

# IMPACT OF MANAGERIAL ABILITY AND POWER ON CEOS COMPENSATION – AN EMPIRICAL EVIDENCE FROM INDIAN COMPANIES

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## Abstract

The present study aims to test whether the rent extraction or efficient contracting which significantly influences the compensation of CEOs in Indian companies. By drawing the sample from all the listed companies providing data on CEO characteristics from the year 2006 to 2018, the study tests the empirical model using ordinary least squares regression and quantile regression. The results of analysis reveal that CEO compensation is tenure-variant and there is a trivial difference between the impact of CEO power and CEO tenure. It is in line with the bargaining theory of managerial ability view on CEO compensation. It supports efficient contracting in CEO compensation. The results of the analysis also reveal that impact of CEO power is comparatively less for long-tenured CEOs. It implies that managerial ability view is maintained, and CEO compensation is influenced by their bargaining power. The results also prove that power premium is more in case of group companies compared to non-group companies.

**Keywords:** CEO Compensation, Rent Extraction Theory, Efficient Contracting Theory, CEO Power, CEO Tenure, Indian Companies.

## 1. Introduction

Academics, government officials and media have expressed concern about the high level of compensation for CEO of Indian enterprises and observed that corporate governance and regulation have failed to curb excessive compensation and rent extraction (Chakrabarti et al., 2012; S. Ghosh, 2010; M. Jaiswall & Firth, 2009; S. S. K. Jaiswall & Bhattacharyya, 2016; Pande and Dubey, 2014; Rai, 2009; Singh, 2007). Against this backdrop, research on factors influencing the compensation premium of CEOs is drawing the attention of the academic researchers and policymakers. The extant literature was mainly confined to developed economies (Core et al., 1999; Morse et al., 2011; Murphy, 1985; Song & Wan, 2019). The findings and implications which are derived from the studies in developed economies cannot be applied verbatim to emerging economies. Several economists have already made strong enough argued that the corporate structure, market, and organization of developed and developing countries have some fundamental institutional structural differences. It is also argued that there is no apparent difference between ownership and control in emerging economies. The perennial problems in emerging economies like India are underdeveloped managerial markets, interference of founders of the companies in the appointment of CEOs.

There are two opposite views relating to executive compensation in academic research. One is 'managerial power' view, and another one is 'efficient contracting' view. Managerial power view suggests that more powerful CEOs receive higher compensation compared to less powerful CEOs. It reflects the rent-extraction ability of CEOs. The extract literature as also evidenced it (inter-alia, Core et al., 1999; S. S. K. Jaiswall & Bhattacharyya, 2016; Murphy, 1985; Song & Wan, 2019). Managerial power view hypothesizes that rent-extraction ability of CEOs positively associated with their tenure. Because one of the primary sources of CEO power is they influence the appointment of a board of directors who in turn decide the compensation structure of the CEOs. It is more legitimate to hypothesize that the directors who are nominated by the CEOs are more loyal to the CEOs, and they hesitate to influence the decisions taken by the CEOs. As the incumbency of the CEOs increases, there will be more possibility of appointing a greater number of directors by such CEOs, which in turn improves the power of the CEOs. In other words, the impact of CEO power is more for long-tenured CEOs compared to that of short-tenured CEOs.

On the contrary, managerial ability view proposes efficient contracting theory which hypothesizes that managerial talent influences CEOs power premium in an efficient managerial executives' market. Efficient contracting theory suggests two sub-theories. One is Ability Matching Theory which states that managerial talent is tenure-invariant and large firms attract talented managers by offering more competitive compensation (inter-alia, Baranchuk et al., 2011; Gabaix & Landier, 2008; Rosen, 1981; Song & Wan, 2019). Another one is bargaining theory which suggests more talents CEOs possess better bargaining power and negotiation skills and can demand greater compensation (Rosen, 1981). The Bargaining Theory also hypothesizes that managerial talent is tenure-variant (Hermalin & Weisbach, 1998). Though, both the Managerial Ability Theory and Bargaining Theory suggests that CEO compensation influenced by their talent, those two theories differ on the view that talent is tenure-variant or tenure-invariant. (Rosen, 1981).

Against this backdrop, the present study aims to test whether the rent extraction or efficient contracting, which significantly influences the compensation of CEOs in Indian companies. By drawing the sample from all the listed companies providing data on CEO characteristics from the year 2006 to 2018, the study tests the empirical models using ordinary least squares regression and quantile regression. The final sample used in the study is the pooled data of 3070 CEO-years which are having complete data of CEO compensation and other CEO characteristics. To mitigate the impact of the extreme value of CEO compensation, the present study excludes all the observations of CEO compensation beyond the z-score value of three. The data of other controlling variables are winsorized at the top 5% and bottom 5%.

The results of empirical analysis reveal that CEO compensation is tenure-variant, and there is a trivial difference between the impact of CEO power and CEO tenure. It is in line with the bargaining theory of managerial ability to view on CEO compensation. It supports efficient contracting in CEO compensation. The studies like (Core et al., 1999; Morse et al., 2011; Murphy, 1985; Song & Wan, 2019) in developed economies and (S. S. K. Jaiswall & Bhattacharyya, 2016) in the Indian context have evidenced similar results. The results also disclosed that financial performance (ROA), size of the firm (LnSales) and growth opportunities (PBV) have a significant positive impact on CEO compensation while risks of the firm (STDEV.ROA) has a significant negative impact which is in line with the hypothesized relationship of such variables with CEO compensation. The extant literature has also evidenced qualitatively similar results for controlling variables (inter-alia, Chakrabarti et al., 2012; A. Ghosh, 2006; Guthrie et al., 2012; S. S. K. Jaiswall & Bhattacharyya, 2016; Murphy, 1985; Ryan & Wiggins, 2001; Song & Wan, 2019).

The Managerial Ability View proposes 'Efficient Contracting Theory' which emphasizes that CEO compensation should be commensurate with their talent. At the same time, the managerial power view suggests that rent-extraction ability of the CEO influences their compensation. Moreover, managerial talent and rent-extraction ability also grow with CEO tenure. So, the power premium of new or short-tenured CEOs represents mainly their managerial talent while power premium of long-tenured CEOs represents their talent and rent-extraction ability. So, the power premium of long-

tenured CEOs hypothesized to be more than that of short-tenured CEOs, when managerial power view is maintained.

On the contrary, when managerial ability view is maintained, there should be no significant difference in the power premium of short-tenured and long-tenured CEOs. Against this backdrop, the present study sub-divides the sample into long-tenured and short-tenured CEOs. The results of the analysis reveal that the impact of CEO power is comparatively less for long-tenured CEOs. It implies that managerial ability view is maintained, and CEOs' bargaining power influences their compensation. The results are in line with studies like Song & Wan (2019).

