McGurie et al., 1998). Consistent with the previous literature, we expect that CSR will reduce the firm's total risk. Further, we investigate whether the results may be masked by heterogeneity among firms. It may be possible that the less risky firms spend more on CSR and, therefore, pay more in terms of board and average director compensation compared to the firms with high total firm risk. The notion behind this is that directors are paid to put their efforts into those tasks that increase firm value and reduce risk.

Our study differs from these studies in that we capture the moderating effect of high-risk and low-risk firms on board compensation and CSR. Therefore, we hypothesise that in low-risk firms, higher board and average director compensation results in higher CSR and vice versa.

*Insert table here*

#### **4. Data, Sample & Methodology**

The final sample of our study consists of 574 non-financial companies listed on the Bombay Stock Exchange (BSE) from 2013 to 2023, with a total of 4,037 firm-year observations. We dropped the following observation during the screening procedure to obtain our final sample. (1) firms that do not have CSR investment data during the given year; (2) firms that do not have CEO compensation or zero compensation during the year; (3) firms

that do not have compensation data of directors in a given year; (4) financial companies because they are governed by different rules and regulation and their financial statements are structured differently which makes cross-firm comparison difficult. Our study's sample is the most comprehensive and most recent in the literature in this area. We classify the industries using a two-digit National Industry Classification (NIC) code. In total, our sample firm consists of 50 two-digit NIC codes. We collected data on Board Compensation from the Prowess CMIE database. Prowess CMIE provides a breakdown of compensation in the following categories: Salary, director sitting fees, contribution to provident fund, bonus, perquisite, retirement benefits, stock options, and other remuneration. The firm's financials, stock prices, and Indices data are also obtained from the Prowess CMIE database. Data on Corporate Social responsibility is obtained from Prime InfoBase, which provides information about the CSR expenditure to be incurred as per the Companies Act 2013, the total amount spent on CSR activities during the year, and the total amount unspent as of year-end. For the purpose of our analysis, we use only the amount spent on CSR activities during the year.

#### **4.1 Variable Construction**

The definitions of variables used in our study are presented in Appendix A. In this section, we discussed some of the important variables that we used in our study.

##### **4.1.1 Outcome Variable**

The Companies Act of 2013 requires the firm to spend two percent of its three-year net profit on CSR activities. Therefore, as a measure of CSR activities, we use the total amount spent on CSR activities during the year by the firm as a variable of interest. We find a considerable variation in the amount spent by firms on CSR activities; therefore, we use the natural logarithm of the total amount spent by firms on CSR activities during the year.

##### **4.1.2 Independent variable**

We measure board compensation in two ways. We have taken the total board compensation and average director compensation as our variable of interest. We compute total board compensation by summing up the components comprising salary, commission, sitting fees, perquisites, retirement benefits and stock options grants, if any. As the firm differs in board sizes, we use a scaled measure in addition to total compensation. (Adam, (2003); Wahab & Rahman (2009); Andreas (2010)). The average director compensation is computed as the total board compensation divided by the number of directors who received compensation in any form during the year. This measure has been previously used by

researchers in their studies (Darmadi (2011); Firth (2006); Andreas (2010)). We use the natural logarithm of total board compensation and average director compensation for our analysis.

### **4.1.3 Control Variables**

Besides board compensation, CSR could be influenced by other factors related to product and capital market. To avoid any spurious relation with the variable of interest, we control all the variables documented in the literature to single out the specific impact of board compensation on CSR.

We include CEO compensation as a control variable in our analysis. Ryan and Wiggins (2004) find that CEO and director compensation are positively related since the same firm characteristics influence both. Brick et al. (2006) also had similar findings. They found a positive association between CEO and director compensation. The measure of corporate governance can affect corporate social responsibility (Jo and Harjoto, (2011). To control for corporate governance, we include the fraction of independent directors and board size as proxy variables. Smith & Watts (1992) find that large firms are complex and demand managers with more equilibrium wages. Therefore, we control for firm size measures as a log of total assets. We also control for firm age (log of firm age) as experienced firms are more inclined towards social cause than younger firms. Accounting-based returns are better predictors of CSR than market return measures; therefore, we employ Return on Assets (EBDITA/ total assets) (McGuire et al., 1988). We also control liquidity (cash in hand/ total assets), leverage (long-term debt/ divided by total assets), and competition. Consistent with the established literature, we use HHI (Herfindhal Hirschman index) as a proxy of competition, which is the sum of the squared percentage of the market share of all the firms (in our sample) in the industry measured each year. A lower (higher) index value indicates a more(less) competitive product market. To explore the moderating effect of the level of competition, we construct the indicator variable High HHI = 1 if HHI>1500 in year t, and 0 otherwise. High-growth firms are complex to manage compared to low-growth firms (Smith & Watts, 1992). We employ the market-to-book ratio as a proxy for growth opportunities. Group companies bear a higher level of CSR than stand-alone companies (Huang et al., 2021). Therefore, we also control for group affiliation (dummy variable set equal to 1 if the firm is affiliated with a business group, otherwise 0).

## **5. Empirical Methodology and Results**

In this section, we discuss the results of our paper. The results are organised into sub-sections.

We start our empirical analysis with a panel data regression by investigating the determinants of CSR investment. We employ the following model for it.

$$\text{Ln (CSR Investment)} = \alpha_1 + \alpha_2(\text{ln total CEO Comp}) + \alpha_i (\text{Controls } j) + \text{Industry Fixed effects} + \text{Time Fixed effects} + \varepsilon \quad (1)$$

Where, Ln (CSR Investment) is the natural logarithm of the total amount spent on CSR during the firm.

In the second step, we examine the relationship between total board and average director compensation and CSR Investment. we estimate the following regression equation.

$$\text{Ln (CSR Investment)} = \alpha_1 + \alpha_2 (\text{ln total board compensation or average director compensation}) + \alpha_i (\text{Controls } j) + \text{Industry Fixed effects} + \text{Time Fixed effects} + \varepsilon \quad (2)$$

We further analyse the above regression specification in the light that it may be possible that firms that pay more in terms of director compensation are those that invest more in CSR. Henceforth, to explore this moderating effect, we divide our sample into two sub-samples based on the median values of average director compensation.

In the next step, we address the heterogeneity that exists among firms, as our sample consists of firms from 50 Industry groups classified based on NIC codes. It may be possible that firms operating in different environments may behave differently. To address this possibility, we re-examine the above relationship, as firms with high growth opportunities may spend more on CSR activities; likewise, firms operating in highly (low) competitive markets spend differently on CSR activities. Therefore, to explore the moderating effect of high-growth and low-growth firms and firms operating in high(low) product market competition, we divide our sample into two sub-samples based on the median values of market-to-book ratio for growth opportunities sub-sample and for product market competition, we divide the sample based on HHI index values.

We then examine how CSR Investment impacts a firm total risk. Our primary measure of firm total risk is the annualized standard of monthly stock returns as our sample consists of firms listed on the Bombay Stock Exchange. This measure is commonly used in prior literature (e.g. Cain and McKeon, 2016). To examine the impact, we estimate the following regression equation.

$$ASV = \alpha_1 + \alpha_2 (\ln \text{ CSR Investment})_t + \alpha_i (\text{Controls } j)_t + \text{Industry Fixed effects} + \text{Time Fixed effects} + \varepsilon \quad (3)$$

Finally, we address endogeneity issues due to simultaneity, reverse causality and omitted variables between board compensation and CSR. It may be possible that board compensation affects CSR or CSR affects board compensation. we use firm fixed effects and lagged values of independent variables to address this concern. We use a two-stage least square regression and dynamic system GMM methods to alleviate the concern.

## 5.1 Descriptive Statistics

Table 1 reports the summary statistics for our sample of firms. we report the mean, median, standard deviation, minimum and maximum. We find a considerable variation in total board compensation and average director compensation in our sample. Panel A reports the compensation components; on average, in our sample, the director receives ₹31.05 million as a salary. The median is ₹17.12, and the maximum is ₹770 million. The average director compensation in our sample is ₹7 million, with a standard deviation of 13 million. We find a similar variation in total board compensation. the mean board compensation in our sample is ₹62 million, the median is ₹24 million and a standard deviation of ₹140 million. An average firm in our sample spends ₹158 million on CSR, with a median of 18 million and a standard deviation of 639 million. We find that total board compensation, average director compensation and CSR Investment in our sample are skewed, suggesting that some firms in our sample pay extraordinarily large in terms of total board compensation and average director compensation, and this is true with the CSR expenditure, some firms spend a large amount on CSR activities in comparison to the other. We, therefore, use the natural logarithm of compensation (total board and average director) and CSR spending in our regression analysis.