Group companies are the most common phenomenon in corporate India. In group companies, founder members play a dominating role in the appointment of CEOs or founder members or their relatives act as CEOs. Against this backdrop, it is hypothesized that power premium is more in case of group companies compared to non-group companies. The results are consistent with the hypothesis. Extant literature in the Indian context also evidenced similar results (inter-alia, Chakrabarti et al., 2012; S. Ghosh, 2010; M. Jaiswall & Firth, 2009). Based on the findings of the analysis, it can be inferred that CEO compensation in Indian companies is more tenure-variant supporting the efficient contracting view. However, in group companies, CEO compensation is more influenced by their power compared to that in non-group companies.

It can be concluded that though, the professional market of CEOs is becoming more efficient, rent extraction still exists strongly in group companies in India. It draws the attention of regulators, stock exchanges and market players and expected to make them more focused on enhancing the transparency in group companies in India.

## 2. Literature Review and Theoretical Background of the Research Problem

The existing literature documents that the characteristics of companies (e.g. company size and performance) and managers (e.g. tenure of employment and gender) explains the variability of the executive compensation partly. The scope of academic research in this area extends to contract theory, corporate finance, corporate governance, and socio-economic issues like unequal distribution of income. The studies like Lucian Arye Bebchuk & Fried (2005); Choe et al., (2014) and Morse et al., (2011) proved the same, and it has drawn the attention of not only the academic researchers but also the policymakers. Consequently, in the United States, SEC has imposed disclosure requirements relating to managerial compensation like mandatory disclosure of the ratio of CEO compensation to median employee pay in the company. In the year 2013, the European Union also came out with a new regulation to limit the bonus paid to bankers.

There are two opposite views relating to executive compensation in academic research. One is 'managerial power' view, and another one is 'efficient contracting' view. On one side, the "managerial power" view argues that CEO compensation is not determined by the board, keeping the shareholders' value maximization in view. While decisions relating to compensation of CEOs are made by the CEOs themselves, in such a way that it maximizes their rent. It is also called 'rent-extraction'. The managerial power view argues that the board does not operate at arm's length in structuring the CEO compensation. Instead, the board is influenced by the CEOs because of their power. The bargaining power of CEOs determines the strength of the positive association between CEO power and their compensation (Choe et al., 2014). Chief Executive Officers (CEOs) dominate the decisions of the board by virtue of their power. The power of a CEO stems from various sources like holding various positions by CEOs like managing director, promoter, chief finance officer etc. The underlying theory on executive power posits that powerful CEOs can play an instrumental role in the selection of new directors to the company who decides the compensation for the CEOs. It makes the independent directors loyal in reciprocating with the CEOs. Moreover, they hesitate to question the CEOs because it may ruin their cordial relationship with the CEOs (Haldea, 2010;

Shivdasani & Yermack, 1999). Besides, in many companies, CEOs also hold the position of managing director and dominate the board decisions. Studies like Shivdasani & Yermack (1999) have also evidenced the role of CEOs in the selection of directors.

The powerful CEOs may also try to get excessive compensation which is more than their ability when their compensation is linked to the performance of the company. There is a raft of performance measures, and each measure has its pros and cons. Due to the varying nature of inputs used to estimate the measure, there is also a possibility of showing a varying performance by each measure of performance. Powerful CEO's can influence the board to assign more weightage to those performance measures which are showing better performance than other performance measures, and thereby, they try to get better pay. It is proved by studies like (Bizjak et al., 2008; Morse et al., 2011) and also appoints a compensation adviser who can help them in awarding higher compensation (Murphy & Sandino, 2010).

The 'rent-extraction ability' of the CEOs will have a limit due to possible adverse reactions from shareholders of the company. To avoid such reactions from the shareholders, CEOs always try to mask their rent extraction activities through obliquely structuring their compensation arrangements like using stock options etc. (Song & Wan, 2019).

Higher CEO pay may be associated either with competition on the labour market or with the rent extraction (Core et al., 1999). CEO compensation, on the one side, is higher due to a higher equilibrium pay for a skilled CEO (Core et al., 1999), representing efficient contracting (Helfat, 1991). Not only will talented CEOs receive more compensation because of increased demand for their talent, but they will probably work hard and use their skills to benefit their businesses and improve their performance. They earn more while improving firm performance, in line with efficient contracting.

If governance mechanisms play a role in efficient contracts, CEO compensation for governance characteristics will show a positive link with future corporate success (Core et al., 1999). CEO compensation, on the other hand, may be higher, as a consequence of a CEO's rental extraction, which shows a failure of management in the compensation contracts and the curbing of agency problems. When the structures and processes of corporate governance are weak, the monitoring is less effective, and CEOs can take rents at the expense of the company. They can collaborate with the board of their firm to obtain higher compensation and more favourable terms than the interests of the company (Lucian Arye Bebchuk et al., 2002; Bizjak et al., 2008; Core et al., 1999; M. Jaiswall & Firth, 2009). if the governance structure of the company is more efficient and effective, it becomes more difficult for the CEOs to extract rent. Organizations with more robust governance have more significant income generation, low agency expenses and less future performance in comparison to organizations with poorer governance. There are also negative correlations with potential business success between CEO's rewards for corporate governance and management skills when CEOs extract rent (Core et al., 1999).

### 3. Indian Context and Institutional Environment

India has a hybrid system of corporate governance with features both in the countries with common law and in the countries with code of law (Sarkar & Sarkar, 2000). The security market is monitored by the Securities and Exchange Board of India. Corporate governance standards have been continued to improve, and listed companies ensure compliance. Although investment protection laws and corporate governance rules are strong, enforcement is weak (La Porta et al., 2000). Companies are seldom penalized because of infringement of corporate governance standards (Balasubramanian et al., 2010).

Management of firms rests with either government or private parties in India. Companies are, therefore, divided into public and private sectors. Non-governmental entities, such as Indian

Business Groups, multinational corporations, and corporate investors, own and manage Indian private sector companies. Of the 500 top Indian companies listed on stock exchanges, 89% are private and represent 78% of total market capitalization and rest of the companies are from Public sector (Chakrabarti et al., 2008). The public sector companies are either owned and controlled by the central government or the state governments. The public sector companies in India are concentrated mainly in selected industries such as banking, defence, oil, and natural gas, etc. The public sector companies in India were nationalized to promote non-commercial goals and public interests, for example, job creation, equal distribution of wealth, growth of the fundamental and strategic industries, etc. Their legal charter allows them to follow government-specific public priorities and social agendas (Varottil, 2013). Therefore, their activities are not always geared at maximizing profit.