Panel B indicates the descriptive statistics of governance variables. Our sample exhibits an average board size of 9 directors with a minimum of 4 and a maximum of 18 directors. Our sample firms have 56 percent independent directors and 25 percent executive directors. The average firm in our sample is 49 years old, and the oldest firm is of 160 years. As the firms are much older in our sample, that is why they are less levered, as older firms may have had more time to build financial stability and generate retained earnings, which could reduce their reliance on debt financing

*Insert Table No. 1*

## **5.2 Pairwise Correlation and test of multi-collinearity**

Table 2 reports a pairwise correlation between the key variables used in our study. The simple correlation between board compensation and CSR is positively significant. Board compensation is negatively correlated with an annualized volatility of monthly stock returns, that is firms with higher compensation are less volatile. CSR is positively correlated with ROA, Board size, firm age, firm size, market-to-book ratio, and competition. Board compensation is significantly correlated with the CEO i.e. the skills, and effort that is required to monitor the firm are similar for both Director and CEO. There is a positive correlation between market-to-book, board compensation and CSR, this reveals that higher market-to-book firms pay more to their directors and invest more in CSR. Board compensation and CEO compensation are negatively correlated with annualized standard volatility of monthly stock return i.e., a measure of total firm risk in our sample. That means firms that pay more in terms of compensation to their directors and CEO are less volatile. In summary, the results of the Pearson pairwise correlation matrix show that board compensation is positively correlated with corporate social responsibility and negatively correlated with firm risk. Other firm characteristics and governance variables that have been documented to impact board compensation also have a significant relationship with CSR. In the next section, we proceed to examine the incremental effect of board compensation on CSR.

To check the multi-collinearity in our variables, we ran the variance inflation factor(VIF). We did not find any multi-collinearity between our variables. The mean value of VIF is 1.8.

*Insert Table No.2*

## **5.3 Determinants of Corporate Social Responsibility**

As stated, we start our empirical study by examining the determinants of CSR investment. We investigate whether the determinants of CSR investments are related to publically available firm characteristics, including governance variables (proportion of independent directors and board size). The dependent variable is the natural logarithm of the total amount spent on CSR activities by the firm during the year. The independent variable includes the natural logarithm of CEO compensation. Firms with better finances invest more in CSR (Cochran and Wood (1984)). Large firms have more complex environments, and therefore, they need more talented managers; henceforth, they receive large compensation. Some of these variables are discussed earlier. In the results of Table 3, we find the coefficients of the natural logarithm of CEO compensation, ROA, and firm size to be positive and significant at a 1% level. Our results suggest that large firms with higher profitability and higher CEO compensation invest more in CSR activities. The results are consistent with the stakeholder

perspective. The coefficient of the market-to-book ratio is also significant at the 10% level. This shows that high-growth firms are also inclined to invest more in CSR. Contrarily, the sign of the coefficient of leverage and group affiliation is negative and significant at 1 and 5% levels, respectively. That may be because the majority of the cash flows of the firms went to pay the debt. we use industry and year-fixed effects, and robust standard errors are clustered at the firm level.

*Insert Table No. 3*

#### **5.4 Board Compensation and CSR**

In the next step, we examine the impact of board compensation on CSR and we estimate the following regression equation:

$$\ln(CSR) = a_1 + a_2 (\ln \text{ total board compensation or average director compensation}) + a_i (X_j)_t + \text{Industry Fixed effects} + \text{Time Fixed effects} + \varepsilon$$

Where  $X_j$  is the vector of the control variables. The aggregate amount spent by the firm on CSR is used as the dependent variable. The variable of interest is the natural logarithm of total board and average director compensation. We use industry and year-fixed effects in all our regression, and robust standard errors are clustered at the firm level. All the variables are winsorised at a 1% level.

Besides the board compensation's influence, CSR is likely to be influenced by firm-level, product-related, and competition-related factors. We control for these external factors to avoid any spurious relationship with the variable of interest and to single out the specific impact of board compensation on CSR by including them as a control variable. Withisuphakorn (2015) find that more mature firms invest significantly more in CSR; as firms get older, they become much more responsible. Therefore, we use the natural logarithm of firm age as a proxy to control for the life cycle effect. Firm age is defined as the number of years of firm existence since incorporation. We employ a market-to-book ratio of equity as a proxy of growth opportunities. (Kilic et al (2015)).

Well-governed firms are more likely to offer CSR-contingent compensation (Ikram et al., 2023), and another view is that firms are increasingly moving towards stakeholders' perspective of corporate governance (Freeman, 1984). There is some evidence that governance variables play a role in setting executive compensation (Conyon, 1997). We employ three measures of corporate governance: Board size, proportion of independent directors and CEO compensation. Firms with large board sizes are more likely to engage in

CSR (Giannarakis (2014)). Board independence is defined as the proportion of independent directors on the board. Board size is the number of directors (both executive and non-executive directors) on the board. Ln CEO compensation is the natural logarithm of the total remuneration paid to the CEO. Liquidity is measured by dividing cash and cash equivalent to total assets. Consistent with the literature, we compute the Herfindahl Hirschman Index (HHI), which is the sum of the square percentage market share of all firms in the industry measured each year.

Table 4 reports the results of panel regression of board compensation and CSR. The dependent variable in column (1) is the natural logarithm of the aggregate amount of CSR investment. The variable of interest is the natural logarithm of total board compensation in column (1) and average director compensation in column (2). The estimated coefficient of the log of total board compensation and average director compensation is positive and significant at a 1% level, which suggests that board compensation is positively associated with CSR investment. The coefficient of the natural logarithm of total board compensation and average director are 0.0733 and 0.0714, respectively; this shows that a 1% increase in total board or average director compensation increases CSR investment by 7.33%. These results suggest that board compensation impacts firm CSR investment after controlling for CEO compensation, governance variables and other firm characteristics. In column (2), we also find similar results for average director compensation. Overall, our results support our hypothesis that higher board or average director compensation leads to higher CSR investment.

*Insert Table 4*

#### **5.4.1 High and Low compensation sub-sample**

In this sub-section, we investigate whether or not the results documented so far are concentrated mainly in high-compensation firms. As specified, firms in our sample exhibit considerable variation in terms of board compensation. It is likely possible that a positive relation between board compensation and CSR is when the director compensation is above a certain threshold. Therefore, we divide our sample into two sub-samples based on average director compensation by setting the cut-off at the median values and replicating our baseline regression relating to board compensation and CSR. The results are reported in Table 5.

The coefficient of the natural logarithm of total board compensation in columns (1) is statistically significant at a 1% level, respectively. In column (1), the coefficient of the natural logarithm of total board compensation is 0.114, which indicates that in high-compensation firms, a 1 % increase in aggregate board compensation increases CSR investment by 11.4%.

Turning on to column (2), the coefficients are negative and insignificant. This shows that board compensation does not impact CSR investment in low-compensation firms. Overall, our results suggest that the relationship between board compensation and CSR is profound when the director's compensation is above a threshold.

*Insert Table No. 5*

### **5.5 Moderating Effect of Product Market Competition and Growth Opportunities on CSR Investment**

We expect board compensation to positively affect CSR in all firms due to mandatory CSR legal compliance. We expect the association to be stronger when growth opportunities are more. Therefore, we hypothesise that firms with more growth opportunities pay more in terms of board compensation, resulting in improved CSR investment. In contrast, low growth opportunities didn't incentivise the board to invest in CSR.

Table 6 reports the results of growth opportunities, board compensation and CSR. To explore the moderating effect of growth opportunities. We take the market-to-book ratio as a proxy of growth opportunities. we divide our sample into two sub-samples (high and low-growth firms) based on median values of the market to book. Firms above the median are assigned a value of 1, otherwise 0. The variable of interest in columns (1) and (2) is the natural logarithm of total board compensation, and columns (3) and (4) represent the natural logarithm of average director compensation. In columns (1) - (4), we regress the natural logarithm of CSR on total board and average director compensation. The coefficients of column (1) are positive and significant at a 1% level, and the magnitude is also higher than that of low-growth opportunities firms. These results indicate that the relationship between total board and average director compensation and CSR is more profound in high-growth firms. The coefficient of column (1) is 0.0813, which indicates that a 1% increase in board compensation increases CSR by 8.13% in high-growth firms. The coefficients of column (2) are significant at a 5% level. These results indicate an increase of 1% in aggregate board compensation in low-compensation firms, which translates to only a 6.89 % increase in CSR investment. Overall, our results highlight the fact that board and average director compensation improves CSR investment in both high- and low-growth opportunities, but board incentives work well in high-growth firms compared to low-growth firms. The argument behind this is that to sustain growth opportunities, board incentives are designed in such a way that motivates the board to invest more in CSR. On the contrary, low-growth

opportunities firms didn't provide boards adequate incentive to build strategies to invest in CSR, these firms invest in CSR to meet the legal mandatory compliance.

*Insert Table No.6*

Table 7 reports the results of product market competition, board compensation and CSR. The directors' incentives are designed differently for firms operating in a high and low-competitive environment. Francoeur et al (2015) find that compensation practices differ significantly among different industries. Companies use CSR as a competitive strategy to differentiate themselves from their rivals (Flammer, 2014). We expect the boards' compensation to be positively related to CSR in all the firms operating in high and low-competitive environments, but the relationship may be more profound in the firms facing low-growth opportunities. The argument behind this is that lack of competitive pressure in the product market competition fails to enforce discipline on managers; therefore, to enforce discipline on managers and align their interests with the stakeholder perspective, their compensation could make a difference. Therefore, to explore the moderating effect of board compensation on CSR we divide our sample into two samples (firms operating in high product market competition and low product market competition) based on the HHI Index value.

*Insert Table No. 7*

## **5.6 Corporate Social Responsibility and Firm Risk**

A large growing body of literature on CSR and firm risk suggests that CSR reduces firm risk. The majority of the findings of these studies are from the US (Jo and Na (2012).Nguyen and Nguyen (2015). Table 8 reports the results of corporate social responsibility and total firm risk. The dependent variable is the annualized standard volatility of monthly stock returns. This variable has also been used in prior studies (Cain & McKeon, 2016). The variable of interest is the natural logarithm of CSR. We control CEO compensation, the board size, the proportion of independent directors, leverage, firm size, firm age, HHI, and group affiliation. Table 8 reports the results of the panel regression. The coefficient of CSR is negative and significant at the 1% level. This indicates that a 1% increase in CSR investment decreases the total firm risk by 19.87 %. These results are consistent with the notion that firms that invest more in CSR are less risky than their counterpart. Focusing on the coefficient of other variables, we found that CEO compensation, firm age, market to book and HHI coefficients are negative and significant. This indicates that firms that pay more to their CEO, older firms, and high-growth firms are less risky.

*Insert Table No.8*

### **5.6.1 Firm Risk, Board Compensation and Corporate Social Responsibility,**

It may be possible that board compensation could influence CSR differently in high and low-risk firms. We expect board compensation could positively influence CSR in all types of firms, whether high-risk or low-risk. However, board compensation could influence CSR differently in both types of firms. To explore the moderating effect of high and low firm risk on board compensation and CSR, we divide our sample into two sub-samples based on the median values of annualized stock volatility of monthly stock returns (ASV). Firms with high total risk are assigned the value of 1; otherwise, 0. In table 9, the dependent variable is the natural logarithm of CSR in all the columns (1) -(4). The natural logarithm of total board compensation and average director compensation are reported in columns (1) -(2) and (3) -(4), respectively. The coefficients of columns (2) and (4) are positive and significant at a 1 % level. This indicates that a 1 % increase in board compensation increases CSR by 10.5% in low-risk firms. The coefficients of columns (1) and (3) are also positive and significant at a 5% level. These results indicated that board compensation influences CSR activities in both high and low-risk firms. However, the impact of board compensation is higher in low-risk firms. The notion behind this is that higher board compensation reduces the firm risk by investing more in CSR activities. These results are consistent with the stakeholder's perspective.

*Insert Table No. 9*

### **5.7 Endogeneity Concern**

The relationship between board compensation and CSR may be induced by some endogeneity that exists between variables. It may be possible that a firm with a strong CSR culture may attract directors who are more inclined to support CSR initiatives, leading to higher board compensation. Conversely, higher board compensation may incentivize directors to advocate for greater CSR efforts. However, we cannot completely rule out the possibility that might drive the results, i.e., the positive relation between board compensations and CSR driven by some unobserved time variable omitted variables or by the heterogeneity that exists among firms. So to mitigate the potential issues related to reverse- -causality, simultaneity and omitted variable bias. we used firm and year fixed effect and lagged variable regression. In addition, we employ a dynamic panel model using the GMM system approach.

The instruments that we used to model the board and average director compensation are average director sales, beta and log of firm size. Literature examines that the greater the efforts of the directors required, the more compensation they should receive. The assumption is based on simple economic logic: in the tight labour market, if the firm doesn't compensate

their directors well, then it becomes difficult for them to attract and retain talented directors. Hempel and Fay (1994) find that firms' sales significantly explain director compensation. Therefore, we take average director sales as our first instrumental variable. The characteristics and qualities needed for board members are similar to those of executives. Extensive literature on executive compensation and risk-taking suggests that executive compensation is linked to firm risk. Gomez-Mejia et al. (2003) find that executive pay tends to be more enclosed with systematic risk. Therefore, we employ systematic risk, i.e., beta, as a second instrument. Large firms are more complex to manage and empirical literature on executive compensation contends that firm size is one of the important determinants of executive compensation. Therefore, we also employ a log of total assets to measure firm size. The next sub-section discusses firm fixed effects and lagged variable regression results.

### **5.7.1 Results of firm fixed effects and lagged variable Regression**

The results of firm fixed effects and lagged variable regression are reported in Table 10. The dependent variable is the natural logarithm of corporate social responsibility. The variable of interest is the lagged one-year natural logarithm of total board and average director compensation in columns (1) and (2). All the control variables are lagged by one year. We use firm-fixed effects and year-fixed effects. the coefficient of log of total board and average director compensation in columns (1) and (2) are statistically significant at a 1% level. These results are similar to that of Table 4.

*Insert Table No. 10*

### **5.7.2 Instrumental variable regression results (Dynamic Panel models using GMM)**

Tables 11 and 12 show the results of the dynamic panel model using the system GMM approach. This method allows us to control for the potential endogeneity problem caused by the endogenous variable and time-invariant unobserved effect in our panel data. Average director sales, beta and log of firm size log are the instruments we used to model director compensation. We conducted a series of diagnostic tests to assess the validity and strength of our instruments. The results are promising, indicating the presence of strong instruments for our endogenous variable. The results of the under-identification test, employing the kleibergen –Paap rk LM statistics, yielded a statistically significant result (p-value<0.001), affirming that we have an adequate number of valid instruments for parameter identification. Moreover, the Cragg-Donald Wald F-statistics also provide significant (p-values<0.001), showing our instruments' collective strength and ability to explain the endogeneity in our model. The over-identification test, such as Kleibergen –Paap rk, Wald F statistics and

Hansen J statistics, consistently indicated that our instruments are valid and collectively reliable for estimating endogenous variables. These results provide confidence in our IV regression approach's robustness and support our findings' validity.

The results of Table 11 are similar to Table 4. The coefficients of predicted values of the natural logarithm of total board and average director compensation are positive and significant at 1%. This confirms that even after addressing endogeneity concerns, the total compensation of the board and director significantly impacts CSR. Looking at the other variables, the natural logarithm of CEO compensation is not significant. However, the coefficient of ROA, firm size, firm age and market-to-book ratio are statistically significant at the 1% level. These results indicate that old large firms that are profitable and have high growth opportunities spend more on CSR.