The dominance of private-sector firms affiliated with group businesses is an essential characteristic of the Indian corporate sector (Narayanaswamy et al., 2012). A group of companies consists of legally separate companies linked by a common promoter. Such firms usually identify the promoter of the business in their Annual Report. Although companies in India are in control of cross-ownership, interlocking directors, etc. as their main feature, such companies may also share their managerial personnel. The studies like Chakrabarti et al., (2012) documented that average shareholdings of the promoters in the Indian companies is 50.4% and they also own at least 38% of the equity in three out of four companies in India. In another study by Sarkar & Sarkar, (2000), institutional shareholders hold more than one-third of the total equity shares of 6.7% of Indian firms.

### 3.1 CEO Compensation and Corporate Governance in Indian Firms

Total compensation from CEOs in Indian companies usually includes performance bonuses, commissions, allowances, perquisites, and retirement benefits. The Indian government assesses the companies' performance and grants an annual performance ranking based on which a public sector corporation calculates its employees and management's performance-related compensation (Bhattacharyya, 2013). According to the guidelines of the Securities and Exchange Board of India (SEBI) and section 217 of the Indian Company Act 1956, the company shall report the remuneration of the CEO and other Executive Directors along with the personal information, if the payment exceeds the threshold level. The stock options as CEO compensation are not standard; less than 15 per cent of the top 500 Indian firms grant stock options to their CEOs, and the value of such stock options are minimal (Balasubramanian et al., 2010).

In the case of developing economies, transparency in fixing the compensation of CEOs and other directors is emphasized by various committees like Kumar Mangalam Birla's report (1999) in India, the report of the king's committee (2002), in South Africa, etc. These committee reports also argue that any compensation to the managers, including independent directors, should be fixed by the board of directors, and approved in general meetings by the shareholders. In India, as per the provisions of corporate laws, the remuneration committee of BOD will determine CEO compensation. Nevertheless, the law requires companies to disclose in their annual report, the amount of compensation for CEOs; it does not require a specific statement on how the compensation was decided. Therefore, the outside researchers cannot assess the process of compensation determination in India.

Indian businesses have concentrated ownership. Their promoters usually hold the largest share of their shareholdings, followed by financial institutions (Chakrabarti et al., 2012; Sarkar & Sarkar, 2000). Given, a large amount of wealth at stake, block holders have an opportunity to track and monitor the management and also curb rent extraction aggressively. The studies like Sarkar & Sarkar (2000) and Shleifer & Vishny (1986) document that large shareholders are providing efficient monitoring and thereby, contributing to the improved performance of Indian corporates. The present study, therefore, hypothesizes CEO compensation to be linked to ownership structures.

Academics, business media and policymakers have expressed their apprehensions about high CEO salaries in Indian businesses. They have argued that the present corporate governance system is struggling to minimize rent extraction. As found by A. Ghosh (2006), more than 90% of board compensation in Indian firms goes to executive or insider directors only. Against this backdrop, the present study tests the relation of the CEO's compensation with CEO power and tenure in order to examine whether the higher CEO remuneration reflects rental or efficient contracting. Dr Manmohan Singh, the then Prime Minister of India, urged Indian business leaders in 2007 to "resist excessive remuneration to promoters and senior executives" (Singh, 2007). Studies like Chakrabarti et al. (2012) suggest that rent extraction in Indian companies mirrors the presence of agency costs and the inefficient regulatory system. The presence of rent extraction in family-controlled Indian companies was evidenced by M. Jaiswall & Firth(2009).

Saravanan, Srikanth and Avabruth (2017) examined the relationship of managerial compensation with corporate governance and firm performance on the sample of 284 Indian firms from the year 2005 to 2014. The study found that a proportion of independent directors has a significant negative impact on the financial performance of the firm. The study also focused on the cross-holding of directorships in family business groups and found the positive association of cross-holdings of executive directors with the financial performance of the firm. Kaur and Singh (2018) found a positive association between CEO remuneration and firm performance, and study also found the CEO nationality has its impact on this relationship.

Kohli and Gill (2019) examine the relationship between corporate strategy and CEO compensation in the case of family firms in India by using a sample of 106 listed pharmaceutical companies in India. The study found that family firms have a positive moderating impact on the relationship between corporate strategy and CEO compensation. On the contrary, standalone firms have a liberal approach towards CEO compensation policy. The study supports behavioural agency theory. Patnaik and Suar (2020) examine how CEO compensation is influenced by ESG (environment, social and governance) disclosure practices and the characteristics of corporate governance by using the data of 282 Indian manufacturing firms from the year 2013-14 to 2018-19. The findings of the study reveal that corporate governance characteristics (like board size, board independence, board diversity, CEO duality, etc.) are negatively associated with CEO compensation. The study also reveals that the ESG disclosures streamline CEO compensation.

In family-controlled firms, CEOs use their power to get high compensation. In such firms, ownership structure, board structure and processes, or the CEO's own experience and status may be the sources of power (Finkelstein, 1992; Shivdasani & Yermack, 1999). The present study tries to provide more insights into the dynamics of CEO compensation in the emerging economy, where most of the companies are family-owned, and many board members are affiliated to the company's founder.

#### 4. Data and Methodology

The present study uses the data of all the listed companies in India for 13 years from 2006 to 2018. Before the year 2006, minimal data is available on the variables required for the empirical analysis. Hence, the year 2006 is chosen as the starting year for the sample period. The data relating to CEO compensation and other characteristics of CEOs is available only for 3070 CEO-year observations during the sample period. So, the sample of the baseline regression model is only 3070 CEO- year observations which consist of 845 listed companies in India. The sample is broader, extending to a longer period and covering all the data available on CEO characteristics of listed companies. It is more reflective of Indian companies than the samples used in many of the earlier studies in the Indian context (inter-alia, Ghosh, 2006; Jaiswall & Bhattacharyya, 2016; Parthasarathy et al., 2006). Therefore, the findings of the study are more generalizable.