*Insert Table No. 11*

In Table 12, we use the one-year lagged values of the instrumented variable, i.e., board and average director compensation and control variables. The results are similar to that of Table 4. The board and director compensation coefficients are significant and positive at a 1% level. The results of all other control variables are similar. If we look at the lagged values of independent directors, they are negative and significant at a 1% level; this shows that firms with large independent directors are not likely to spend much on CSR activities. The coefficients of group affiliation are also negative and significant; this shows that group-affiliated firms are less likely to invest in CSR. The reason may be attributed to the tunnelling effect; firms use their proceeds to fund the group firms, and that's why they are less likely to fund CSR activities. Overall, our results are robust and significant with alternative econometric methodology.

*Insert Table No. 12*

## **6. Conclusion and Implication of the study**

In this paper, we examine the impact of firm CSR investment on total board and average director compensation using a large sample of Indian firms listed on the Bombay Stock Exchange from 2013 to 2023. After controlling for CEO compensation and other firm and governance-related variables, we find that board compensation is one of the important determinants of CSR. We also find that in a high-compensation firm, the effect is more profound than in a low-compensation firm. In emerging markets like India, where CSR investment is mandatory for firms, we expect the board compensation to be positively related

to all types of firms. So, to capture the moderating effect of growth opportunities, competition and high and low-risk firms on board compensation and CSR, we divide our sample into high and low groups. Our analysis reveals that although the relationship is positive in high and low sub-samples, the magnitude of the coefficient of the board and average director compensation is high in high-growth firms, as well as firms with low product market competition and low risk. Consistent with the previous literature, we also analyse whether CSR investment lowers firm risk in emerging markets like India, where investment in CSR is a legal requirement. We find that investment in CSR reduces total firm risk. These results are consistent with the previous literature. We also employ alternate econometric methodology to address potential endogeneity issues. We use firm and time-fixed effects with lagged variable regression and a 2SLS IV GMM approach. Our results hold up well even after employing these alternate methodologies. Overall, we find significant evidence that board compensation could significantly impact CSR investment. These findings are consistent with the stakeholders and sustainability theory. If a firm wants to stay in the market for the long run, then it must compensate its board well. Increased compensation of the board translates or serves the purpose of the stakeholder's community, which ultimately results in improved and sustainable long-run firm performance and also serves the shareholder's theory.

Our study results show that high board compensation firms significantly impact CSR investment. These results are in line with the stakeholder theory. These results can serve as evidence to policymakers, stakeholders, shareholders and firms about the role of the well-designed board incentive scheme, which aligns with the shareholder interest and encourages the board of the firms to take the actions and decisions that serve the society at large.

## References

- Al-Shammari, M.A., Banerjee, S., Shah, T.R., Doty, H. & Al-Shammari, H. (2023). The value of expertise: how chief executive officer and board corporate social responsibility expertise enhance the financial effects of firms' corporate social responsibility initiatives", *Society and Business Review*, Vol. 18 (1), 1-27. <https://doi.org/10.1108/SBR-10-2021-0183>
- Alexander. D.L., & Zhou. H. (1995). Product market competition and executive compensation. *Journal of Economics and Business*, 47(5), 441–456.
- Jones, T. & A. Wicks. (1999). Convergent Stakeholder Theory. *Academy of Management Review*, 24(2), 208–221.
- Adams. R.B., Licht. A.N., & Sagiv. L. (2011). Shareholders and stakeholders: How do director decide?. *Strategic Management Journal*, 32,1311-1355.
- Alexander, G., & Bucholtz, R.(1978). Corporate social responsibility and stock market performance. *Academy of Management Journal*, 21, 479-486.
- Andreas, J. M., Rapp, M. S., & Wolff, M. (2010). Determinants of director compensation in two-tier systems: evidence from German panel data. *Review of Managerial Science*, 6(1), 33–79. doi:10.1007/s11846-010-0048-z
- Bebchuk, Lucian A., & Fried. J.M. (2003). Executive Compensation as an Agency Problem. *Journal of Economic Perspectives*, 17 (3) 71-92.
- Benabou. R., & Tirole. J. (2010). Individuals and corporate social responsibility. *Economica*. 77(305), 1–19.

- Berrone P., & Gomez-mejia L.R., (2009). Environmental performance and executive compensation: an integrated agency-institutional perspective. *Academy of Management Journal*, 52, 103-126
- Brick, I.E., O. Palmon, & Wald, J.K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance*, 12 (3), 403–423.
- Chakraborty, A., Gao, L. S., & Sheikh, S. (2018). Managerial risk-taking incentives, corporate social responsibility and firm risk. *Journal of Economics and Business*. doi:10.1016/j.jeconbus.2018.07.004
- Cain, M & McKeon, S. (2016). CEO Personal Risk-taking and Corporate Policies. *Journal of Financial and Quantitative Analysis*, 51 (1), 139–164.
- Cochran, P.L., & Wood, R.A. (1984). Corporate Social Responsibility and Financial Performance. *Academy of Management Journal*, 27, 42-56
- Conyon, M. & Peck., S. (1998). Board Control, Remuneration Committees, and Top Management Compensation. *Academy of Management Journal*, 41(2), 146-157.
- Conyon, M. J. (1997). Corporate governance and executive compensation. *International Journal of Industrial Organization*, 15(4), 493–509. doi:10.1016/s0167-7187(96)01032-6
- Darmadi, Salim, Board Compensation, Corporate Governance, and Firm Performance in Indonesia(August9,2011).AvailableatSSRN: <https://ssrn.com/abstract=1907103> or <http://dx.doi.org/10.2139/ssrn.1907103>
- Donaldson, T. & Preston, L. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *Academy of Management Review*, 20(1), 65–91.
- Dunbar, C. G., Li, Z. F., & Shi, Y. (2019). Corporate Social Responsibility and CEO Risk-Taking Incentives. *Journal of Corporate Finance*, Vol. 64, No. 101714,2020, Available at SSRN: <https://ssrn.com/abstract=2828267> or <http://dx.doi.org/10.2139/ssrn.2828267>
- Elsayed, N. & Elbardan, H. (2018). Investigating the associations between executive compensation and firm performance: Agency theory or tournament theory. *Journal of Applied Accounting Research*. 19(2), 245-270. <https://doi.org/10.1108/JAAR-03-2015-0027>
- Fatemi, A., Fooladi,I., & Tehranian, H., (2015). Valuation effect of Corporate Social Responsibility. *Journal of Banking and Finance*, 59, 182-192.
- Firth, M., Fung, P. M. Y., & Rui, O. M. (2006). Corporate performance and CEO compensation in China. *Journal of Corporate Finance*, 12(4), 693–714.
- Flammer, C. (2015). Does Product Market Competition Fostered Corporate Social Responsibility? Evidence from Trade Liberalization. *Strategic Management Journal*, 36. 1469-1485

- Flammer, C. (2019). Corporate governance and the rise of integrating corporate social responsibility criteria in executive compensation: Effectiveness and implications of firm outcome. *Strategic Management Journal*, 40(7), 1097-1122
- Francoeur, C., Melis, A., Gaia, S. (2017) Green or Greed? An Alternative Look at CEO Compensation and Corporate Environmental Commitment. *J Bus Ethics* 140, 439–453. <https://doi.org/10.1007/s10551-015-2674-5>
- Feng, M., Wang, X. & Kreuze, J.G. (2017). Corporate social responsibility and firm financial performance: Comparison analyses across industries and CSR categories *American Journal of Business*, 32 (3-4), 106-133. <https://doi.org/10.1108/AJB-05-2016-0015>
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Marshall, MA Pitman.
- Gao, L., Sheikh, S. & Zhou, H. (2022). Executive compensation linked to corporate social responsibility and firm risk. *International Journal of Managerial Finance*, Emerald Group Publishing Limited, 19(2), 269–290.
- Ghoul, S.E., Guedhami, O., Kwok, C.C.Y., Mishra, D.R. (2011). Does Corporate Social responsibility affect the cost of capital? *Journal of Banking & Finance*. 35(9), 2388–2406. <https://doi.org/10.1016/j.jbankfin.2011.02.007>
- Giannarakis, G. (2014). The determinants influencing the extent of CSR disclosure. *International Journal of Law and Management*, 56(5) 393-416. <https://doi.org/10.1108/IJLMA-05-2013-0021>
- Gilbert, L.: 1956, *Dividends and Democracy* (American Research Council, Larchmont, NY).
- Gomez-Mejia, L. R., Larraza-Kintana, M., & Makri, M. (2003). The Determinants of Executive Compensation in Family-Controlled Public Corporations. *Academy of Management Journal*, 46(2), 226–237. doi:10.5465/30040616
- Hempel, P., & Fay, C. (1994). Outside director compensation and firm performance. *Human Resource Management*, 33(1), 111–133. doi:10.1002/hrm.3930330107
- Harjoto, M., Laksmana, I. & Lee, R., (2015). Board Diversity and Corporate Social Responsibility. *J Bus Ethics*, 132, 641–660. <https://doi.org/10.1007/s10551-014-2343-0>
- Holmstrom, B., (1979). Moral Hazard and Observability. *Bell Journal of Economics* 10, 74-91
- Huang X, Jiang X, Liu W, & Chen Q., (2010). Business Group-Affiliation and Corporate Social Responsibility: Evidence from Listed Companies in China. *Sustainability*. 13(4). <https://doi.org/10.3390/su13042110>
- Ikram, A., Li, Z. F., & Minor, D. (2019). CSR-contingent executive compensation contracts. *Journal of Banking & Finance*, 105655. doi:10.1016/j.jbankfin.2019.105655
- Jane, E. J., (2002). Using Deferred Compensation to Strengthen the Ethics of Financial Regulation. *Journal of Banking & Finance* 26, 1919-1933.

- Jian, M., & Lee, K-W. (2015). CEO compensation and Corporate Social Responsibility. *Journal of Multinational Financial Management*, 29, 46-65.
- Jensen, M. & Meclding., W.(1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics* 3, 305-360.
- Jo, H., & Harjoto, M.A. (2011). Corporate Governance and Firm Value: The Impact of Corporate Social Responsibility. *J Bus Ethics* 103, 351–383. <https://doi.org/10.1007/s10551-011-0869-y>
- Jo, H., & Na, H. (2012). Does CSR Reduce Firm Risk? Evidence from Controversial Industry Sectors. *J Bus Ethics* 110, 441–45. <https://doi.org/10.1007/s10551-012-1492-2>
- Kane, E. J., (2002). Using Deferred Compensation to Strengthen the Ethics of Financial Regulation. *Journal of Banking and Finance*,26, 1919-1933.
- Karim.k.,Lee. E., & Suh. S., (2018) Corporate Social Responsibility and CEO compensation strucutre. *Advance in Accounting*, 40, 27–41.
- Kiliç, M., Kuzey, C. & Uyar, A., (2015). The impact of ownership and board structure on Corporate Social Responsibility (CSR) reporting in the Turkish banking industry. *Corporate Governance*, 15 (3), 357-374. <https://doi.org/10.1108/CG-02-2014-0022>
- Masulis.R.W., & Reza. S.W. (2015). Agency problem of corporate philanthropy. *The Review of Financial Studies*. 28(2), 592-636.
- McGurie. J.B., Sundgren.A., & Schneeweis. T., (1988). Corporate Social Responsibility and firm Financail Performace. *The Academy of Management Journal*. 31(4). 854-872
- Nguyen, P. and Nguyen, A. (2015). The effect of corporate social responsibility on firm risk,11(2), 324-339. <https://doi.org/10.1108/SRJ-08-2013-0093>
- Pérez, A., Rodríguez del Bosque, I. (2015). An Integrative Framework to Understand How CSR Affects Customer Loyalty through Identification, Emotions and Satisfaction. *J Bus Ethics*, 129, 571–584. <https://doi.org/10.1007/s10551-014-2177-9>
- Rao, K., Tilt, C.,(2016) Board Composition and Corporate Social Responsibility: The Role of Diversity, Gender, Strategy and Decision Making. *J Bus Ethics*, 138, 327–347. <https://doi.org/10.1007/s10551-015-2613-5>
- Rose, J.M., (2007). Corporate Directors and Social Responsibility: Ethics versus Shareholder Value. *J Bus Ethics*, 73, 319–331. <https://doi.org/10.1007/s10551-006-9209-z>
- Ryan, H. E., & Wiggins, R. A. (2004). Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. *Journal of Financial Economics*, 73(3), 497–524. doi:10.1016/j.jfineco.2003.11.002
- Solomon, R. C., (1997). It's good business: ethics and free enterprise for the New Millenium. Rowman & Littlefield.

Singla. C., Veliyath. R., & George.R. (2014). Family firm and Internalization- Governance relationship: Evidence of secondary agency issues. *Strategic Management Journal*. 35. 606–616.

Smith CW, Jr., & Watts R.L (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*,32, 263–263.

Spicer, B. H. (1978). Investors, corporate social performance, and information disclosure: An empirical study. *Accounting Review*, 53, 94-111.

Wahab, E. A. A., & Rahman, R. A. (Eds.). (2009). Institutional Investor and director remuneration: Do political connections matter? *Advances in Financial Economics*. 13, 139-169. doi:10.1108/s1569-3732(2009)0000013008

Withisuphakorn, P., & Jiraporn, P. (2015). The effect of firm maturity on corporate social responsibility (CSR): do older firms invest more in CSR? *Applied Economics Letters*, 23(4), 298–301. doi:10.1080/13504851.2015.1071464

## Appendix -A

Variable	Description	Source/Computation
<b>Dependent Variable</b>		
Corporate Social Responsibility	Actual Amount spent by the firm during the year.	Prime InfoBase
Annual Stock Volatility	Annualized standard deviation of monthly stock returns	Prowess/ Author Computation
ROA	Profit before depreciation, interest, tax and amortisation (PBDITA) divided by Total Assets	Prowess/Author Computation
Tobin's Q	Market value of equity + Book value of preferred debt+ net current assets+ long-term debt/ Total Assets	Prowess/Author Computation
Total Board Compensation	Total Board Awards for the period in any form (excluding CEO compensation) = salary + Director sitting fees+ Contribution to provident fund + Bonus + Perquisite + Retirement Benefits + stock options + Other Remuneration	Prowess/ Author Computation
Average Director Compensation	Total Board Awards during the year divided by number of directors excluding CEO compensation	Prowess/Author Computation
Firm Size	Natural Logarithm of Book value of total Assets	Prowess

Firm Age	Number of years of firm existence since Incorporation	Prowess/ Author Computation
Market to Book ratio	Market value of equity divided by book value of equity	Prowess/ Author Computation
Leverage	Long term debt divided by total Assets	Prowess/Author Computation
Liquidity	Cash in hand divided by total assets	Prowess/ Author Computation
HHI	Herfindhal Hirschman index is calculated as the sum of squared percentage market share (sales) of all firm in each industry measured each year.	Prowess/ Author Computation
Board Size	Total number of directors in a board in a given year	Prowess
Proportion of Executive directors	Number of executive directors divided by board size	Prowess/ Author Computation
Percentage independent directors	Number of independent directors divided by board size	Prowess/ Author Computation

**Table 1: Descriptive Statistics**

This table reports the descriptive statistics used in our study. In this table we report, mean, median, standard deviation, minimum and maximum. The definitions of all variables are presented in Appendix A. We use industry and year-fixed effects. All the variables are winsorized at 1%. Standard errors are clustered at the firm level. The t statistics are reported in parentheses.