#### 4.1 Econometric Specification of the Baseline Regression Model

The following baseline model is applied with ordinary least squares regression and quantile regression to test the hypothesized relationship between CEO power and CEO tenure with CEO compensation while controlling the other economic determinants of CEO compensation.

$$\begin{aligned} \ln Re\ m\ uneration_{it} = & \alpha_0 + \beta_1 CEOPower_{it} + \beta_2 CEOIncumbency_{it} + \\ & \gamma_1 ROA_{it} + \gamma_2 LnSales_{it} + \gamma_3 Stdev.ROA_{it} + \gamma_4 MBV_{it} + \gamma_5 CapitalIntensity_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

In equation(1),  $\ln Re\ m\ uneration_{it}$  is the total remuneration paid to a CEO;  $CEOPower_{it}$  is CEO power index;  $CEOIncumbency$  is the incumbency of the CEO;  $ROA_{it}$  is 'return on assets' which is a proxy for the financial performance of a company;  $MBV_{it}$  is 'market-to-book' ratio which is a proxy for growth opportunities for a company;  $LnSales_{it}$  is the natural logarithmic values of sales which is a proxy for the size of a company;  $Stdev.ROA$  measures the volatility in the financial performance of the company;  $CapitalIntensity_{it}$  is the ratio of tangible assets, to total assets.

#### 4.2 Handling of Outliers and Missing Values

All the controlling variables used in the model are winsorized at the top 5% and bottom 5% of the data points. Moreover, observations with CEO compensation more than the z-score value of three, are excluded to avoid the impact of outliers on the results of the analysis. The observations with the missing values of the two leading independent variables, i.e. CEO power and CEO tenure, are excluded from the analysis. The missing values of other controlling variables range between 10% to 15% only and so, mean imputation has been applied to fill the gaps.

#### 4.3 Construction of CEO Power Index and its hypothesized effect on CEO compensation

To conduct our analytical research, it is required to measure how much decision-making power is concentrated in the CEO's hands. "Power" is a concept with different dimensions, not easily observed. In its work on the influence of persons in senior management teams, Finkelstein (1992) described four different sources of power: structural power (related to the allocation of official positions within the organization), ownership power, expert power and prestige power. The present study focuses primarily on structural power, due to limitations on the availability of data relating to required variables to measure other dimensions of power. The studies like Main et al., (1995) found that when a CEO is appointed before the appointment of the other directors, there will be a higher level of compensation than the CEOs appointed after the board of directors.

In the present study, the operational definition of CEO power is developed with reference to the extant literature (Humphery-Jenner et al., 2018; Khanna et al., 2015; Li et al., 2019; Morse et al., 2011; Song & Wan, 2019). The other designations of a CEO are the pivotal sources of their power. The studies like (Finkelstein & D'aveni, 1994) have evidenced that CEO, being a chairman of the board also, can exercise greater influence in nominating the new directors and such directors will be loyal to CEO. Moreover, CEO duality weakens the power of the board to replace the CEOs when the financial performance is not good. It means such companies will experience lower sensitivity of CEO turnover to the change in financial performance (downwards) of the firm. It was also evidenced by the studies like Goyal & Park (2002). When the CEO is also the promoter, such persons can influence strategic corporate policies, including their compensation, as evidenced by the studies like Guthrie et al. (2012). When a CEO holds any additional administrative role like chief finance officer, in the company, the power concentration will be more in such case. The extant literature has also evidenced the same (Adams et al., 2009; Humphery-Jenner et al., 2018; Morse et al., 2011).

The extant literature, like Song & Wan(2019), has constructed a power index using only three binary measures, including the duality of CEO, founder status and holding any other executive position. As an extension to it, the present study uses eight different combinations of the designations of CEOs and values are assigned based on the combination of CEO designation with other positions in the organization. If the CEO holds no other designation, the value is '1'; if the CEO is also a director, the

value is '2'; if the CEO holds the position of president, the value is '3'; if the CEO holds the position of executive director, the value is 4; if the CEO is also a joint managing director, the value is '5'; if CEO holds the position of managing director, the value is '6'; if the CEO holds the position of vice-chairperson, the value is '7'; if the CEO holds the position of chairperson, the value is '8'; if CEO holds the position of both the chairperson and managing director, the value is '9'. The value assigned based on the hierarchy of designations in the organization. So, the value of CEO power ranges from 1 to 9. CEO power is positively associated with the compensation paid to them as suggested by managerial power view. More powerful CEOs receive higher compensation compared to less powerful CEOs (inter-alia, Core et al., 1999; Morse et al., 2011; Murphy, 1985).

Powerful CEOs play an instrumental role in the selection of new directors who decide the compensation of the CEOs. It means directors will be biased in determining the compensation of the CEOs. Besides, as the tenure of the CEO grows, the number of directors selected by the CEOs will also increase. It provides more rent-extracting ability to the longer-tenured CEOs (Lucian A. Bebchuk et al., 2010; Shivdasani & Yermack, 1999). Based on this argument, a positive association of CEO power with their compensation is hypothesized.

#### **4.4 Measurement of CEO Incumbency and its hypothesized relationship with CEO compensation**

The Prowess Database, from which the data relating to CEO characteristics has been retrieved, does not provide the data on CEO tenure. As the sample consists of all the listed companies and 3070 CEO-year observations, it is practically challenging to collect company-wise primary information about the tenure of the CEOs. The Prowess database provides data relating to CEO characteristics from the year 2000. So, the year 2001 is considered as the starting year for all the company to measure the CEO incumbency. Based on the incumbency of the CEOs from the year 2001, the incumbency of the CEO is computed. So, the variable does not measure CEO tenure; instead, it measures the incumbency of CEOs over the period from 2001 to 2018.

Ability Matching Theory suggests that managerial talent is tenure-invariant. So, if the tenure of the CEO is not having a significant impact on compensation, it signifies that CEO compensation depends on their talent (Baranchuk et al., 2011; Gabaix & Landier, 2008; Rosen, 1981, 1982). Bargaining Theory provided the contrary view. It hypothesizes that managerial talent is tenure-variant, as the CEOs gain experience, their managerial ability and talent will also grow (Hermalin & Weisbach, 1998).

#### **4.5 Hypothesized relationship of controlling variables with CEO compensation**

**Firm Size and CEO Compensation:** Firm size is measured as the log value of sales. Most of the earlier studies on key drivers of managerial pay focus on the role of the corporate size in compensating the CEO. The uncertainty in operation always rises as the organization grows in size. Uncertainty in the operations makes the role of CEOs more challenging and demanding for higher compensation. The extant literature supports a positive association between firm size and CEO compensation (inter-alia, Murphy, 1985; Ryan & Wiggins, 2001; Song & Wan, 2019).

**Firm performance and CEO compensation:** Usually, the incentives included in CEO compensation are usually linked to the performance of the company. Hence, a positive association between firm performance and CEO compensation is hypothesized. The extant literature reflects on the effect of company performance on the CEO's compensation. It was empirically proven that CEO pay increases as the company's performance increases (inter-alia, Bhattacharjee et al., 1998; Jensen & Murphy, 1990; Lewellen & Huntsman, 1970; Masson, 1971; Rose & Shepard, 1997; Song & Wan, 2019).

**Risk of the firm and CEO compensation:** The present study measures risk of the firm as a standard deviation of ROA. Firms with more risk of financial performance need more dynamic CEOs who can successfully handle the risk. Firms can employ such vibrant CEOs only when it can pay attractive salaries. Hence, a positive association between firm risk and CEO compensation is hypothesized. The extant literature has evidenced the same (inter-alia, Core et al., 1999; Ghosh, 2006; M. Jaiswall & Firth, 2009; S. S. K. Jaiswall & Bhattacharyya, 2016). On the other hand, when the relationship between risk



and CEO compensation is proved to be negative, it can be inferred that CEO cannot handle the risk effectively and consequently, he/she is losing compensation premium.

Growth Opportunities and CEO Compensation: In the present study, growth opportunities are measured by PBV ratio of the stocks of the firms. Firms with higher growth opportunities demand more talented CEOs who can unlock the growth potential more effectively. As discussed earlier, a firm can attract talented CEOs only when it pays competitively higher compensation. Hence, the positive association between growth opportunities and CEO compensation is hypothesized. The extant literature has also documented the same (inter-alia, S. S. K. Jaiswall & Bhattacharyya, 2016; Song & Wan, 2019).

## 5. Results of the Analysis

### 5.1 Descriptive Analysis of Trends in CEO compensation and Return on Assets (ROA)

**Table 1: Year-Wise Distribution of the Descriptive Statistics of CEO Compensation from the year 2006 to 2018 (in Rupees lakhs)**

Year	Mean	Median	Max	Min.	Observations (CEO-years)
2006	76.91	28.74	1,520.00	1.20	63
2007	98.89	50.89	1,390.00	1.44	72
2008	114.72	51.81	1,570.00	1.44	95
2009	127.76	60.09	1,970.00	1.00	103
2010	139.19	51.75	3,090.00	1.20	130
2011	132.88	79.05	1,260.00	0.70	133
2012	138.38	81.00	973.76	0.60	139
2013	188.05	100.02	3,280.00	0.60	168
2014	194.84	85.22	3,790.00	0.50	185
2015	211.53	108.41	4,460.00	0.72	281
2016	213.33	64.00	5,740.00	0.54	495
2017	214.92	72.00	5,970.00	0.60	565
2018	254.35	91.14	7,540.00	0.72	628

**Figure 1: Trends in CEO Compensation from the year 2006 to 2018**

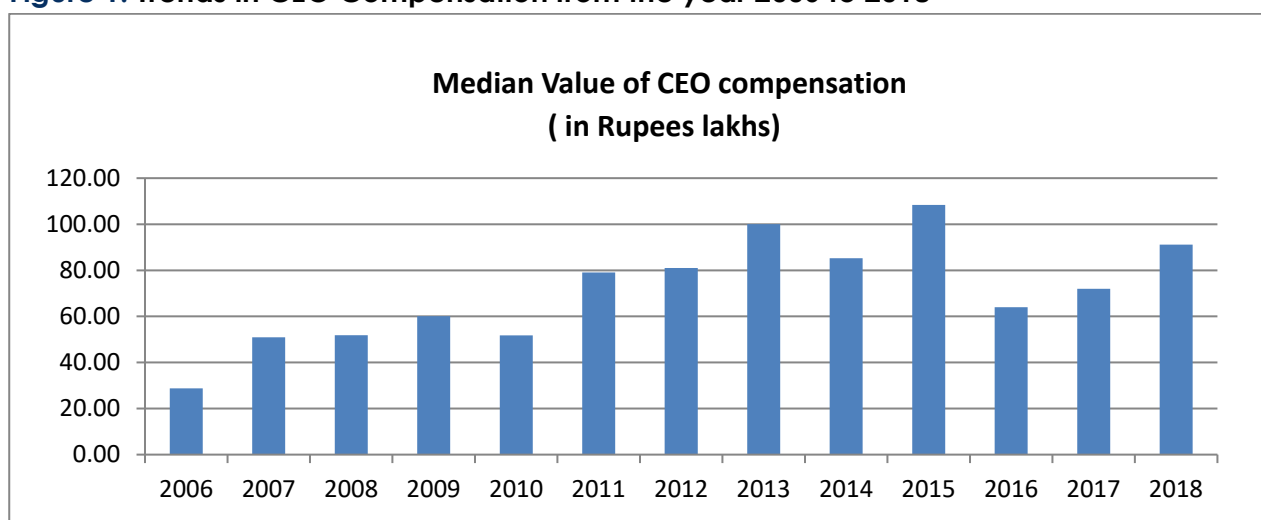


Table 1 and Figure 1 present the descriptive analysis of CEO compensation from the year 2006 to 2018. There has been a continuous rise in the median value of CEO compensation from the year 2006 (Rs. 28.74 lakhs) to 2009 (Rs. 60.09 lakhs). Next, the year 2010, witnessed a fall in the median value of CEO compensation (Rs. 51.71 lakhs). However, the mean value of CEO compensation has shown an increasing trend only. It indicates that companies which were paying a more considerable amount of compensation are not affected by the overall fall in CEO compensation. In other words, a fall in CEO compensation is mainly in the case of small companies. There is no significant change in CEO compensation between the years 2011 and 2012. However, the year 2013 witnessed a considerable rise in the median CEO compensation. (Rs. 100.02, crores). Highest median CEO compensation was recorded in the year 2015 at Rs. 108.41 crores and it was followed by considerable fall in the years 2016(Rs. 64 crores) and the year 2017(Rs. 72 crores). Finally, in the year 2018, there is a significant rise in the median CEO compensation (Rs. 91.14 crores). Besides, the difference the minimum and maximum values of CEO compensation indicate the considerable variations in the CEO compensation in the market.