Variable	Mean	Median	Std. Dev.	Min	Max	
<b>Panel A : Compensation Components</b>						
Salary	31.05	17.12	43.43	0.001	770.10	
Director Sitting Fees	2.58	1.53	8.58	0.012	480.50	
PF Contribution	2.98	1.55	5.57	0.001	116.30	
Bonus	44.37	12.59	126.24	0.004	4203.00	
Perquisite	9.05	2.14	26.25	0.002	535.90	
Retirement Benefits	10.35	2.25	56.01	0.005	859.60	
Stock Options	27.02	6.12	60.01	0.001	479.80	
Other Remuneration	15.18	2.02	92.48	0.002	1492.00	
Total Board Compensation	62.20	24.61	140.01	0.013	4981.00	
Average Director Compensation	6.96	3.23	13.20	0.002	452.80	
<b>Panel B: Dependent Variable</b>						
CSR Investment	157.94	18.10	638.74	0.100	16717.20	
Annualized Stock Volatility	41.40	37.91	17.73	14.508	102.80	
<b>Panel B: Governance Variables</b>						
CEO total Compensation	51.94	23.91	90.00	0.033	1348.00	
Board Size	9.21	9.00	3.00	4.000	18.00	
Percent Independent Director	0.56	0.57	0.12	0.250	0.85	
Percent Executive Director	0.25	0.22	0.12	0.077	0.56	

<b>Panel C: Firm Financials/Control Variables</b>						
Firm Age	49.14	41.00	21.83	16.000	160.00	
Firm Size	124934.70	18805.40	493651.60	156.400	9721190.00	
Leverage	0.09	0.05	0.10	0.000	0.71	
Liquidity	0.00	0.00	0.00	0.000	0.01	
Market to Book ratio	3.31	1.96	4.03	0.076	24.17	
HHI	2399.00	1624.38	2161.29	555.403	10000.00	
Group Affiliation	0.50	1.00	0.50	0.000	1.00	

**Table 2: Pairwise Correlation Matrix**

This table presents pairwise correlation between the key variables used in the paper. Our sample covers 574 non-financial firms listed on the Bombay Stock Exchange (BSE) with annual data of 9 years from 2014 to 2023. The definitions of all variables are presented in Appendix A. The dataset has been winsorised at the 1% tail. The asterisk superscripts \*\*\*, \*\*, \* represent significance at 1%, 5% and 10% levels respectively.

Variables	CSR	ASV	TBR	CEO Comp.	Board size	% Ind.Dir.	ROA	Firmage	Leverage	Liquidity	Firmsize	MB	HHI	VIF
CSR	1													
ASV	-0.390***	1												1.2
TBR	0.541***	-0.248***	1											2.07
CEOComp.	0.467***	-0.252***	0.602***	1										2.05
Boardsize	0.488***	-0.167***	0.429***	0.175***	1									1.64
%Ind.Dir	-0.206***	0.099***	-0.081***	0.128***	-0.329***	1								1.27
ROA	0.209***	-0.119***	0.191***	0.233***	0.061***	0	1							1.41
Firmage	0.128***	-0.123***	0.091***	0.099***	0.099***	-0.030*	-0.084***	1						1.11
Leverage	0.040**	0.109***	0.006	-0.009	0.090***	-0.031*	-0.219***	-0.014	1					1.15
Liquidity	-0.043**	-0.024	-0.031*	0.034*	-0.050***	0.047***	0.049***	0.044***	-0.054***	1				1.03
Firmsize	0.824***	-0.293***	0.514***	0.421***	0.527***	-0.226***	-0.057***	0.141***	0.228***	-0.070***	1			2.4
MB	0.214***	-0.228***	0.179***	0.267***	0.057***	-0.030*	0.423***	0.061***	-0.148***	0.048***	0.089***	1		1.3
HHI	0.081***	-0.044**	-0.035**	-0.064***	0.079***	-0.075***	-0.012	-0.131***	0.095***	0.042**	0.114***	0.001	1	1.06
*** $p < 0.01$ , ** $p < 0.05$ , * $p < 0.1$														

**Table 3: Determinants of Corporate Social Responsibility**

In this table, we model determinants of Corporate Social Responsibility Investment. The dependent variable is the CSR Investment in column (1). The independent variable includes the natural logarithm of CEO compensation, ROA (EBITDA/Total Assets), Tobin's Q, Board Size (Number of directors on the board), the proportion of independent directors (Number of Independent directors/Board Size), Firm Age (years elapsed since the incorporation), Firm size (natural logarithm of total assets), Market to Book ratio (market value of equity/book value of equity), leverage (debt to total assets), liquidity (Cash & Equivalent/Total Assets), HHI (sum of squares of percentage market share of all firms in each industry) and Group Affiliation Dummy (set equal to 1 if firms belong to Business group otherwise 0). The definitions of all variables are presented in Appendix A. We use industry and year-fixed effects. The asterisk superscripts \*\*\*, \*\* and \* represent significance at 1%, 5% and 10% levels, respectively. All the variables are winsorized at 1%. Standard errors are clustered at the firm level. The t statistics are reported in parentheses.

VARIABLES	(1) CSR
Ln CEO Comp.	0.109*** (3.81)
ROA	0.0206*** (5.40)
Board Size	-0.000208 (-0.02)
Percent Indep. Director	0.103 (0.49)
Ln Firm Age	0.0525 (0.53)
Ln Firm Size	0.979*** (34.37)
Market to Book	0.0178* (1.77)
Leverage	-1.877*** (-4.37)
Liquidity	10.80 (1.30)
HHI	-0.000235 (-0.77)
Group Affiliation	-0.176** (-2.19)
Constant	-7.929*** (0.444)
Year Fixed Effects	Yes
Industry Fixed Effects	Yes
R-Square	0.7982
Observations	2,515

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4: Board Compensation and Corporate Social Responsibility**

This table reports the results of panel regression. The dependent variable in columns (1) and (2) is the log of corporate social responsibility investment. The variable of interest is the natural logarithm of total board compensation in column 1 and the average director compensation in column (2). All the control variables are defined in Appendix A. In all our regressions we use year and firm fixed effects. The variables are winsorized at 1% level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	(1) CSR	(2) CSR
Ln Total Board Comp.	0.0733*** (3.16)	
Ln Avg. Director Comp.		0.0714*** (3.00)
Ln CEO Comp.	0.0864*** (2.89)	0.0880*** (2.95)
Board Size	-0.00645 (-0.67)	0.000580 (0.06)
Percent Indep. Director	0.141 (0.68)	0.155 (0.76)
ROA	0.0195*** (5.06)	0.0196*** (5.12)
Ln Firm Size	0.952*** (31.71)	0.953*** (31.77)
Ln Firm Age	0.0573 (0.58)	0.0584 (0.5)
Leverage	-1.857*** (-4.28)	-1.863*** (-4.31)
Liquidity	11.68 (1.44)	11.30 (1.40)
Market to Book	0.0165 (1.62)	0.0163 (1.61)
HHI	-0.000221 (-0.74)	-0.000223 (-0.75)
Group Affiliation	-0.178** (-2.24)	-0.169** (-2.11)
Constant	-7.753*** (-17.27)	-7.710*** (-17.04)
R-square (overall)	0.8000	0.8001
R-square (with in )	0.2620	0.2618
Time Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Observations	2,507	2,508

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 5: High and Low Compensation Sub-samples**

This table reports the results of High and low compensation sub-samples. The dependent variable in columns (1) and (2) is the log of corporate social responsibility investment. The variable of interest is the natural logarithm of total board compensation in column 1 and the average director compensation in column (2). We regress the corporate social responsibility on the natural logarithm board compensation and other control variables on low and high-compensation firms. We divided our sample into two sub-samples based on the median values of average director compensation; firms above the median values are high-compensation firms and those below are low-compensation firms. In all our regression, we use year and firm fixed effects. All the control variables are defined in Appendix A. The variables are winsorised at 1% level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	High Comp. (1) CSR	Low Comp. (2) CSR
Ln Total Board Comp	0.114*** (3.76)	0.0279 (0.90)
Ln CEO Comp.	0.0611* (1.79)	0.114** (2.43)
Board Size	-0.00607 (-0.55)	-0.000147 (-0.01)
Percent Indep. Director	0.100 (0.37)	-0.0252 (-0.08)
ROA	0.0214*** (4.87)	0.0199*** (2.87)
Ln Firm Size	0.976*** (27.10)	0.844*** (19.41)
Ln Firm Age	0.104 (0.97)	-0.0531 (-0.36)
Leverage	-2.185*** (-3.91)	-1.104** (-2.25)
Liquidity	8.351 (0.87)	21.66* (1.70)
Market to Book	0.00783 (0.83)	0.0331* (1.88)
HHI	-0.0000151 (-0.37)	-0.0000617 (-1.45)
Group Affiliation	-0.249*** (-2.84)	-0.0812 (-0.73)
Constant	-8.077*** (-15.91)	-6.322*** (-9.30)
R-Square (Overall)	0.8102	0.7746
R-Square (with in)	0.3297	0.1215
Time Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Observations	1,524	983