**Table 2: Year-Wise Distribution of the Descriptive Statistics of Return on Assets (ROA)**

Year	Mean	Median	Max	Min.	Observations (CEO-years)
2006	8.83	6.59	34.78	-7.26	63
2007	10.52	8.05	34.78	-7.47	72
2008	8.13	7.04	34.78	-15.61	95
2009	4.75	3.58	34.78	-29.70	103
2010	6.96	5.22	34.78	-47.47	130
2011	5.89	4.35	30.86	-17.99	133
2012	4.45	3.88	34.78	-19.43	139
2013	4.22	3.00	33.52	-18.21	168
2014	3.72	2.73	34.78	-25.56	185
2015	4.59	3.40	34.78	-44.62	281
2016	4.13	3.23	34.78	-47.47	495
2017	3.75	3.50	34.78	-47.47	565
2018	3.99	3.80	34.78	-47.47	628

**Figure 2: Trends in Median Value of Return on Assets (ROA)**

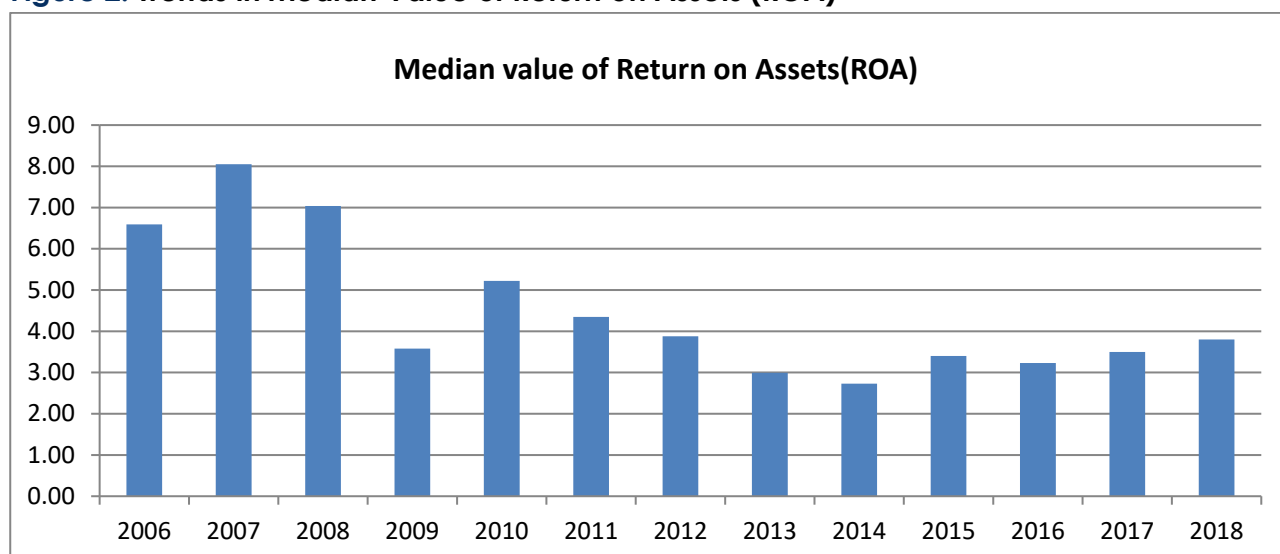


Table 2 and Figure 2 present the trends in the median value of Return on Assets (ROA) from the year 2006 to 2018. Highest median ROA was reported in the year 2007(8.05%). In the year 2009, a significant fall in the ROA of the sample companies can be observed. The lowest value of ROA was reported in the year 2014 (2.73%). Marginal change in the ROA values can be observed in the years 2013(3.00%) and 2014(2.73%). Table 2 also reveals that there are loss-making companies every year. The percentage of loss was very high in the years 2011, 2015, 2016, 2017 and 2018 (from 44% to 47%).

## 5.2 Results of Regression Analysis

**Table 3: Baseline Regression Results [DV =Ln\_Total Remuneration]**

	OLS Regression			Quantile Regression		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<b>CEO_POWER</b>	0.060187***	0.071705***		0.061792***	0.063701***	
<b>CEO_TENURE</b>	0.056993***		0.066872***	0.046320***		0.050471***
<b>ROA</b>	0.017952***	0.018076***	0.019145***	0.014406***	0.014929***	0.017851***
<b>LNSALES</b>	0.356022***	0.357855***	0.357347***	0.402335***	0.401619***	0.406830***
<b>STDROA</b>	-0.012622**	-0.012933**	-0.012553**	-0.006810***	-0.008122	-0.008488
<b>PBV</b>	0.028295***	0.028299***	0.028802***	0.032846***	0.033403***	0.026317***
<b>CAPITAL INTENSITY</b>	-0.048448	-0.045808	-0.045563	-0.015182****	-0.013716	-0.030575
<b>Constant</b>	12.31024***	12.42099***	12.54223***	12.01141***	12.13823***	12.25332***
<b>Observations</b>	3057	3057	3057	3057	3057	3057
<b>R-squared</b>	0.440638	0.431360	0.432235	0.288371	0.283078	0.281552
<b>Adjusted R-squared</b>	0.439354	0.430242	0.431118	0.286737	0.281667	0.280139

\*\*\* indicates 1% level of significance; \*\* indicates 5% level of significance; \* indicates 10% level of significance

Table 3 shows the baseline regression results. The baseline regression model has been constructed in three different variants. In one model, CEO power and CEO tenure are used. In the other two models, CEO power and CEO tenure are used individually. The results of the baseline regression model reveal that CEO power and CEO tenure have a significant positive impact on CEO remuneration ( $p < 0.05$ ).

The results reveal that one unit increase in CEO power leads to a 6% increase in CEO compensation. In comparison, one unit increase in CEO tenure leads to a 5% increase in CEO compensation. The results also show that CEO compensation is tenure-variant which is in line with bargaining theory as evidenced by the studies like (Hermalin & Weisbach, 1998). The 'wald' test results reveal that there is no significant difference between the coefficient of CEO power and CEO tenure. It supports the bargaining theory of CEO compensation, which supports efficient contracting of CEO compensation. (Interalia, Core et al., 1999; Morse et al., 2011; Murphy, 1985; Song & Wan, 2019). In India, S. S. K. Jaiswall & Bhattacharyya, (2016) also evidenced a positive association of CEO tenure with CEO compensation. However, the same study has not proved the statistical significance of the impact of CEO power (measured as holding another executive position, promoter status, etc.). Other studies in Indian literature (Chakrabarti et al., 2012; Parthasarathy et al., 2006) have also proved a significant impact of CEO power. The results of quantile regression are qualitatively similar. However, a marginal decrease in the coefficient values of the variables is observed.

ROA has a significant positive impact on CEO compensation across all the six regression models shown in table 3. It implies that CEO compensation is linked to the financial performance of the firm. Model 1 with OLS regression indicates that a 1% increase in ROA leads to a 1.6% increase in CEO compensation, and it is 1.3% in case of quantile regression. The results are in line with the extant literature in India (S. S. K. Jaiswall & Bhattacharyya, 2016; Parthasarathy et al., 2006). However, the

study by Song & Wan, (2019) in the united states have shown the insignificant impact of ROA on CEO compensation. It shows a difference in the significance of the impact of performance measures on CEO compensation between emerging and developed markets.

Baseline results also highlight the significant positive impact of the size of the firm (LnSales) on CEO compensation. The results are consistent with the relationship hypothesized between size and CEO compensation. The quantile regression has also shown comparatively higher values of the coefficient for the variable 'size' indicating more robustness of the impact of size on CEO compensation. It implies that large-size firms attract comparatively more efficient CEOs by offering more compensation. The large size firms are usually in the limelight of the investors, and even a small decrease in the value of the firm will have a significant negative impact on the share prices in the market. Hence, maintaining sustainable market value is a challenging task to the CEOs. The extant literature supports a positive association between firm size and CEO compensation (Murphy, 1985; Ryan & Wiggins, 2001; Song & Wan, 2019). In the Indian context, studies like S. S. K. Jaiswall & Bhattacharyya (2016) and Chakrabarti et al. (2012) have also shown similar results.

Risk of the firm (STD\_ROA) is having a significant negative impact on OLS regression, but the quantile regression has not proved the statistically significant negative impact of risk on CEO compensation. It implies that risk is not handled effectively by the CEOs, and hence, they are losing compensation premium. However, it is not true for the firms not having abnormal fluctuations in their ROA as evidenced by quantile regression. The study by (Song & Wan, 2019) has not proved the statistical significance of the impact of firm risk. On the contrary, Indian literature (Ghosh, 2006; Jaiswall & Bhattacharyya, 2016) has proved a significant negative impact of firm risk on CEO compensation.

Growth opportunities, as measured by, Price-to-Book Value (PBV) Ratio has a significant positive impact on CEO compensation. It indicates that growth firms in India are paying higher compensation to attract more talented CEOs who can effectively unlock the growth potentials and making the firms reach new heights. The results are in line with the extant literature in developed markets (Guthrie et al., 2012; Song & Wan, 2019) and also emerging markets like India (Jaiswall & Bhattacharyya, 2016). The R-squared and adjusted R-squared values range around 0.44 for all three OLS regressions, while it ranges around 0.29 for all the three quantile regressions.

### 5.3. Checking the Robustness of the Results against the Incumbency of CEOs

The 'efficient contracting view' and 'managerial power view' are two contradicting views on CEO compensation. The 'managerial power view' argues that CEO compensation premium is the result of the rent-extraction ability of a CEO. In contrast, 'managerial ability view' argues that compensation premium is the function of managerial talent. Managerial talent and rent-extraction ability are latent variables; they are positively associated with the power of a CEO. Again, the power of a CEO may stem from his/her talent and/or tenure, and it enables further rent-extraction. As CEO power is linked to both managerial talent and rent-extraction, we can effectively test managerial ability vis-à-vis executive power, only when we can divide CEOs based on their incumbency. For new CEOs, compensation is the function of their talent only. On the other hand, the compensation premium of the incumbent CEO is the function of both his talent and rent-extraction ability. Against their backdrop, the present study, dividends the sample into two parts, i.e., CEO-years with more than three years of CEO incumbency and CEO-years with three years or less than three years of incumbency.

**Table 4: Robustness Test – based on the Incumbency of the CEO- OLS Regression [DV =Ln Total Remuneration]**

	Above 3 years		Below 3 years	
	OLS	Quantile	OLS	Quantile
<b>CEO_POWER</b>	0.046116**	0.043759*	0.065947***	0.066394***
<b>ROA</b>	0.021990***	0.021588***	0.014606***	0.010790***
<b>LNSALES</b>	0.368938***	0.453202***	0.350386***	0.391254***
<b>STDROA</b>	-0.014213	-0.004114	-0.013577**	-0.008124
<b>PBV</b>	0.045415***	0.027658**	0.022864***	0.031448***
<b>CAPITAL INTENSITY</b>	-0.053118	-0.009831	-0.044937	-0.013427
<b>Constant</b>	12.56943***	11.89265***	12.46593***	12.18118***
<b>Observations</b>	917	917	2140	2140
<b>R-squared</b>	0.485142	0.321320	0.406625	0.263810
<b>Adjusted R-squared</b>	0.481747	0.316845	0.404956	0.261739

\*\*\* indicates 1% level of significance; \*\* indicates 5% level of significance; \* indicates 10% level of significance

Table 4 shows the results of the robustness checking of baseline regression results against short-incumbent and long-incumbent CEOs. For this purpose, the sample is subdivided into two groups; one is with CEO with more than three years of incumbency, representing long-incumbent CEOs group and the other; CEOs with up to three years of incumbency, representing short-incumbent CEOs.

In the case of long-incumbent CEOs, one unit increase in CEO power results in a 4.6% increase in CEO compensation. In contrast, in the case of short-incumbent CEOs, one unit increase in CEO power leads to a 6.5% increase in CEO compensation. The results derived by quantile regression are qualitatively similar to baseline regression results. It indicates that power impact will be comparatively less in case of long incumbent CEOs. As per bargaining theory of CEO compensation, managerial talent is tenure variant. Because CEOs learn by experience and improve their talent. Hence, for incumbent CEOs, their compensation is influenced more by their talent rather than by their power. It is against the managerial power view. So, the results are consistent with the baseline regression results.

The results also reveal that the magnitude of the positive impact of ROA is more in case of long-incumbent CEOs compared short-incumbent CEOs. It implies that long incumbent CEOs compensation is more strongly related to the financial performance of the company compared to that of short-incumbent CEOs. There is a similar impact on the size of the company between long-incumbent and short-incumbent CEOs, as indicated by the coefficient values of 'LnSales'. It is in line with the results derived by Song & Wan(2019). However, quantile regression results show notable difference signifying the more positive impact on the size of the company on the compensation of long incumbent CEOs. Standard deviation in ROA which represents the risk of a firm is not having a significant negative impact on the compensation of long incumbent CEOs while it is having the significant negative impact on the compensation of short incumbent CEOs.

On the other hand, quantile regression results indicate non-significance of the impact of risk on both the sub-samples. Also, the positive impact of growth opportunities is more in case of long incumbent CEOs compared to short incumbent CEOs. It implies that long incumbent CEOs can more effectively unlock the growth potentials of the companies by virtue of their experience. The results are consistent with Song & Wan(2019). On the contrary, the reverse is true from the results of quantile regression results. It implies that outliers are considerably influencing the results of the analysis. In other words, if the firm has a very high PBV ratio or a very low PBV ratio, long incumbent CEOs are paid more. For high PBV ratio companies, sustaining the market value is a challenging task while for low PBV ratio companies, improving the market value is a challenging task. The R-squared value and adjusted R-squared value is around 0.49 for the sub-sample of long- incumbent CEOs while it is around 0.41 for short incumbent CEOs.