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6: Growth, Board Compensation and Corporate Social Responsibility**

This table reports the results of the panel regression. The dependent variable in column (1) -(4) is the natural logarithm of corporate social responsibility. The variable of interest is the natural logarithm of total board compensation in column (1) -(2) and the natural logarithm of average director compensation in column (3) -(4). In this table, to explore the moderating effect of growth opportunities on board compensation and corporate social responsibility, we regress corporate social responsibility on board and average director compensation and other control variables on the sub-samples based on the median values of market to book ratio (Market to book ratio is a proxy variable to measure growth opportunities). We divide the firms on the basis of the median value of market to book (firms above the median values assigned 1 otherwise 0) . In all our regression, we use year and Industry fixed effects. All the control variables are defined in Appendix A. The variables are winsorised at 1% a level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	High Growth	Low Growth	High Growth	Low Growth
	(1) CSR	(2) CSR	(3) CSR	(4) CSR
Ln Total Board Comp	0.0813*** (3.00)	0.0689** (2.05)		
Ln Avg. Director Comp.			0.0975*** (3.52)	0.0587* (1.73)
Ln CEO Comp.	0.0600* (1.73)	0.118*** (2.62)	0.0553 (1.60)	0.123*** (2.76)
Board Size	-0.00824 (-0.66)	-0.00603 (-0.45)	-0.000323 (-0.00)	0.000320 (0.02)
Percent Indep. Director	-0.106 (-0.45)	0.313 (0.95)	-0.0463 (-0.20)	0.305 (0.93)
ROA	0.0208*** (3.64)	0.0227*** (3.95)	0.0207*** (3.65)	0.0230*** (4.01)
Ln Firm Size	0.927*** (23.31)	0.914*** (21.70)	0.923*** (23.04)	0.919*** (21.99)
Ln Firm Age	0.135 (1.16)	0.107 (0.80)	0.137 (1.18)	0.109 (0.81)
Leverage	-2.008*** (-4.35)	-1.357*** (-3.69)	-2.013*** (-4.39)	-1.370*** (-3.74)
Liquidity	8.194 (0.93)	15.10 (1.25)	7.681 (0.88)	14.90 (1.23)
HHI	4.72e-06 (0.13)	-0.000887* (-1.88)	5.49e-06 (0.15)	-0.000891* (-1.90)
Group Affiliation	-0.0153 (-0.16)	-0.249** (-2.39)	-0.00674 (-0.07)	-0.242** (-2.30)
Constant	-7.490*** (-12.55)	-7.938*** (-13.78)	-7.408*** (-12.29)	-7.919*** (-13.65)
R-Square (Overall)	0.8059	0.8055	0.8061	0.8054
R-Square (With in)	0.3274	0.2049	0.3290	0.2041
Time Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,241	1,311	1,242	1,311

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 7: Market Competition, Board Compensation and Corporate Social Responsibility**

This table reports the results of the panel regression. The dependent variable in column (1) -(4) is the natural logarithm of corporate social responsibility. The variable of interest is the natural logarithm of total board compensation in column (1) -(2) and the natural logarithm of average director compensation in column (3) -(4). In this table, to explore the moderating effect of product market competition on board compensation and corporate social responsibility, we regress corporate social responsibility on board and average director compensation and other control variables on the sub-samples based on the HHI Index (HHI is a proxy variable to measure product market competition). HHI is an indicator variable set equal to 1 if the firm belongs to an industry with more than 1500 HHI index otherwise 0. We divide the firms on the basis of two-digit National Industries classification(NIC) codes. In all our regression, we use year and firm fixed effects. All the control variables are defined in Appendix A. The variables are winsorised at 1% level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	High HHI	Low HHI	High HHI	Low HHI
	(1) CSR	(2) CSR	(3) CSR	(4) CSR
Ln Total Board Comp.	0.0948*** (2.63)	0.0664** (2.29)		
Ln Avg. Director Comp.			0.0862** (2.30)	0.0676** (2.30)
Ln CEO Comp.	0.00220 (0.06)	0.155*** (3.84)	0.00550 (0.14)	0.156*** (3.88)
Board Size	-0.0145 (-1.04)	0.00746 (0.59)	-0.00624 (-0.43)	0.0143 (1.17)
Percent Indep. Director	0.356 (1.18)	-0.138 (-0.51)	0.372 (1.24)	-0.130 (-0.48)
ROA	0.0251*** (4.33)	0.0134*** (2.64)	0.0254*** (4.41)	0.0135*** (2.66)
Ln Firm Size	0.954*** (23.76)	0.926*** (20.86)	0.959*** (23.99)	0.926*** (20.85)
Ln Firm Age	0.195 (1.31)	-0.101 (-0.83)	0.196 (1.31)	-0.0988 (-0.81)
Leverage	-1.636*** (-2.58)	-2.362*** (-5.78)	-1.650*** (-2.61)	-2.360*** (-5.77)
Liquidity	19.17 (1.37)	5.097 (0.57)	18.77 (1.34)	4.849 (0.54)
Market to Book	0.0211 (1.56)	0.0182* (1.71)	0.0209 (1.55)	0.0179* (1.70)
Group Affiliation	-0.196 (-1.56)	-0.158 (-1.63)	-0.186 (-1.49)	-0.149 (-1.52)
Constant	-8.645*** (-12.64)	-6.935*** (-13.86)	-8.602*** (-12.52)	-6.885*** (-13.55)
R-Squared (overall)	0.8134	0.7841	0.8136	0.7842
R-Squared (with in )	0.1980	0.3323	0.1964	0.3323
Time Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,262	1,245	1,263	1,245

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 8: Corporate Social Responsibility and Total Firm Risk**

This table reports the results of corporate social responsibility and total firm risk. we used panel regression. The dependent variable (ASV) is the Annualized standard volatility of monthly stock returns. The variable of interest is the corporate social responsibility. In all our regression, we use year and Industry fixed effects. All the control variables are defined in Appendix A. The variables are winsorised at 1% a level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	(1) ASV
CSR	-1.987*** (-4.26)
Ln CEO Comp.	-1.296*** (-2.78)
Board Size	0.167 (0.92)
Percent Indep. Director	9.595** (2.32)
ROA	0.259*** (3.77)
Ln Firm Size	-0.815 (-1.24)
Ln Firm Age	-2.660* (-1.96)
Leverage	22.64*** (4.09)
Liquidity	9.099 (0.041)
Market to Book	-0.371*** (-2.77)
HHI	-0.00134** (-2.03)
Group Affiliation	1.795 (1.63)
Constant	66.37*** (8.65)
R-square(Overall)	0.2896
R-square(With in)	0.1290
Time Fixed Effects	Yes
Industry Fixed Effects	Yes
Observations	2,099

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 9: Total Firm Risk, Board Compensation and Corporate Social Responsibility**