### 5.4. Checking the Robustness of the Results – Group Companies vis-à-vis Non-Group Companies

Group companies are the most popular in India, and the fundamental motives of CEO power and tenure vary between the group and non-group companies. In group companies, the founding shareholders play a dominant role in the management of the company. CEO control can be held directly or indirectly by founder shareholders. The robustness of the results between the group and non-group companies, therefore, needs to be tested.

**Table 5: Robustness Test - Group Companies Vs Non-Group Companies- OLS Regression [DV =Ln Total Remuneration]**

	Group Companies			Non-Group Companies		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
CEO_POWER	0.092813***	0.102236***		0.036866***	0.052065***	
CEO_TENURE	0.048973***		0.063471***	0.073058***		0.079528***
ROA	0.015207***	0.016876***	0.017028***	0.020479***	0.018429***	0.021221***
LNSALES	0.315478***	0.311018***	0.324635***	0.316972***	0.330467***	0.315828***
STDROA	-0.021860***	-0.023859***	-0.023633***	-0.000967	3.05E-05	-0.000630
PBV	0.041079***	0.039390***	0.040934***	0.013313*	0.015562	0.013940*
CAPITAL INTENSITY	-0.046700	-0.045512	-0.043959	-0.020365***	-0.012604	-0.017593
Constant	12.75874***	12.91014***	13.05839***	12.36380***	12.42423***	12.52028***
Observations	1701	1701	1701	1356	1356	1356
R-squared	0.389410	0.382505	0.369276	0.404881	0.385701	0.400760
Adjusted R-squared	0.386885	0.380318	0.367042	0.401790	0.382969	0.398095

\*\*\* indicates 1% level of significance; \*\* indicates 5% level of significance; \* indicates 10% level of significance

**Table 6: Robustness Test - Group Companies Vs Non-Group Companies-Quantile Regression [DV =Ln Total Remuneration]**

	Group Companies			Non-Group Companies		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
CEO_POWER	0.101085***	0.112128***		0.030355**	0.048864***	
CEO_TENURE	0.037590***		0.058581***	0.056211***		0.057816***
ROA	0.012841***	0.014255***	0.013080***	0.019757***	0.017756***	0.020789***
LNSALES	0.353493***	0.350038***	0.365123***	0.355557***	0.366163***	0.356525***
STDROA	-0.014579*	-0.016798**	-0.020121**	0.005824	0.001996	0.007549
PBV	0.036944***	0.033254***	0.036419***	0.023367**	0.028844***	0.024999**
CAPITAL INTENSITY	0.019923	0.004381	0.021123	-0.001953	-0.001622	0.000249
Constant	12.48958***	12.62761***	12.79940***	12.13591***	12.18397***	12.24296***
Observations	1701	1701	1701	1356	1356	1356
R-squared	0.251602	0.247737	0.234120	0.243657	0.235122	0.241249
Adjusted R-squared	0.248507	0.245072	0.231408	0.239729	0.231720	0.237874

\*\*\* indicates 1% level of significance; \*\* indicates 5% level of significance; \* indicates 10% level of significance

Table 5&6 shows the results of regression analysis done with the sub-samples of group companies and non-group companies. The model -1 results reveal that for Group companies' CEO power has more impact compared to CEO tenure and reverse is true for non-group companies. It implies that managerial power view maintained in case of group companies and managerial ability view for non-group companies. The results derived in quantile regression are also qualitatively similar. Notwithstanding to the impact of CEO power, when CEO tenure is only considered in the model (i.e., model 3), there is a marginal difference in the magnitude of the impact of CEO tenure between the group and non-group companies. It indicates that it is the power of the CEO, which differentiates their compensation in group companies with that of non-group companies. The Indian literature (Chakrabarti et al., 2012; S. Ghosh, 2010; M. Jaiswall & Firth, 2009) has also proved that CEOs of group firms get rent-extraction due to their power. However, the study like A. Ghosh(2006) have not proved the same. As shown in model 1, the positive impact of ROA is more for non-group companies compared to that of group companies. At the same time, the reverse is valid for the positive impact

of PBV between non-group and group companies. The results of quantile regression are qualitatively similar compared to the same derived by OLS regression for the group and non-group companies.

## 6. Conclusion and Policy Implications

The present study aims to examine whether it is rent-extraction or efficient contracting, which decides the compensation of CEOs in Indian companies. The study draws the sample of all the listed companies which are having the data relating to CEO characteristics from CMIE Prowess Database from the year 2006 to 2018. By using the sample of 3070 CEO-years in modelling the regression analysis under the framework of ordinary least squares and quantile regression, the study draws the findings. It provides inferences linking them to the extant literature in the Indian context and other countries.

The results of the baseline model reveal that bargaining theory is maintained in determining the CEO compensation in Indian companies because there is negligible difference between the impact of CEO power and CEO tenure. Bargaining theory assumes that CEO talent is tenure-variant (Hermalin & Weisbach, 1998). Based on the significant positive impact of the size of the firm on CEO compensation, it can also be inferred that large firms and the firm with growth potential are trying to attract more talented CEOs by offering more competitive compensation. The more insights into the findings of the baseline analysis were derived by subdividing the sample into long incumbent and short incumbent CEOs. The results reveal that managerial talent is tenure-variant supporting the bargaining theory of CEO compensation. The results also imply that long incumbent CEOs can more effectively unlock the growth potentials of the companies by virtue of their skill and talent learned through experience. Maintaining market value for high-value stocks and improving the market value for low-value stocks is a challenging task for CEOs which is highly rewarded.

In corporate India, group companies are most common, and the style of corporate governance in those companies is distinct from standalone companies. In group companies, founder members will have a more dominating role in all the companies in the group. They play an instrumental role in the appointment of CEOs, and CEOs are usually loyal to the founder members. In light of this, the present study tests the robustness of the baseline results against the group and non-group companies in India. The results reveal that in group companies, CEO compensation is strongly influenced by their power compared to that of non-group companies. It can be attributed to the fact that in group companies' CEOs are founder members or, close relatives of such founder members. The results are in line with extant literature in the Indian context.

The results indicate that the CEO professionals' market is becoming more efficient, and CEO compensation is more tenure-variant. Despite this, rent extraction exists in Indian companies which are under a common group. It is expected to draw the more attention of the policymakers to see that quality and transparency in group companies is improved and the fruits of increasing professionalism in CEO professionals market reach the group companies also. It will strengthen the confidence of institutional investors in group companies. To enhance the professionalism, transparency and unbiasedness of CEOs in India companies should be improved. The board of directors should also see that appointment of CEOs should be made impartially, keeping in view the interest of all the stakeholders. To empower the board in this regard, the independence of the board should be strengthened, and a search committee nominated for CEO appointment should be more transparent.

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