This table reports the results of the panel regression. The dependent variable in column (1) -(4) is the natural logarithm of corporate social responsibility. The variable of interest is the natural logarithm of total board compensation in column (1) -(2) and the natural logarithm of average director compensation in column (3) -(4). In this table, to explore the moderating effect of total firm risk on board compensation and corporate social responsibility, we regress corporate social responsibility on board and average director compensation and other control variables on the sub-samples based on the median values of annualised standard volatility of monthly stock returns (ASV is a proxy variable to measure total firm risk). We divide the firms on the basis of the median value of the ASV (firms above the median values are assigned 1; otherwise, 0). In all our regression, we use year and Industry fixed effects. All the control variables are defined in Appendix A. The variables are winsorised at 1% a level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	High Risk	Low Risk	High Risk	Low Risk
	(1) CSR	(2) CSR	(3) CSR	(4) CSR
Ln Total Board Comp	0.0584** (2.15)	0.105*** (3.24)		
Ln Avg. Director Comp.			0.0572** (2.05)	0.102*** (3.03)
Ln CEO Comp.	0.0879** (2.38)	0.0198 (0.49)	0.0899** (2.45)	0.0228 (0.57)
Board Size	-0.0102 (-0.87)	0.00586 (0.45)	-0.00445 (-0.38)	0.0162 (1.24)
Percent Indep. Director	0.155 (0.59)	-0.307 (-0.98)	0.163 ( 0.62)	-0.259 (-0.85)
ROA	0.0303*** (6.24)	0.0230*** (3.20)	0.0304*** ( 6.2)	0.0230*** (3.21)
Ln Firm Size	0.943*** (28.34)	0.947*** (24.28)	0.944*** (28.31)	0.947*** (24.35)
Ln Firm Age	0.0773 (0.73)	0.0788 (0.74)	0.0798 (0.75)	0.0747 (0.71)
Leverage	-1.393*** (-3.58)	-2.538*** (-2.97)	-1.400*** (-3.61)	-2.547*** (-2.99)
Liquidity	-0.887 (-0.07)	0.494 (0.05)	-1.150 (-0.09)	-0.335 (-0.03)
Market to Book	0.0160 (1.37)	0.00744 (0.77)	0.0157 (1.35)	0.00765 (0.80)
HHI	-0.000301 (-0.69)	-0.000474 (-1.11)	-0.000296 (-0.68)	-0.000486 (-1.1)
Group Affiliation	-0.239*** (-2.82)	-0.0680 (-0.70)	-0.233*** (-2.73)	-0.0561 (-0.58)
Constant	-7.961*** (-15.25)	-7.325*** (-14.49)	-7.930*** (-15.09)	-7.228*** (-14.05)
R-Square(overall)	0.7580	0.8506	0.7580	0.8505
R-Square (with in)	0.2552	0.3072	0.2553	0.3071
Time Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,541	966	1,541	967

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 10: Lagged Variable Regression, Board Compensation and Corporate Social Responsibility**

This table reports the results of panel regression. The dependent variable is the natural logarithm of corporate social responsibility in columns (1)-(2). The variable of interest is the natural logarithm of total board compensation, and average director compensation lagged by one year. All other control variables are also lagged by one year. In all our regression, we use year and firm fixed effects. All the control variables are defined in Appendix A. The variables are winsorised at 1% a level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	(1) CSR	(2) CSR
Ln Total Board Comp <sub>t-1</sub>	0.0943*** (2.72)	
Ln Avg. Director Comp <sub>t-1</sub>		0.102*** (3.13)
Ln CEO Comp <sub>t-1</sub>	0.0948*** (2.59)	0.0931** (2.54)
Board Size <sub>t-1</sub>	-0.0130 (-1.01)	-0.00484 (-0.35)
Percent Indep. Director <sub>t-1</sub>	0.194 (0.69)	0.193 (0.69)
ROA <sub>t-1</sub>	0.0286*** (4.99)	0.0287*** (5.01)
Ln Firm Size <sub>t-1</sub>	0.918*** (6.71)	0.912*** (6.69)
Ln Firm Age <sub>t-1</sub>	1.984*** (4.44)	2.004*** (4.51)
Leverage <sub>t-1</sub>	-2.486*** (-3.54)	-2.476*** (-3.53)
Liquidity <sub>t-1</sub>	19.32** (2.34)	19.28** (2.34)
Market to Book <sub>t-1</sub>	.0000318 (0.75)	.0000328 (0.78)
HHI <sub>t-1</sub>	-0.00976 (-0.61)	-0.00968 (-0.60)
Group Affiliation <sub>t-1</sub>	-1.570*** (-2.93)	-1.545*** (-2.89)
Constant	-14.64*** (-15.91)	-14.58*** (15.77)
R-Square (overall)	0.9314	0.9315
R- Square (with in)	0.2821	0.2826
Time Fixed Effects	Yes	Yes
Firm Fixed Effects	Yes	Yes
Observations	2,112	2,113

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 11: Dynamic GMM Regression of CSR on Total board and Average Director Compensation**

This table report the results of dynamic GMM regression of corporate social responsibility on total board and average director compensation. The dependent variable is the natural logarithm of corporate social responsibility. The variable of interest is the predicted values of natural log of total board and average director compensation (instrumented with log of average director sales, Beta and log of firm size). All the control variables are defined in Appendix A. The variables are winsorised at 1% a level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	(1) CSR	(2) CSR
Instrumented Ln of Total Board Comp	0.222*** (0.0838)	
Instrumented Ln of Avg. Director Comp		0.202*** (0.0651)
Ln CEO Comp	-0.0316 (0.0477)	-0.0114 (0.0363)
Board Size	-4.61e-05 (0.0107)	0.0240*** (0.00744)
Percent Indep. Director	-0.315* (0.190)	-0.260 (0.191)
ROA	0.0494*** (0.00379)	0.0498*** (0.00358)
Ln Firm Size	0.912*** (0.0274)	0.914*** (0.0243)
Ln Firm Age	0.137*** (0.0485)	0.142*** (0.0483)
Leverage	-1.783*** (0.236)	-1.821*** (0.230)
Liquidity	4.874 (8.251)	0.968 (8.151)
Market to Book	0.0142** (0.00572)	0.0133** (0.00558)
HHI	-4.17e-06 (9.95e-06)	-5.01e-06 (9.82e-06)
Group Affiliation	-0.0955** (0.0417)	-0.0799* (0.0419)
Constant	-7.923*** (0.308)	-7.819*** (0.313)
Under Identification test (Kleibergen-Paap rk LM statistic)	Yes	Yes
Over Identification test (Hansen J statistic)	Yes	Yes
Weak Identification test (Cragg-Donald Wald F statistic)	Yes	Yes
Observations	2,462	2,462
R-squared	0.785	0.787

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 12: Dynamic GMM Regression of CSR on Total board and Average Director Compensation with lagged variables**

This table reports the results of dynamic GMM regression of corporate social responsibility on total board and average director compensation. The dependent variable is the natural logarithm of corporate social responsibility. The variable of interest is the one-year lagged values of the predicted values of the natural log of the total board and average director compensation (instrumented with the log of average director sales, Beta and log of firm size). To check the validity and reliability of the instruments we test for the over identification, weak and under identification of instruments. All the control variables are lagged by one year and are defined in Appendix A. The variables are winsorised at 1% a level. t-statistics are reported in parenthesis. Robust standard errors are clustered at the firm level. The asterisk superscripts \*\*\*, \*\*, and \* represent statistical significance at the 1%, 5% and 10% levels, respectively.

VARIABLES	(3) CSR	(4) CSR
Instrumented Ln of Total Board Comp <sub>t-1</sub>	0.182*** (0.0314)	
Instrumented Ln of Avg. Director Comp <sub>t-1</sub>		0.186*** (0.0324)
Ln CEO Comp <sub>t-1</sub>	-0.0166 (0.0254)	-0.00945 (0.0247)
Percent Indep. Director <sub>t-1</sub>	-0.556*** (0.193)	-0.520*** (0.192)
Board Size <sub>t-1</sub>	-0.00899 (0.00827)	0.0107 (0.00768)
ROA <sub>t-1</sub>	0.0649*** (0.00408)	0.0648*** (0.00406)
Ln Firm Size <sub>t-1</sub>	0.919*** (0.0175)	0.915*** (0.0179)
Ln Firm Age <sub>t-1</sub>	0.109** (0.0482)	0.114** (0.0482)
Leverage <sub>t-1</sub>	-1.821*** (0.230)	-1.843*** (0.228)
Liquidity <sub>t-1</sub>	12.19* (7.003)	9.063 (6.905)
Market to Book <sub>t-1</sub>	0.00297 (0.00777)	0.00221 (0.00766)
HHI <sub>t-1</sub>	2.97e-06 (9.94e-06)	2.64e-06 (9.95e-06)
Group Affiliation <sub>t-1</sub>	-0.0852** (0.0403)	-0.0709* (0.0406)
Constant	-7.443*** (0.262)	-7.286*** (0.271)
Under Identification test (Kleibergen-Paap rk LM statistic)	Yes	Yes
Over Identification test (Hansen J statistic)	Yes	Yes
Weak Identification test (Cragg-Donald Wald F statistic)	Yes	Yes
Observations	2,087	2,088
R-squared	0.814	0.815

