

# Determinants of CEO Compensation

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**Abstract-** Using a panel data analysis, the study explores the influence of size of a firm, firm-performance, Chief Executive Officer (CEO) duality and management pattern on CEO compensation. The final sample for the study comprises of a total of 300 Indian companies over a period of three years (2007-08 to 2009-10). The proposed relations are tested using the random-effects generalized least squares regression analysis. The age of the company and industry are introduced as the control variables. In conformity with the proposed hypotheses the analysis reveals that the size of the firm and the performance of the firm have a positive influence on firm performance. However, as regards the management pattern, the analysis reveals an inverse relationship. Further, no relationship is found between CEO duality and compensation. The findings of the study are discussed and implications for the managers are highlighted.

**Keywords-** CEO compensation; family managed firms; professionally managed firms; India

## 1. INTRODUCTION

The CEO of any organisation should work in the interests of the shareholders. But the possibility that this will not happen and that the CEO will work in his own interest as opposed to the interests of the shareholders is always there. This possible discrepancy can be taken care of by aligning the interests of the CEO with the interests of the shareholders. This can be done by tying the compensation of the CEO to the performance of the firm. The studies have found that the CEO compensation depends on the relative power of the CEO over the board of directors and the size of the firm. If the firm is large and the CEO is more powerful, he will try to make sure that his compensation is tied to the sales and not the performance. In doing this he ensures that his compensation is secured against the possible downfalls in the performance of the firm.

Whether the firm is professionally managed or family managed also has a significant role in deciding the compensation of the CEO. In the family managed firms, there is no conflict of interests as per the agency theory since the ownership and control are in the same hands as opposed to the professionally managed firms. CEO compensation and its various determinants have been the focus of research for a long time. However, the research has largely been confined to studies concerning the US. Though increasingly researchers have started to take into consideration the other economic contexts, still it has not been that prevalent. Particularly as far as the emerging economies are concerned, the dearth of research is hard to ignore. The present study by taking the case of CEO compensation in an emerging economy, India, thus contributes towards this still under-researched context.

Further, though previously studies have explored the relationship of CEO compensation with the variables of

firm performance, firm size and duality of the CEO, however, there has been no study exploring the influence of the management pattern on the CEO compensation. Management pattern means whether the firm is professionally managed or family managed. The paper by studying this relationship brings to light the role the management pattern can play in CEO compensation, thus, contributing towards the theory of executive compensation.

This paper is organized as follows: A literature review linking the performance, size, and management pattern to the CEO compensation is followed by the hypotheses which are tested on 300 companies out of the BSE 500 Index of the Bombay Stock Exchange. This is followed by an analysis of data. In the final section the results are discussed and implications for the managers pointed out.

## 2. LITERATURE REVIEW

### 2.1. Performance as a determinant of CEO compensation

Agency theory has its role to play in the dynamics of the performance of the firm deciding the compensation of the CEO. Jensen and Meckling (1976) [13] discussed the problem of trust that arises when the principals (i.e. investors) have no control over the day to day functioning and decision making of the agents (i.e. corporate executives). Making the interest of the agents fall in line with the interests of the principals is a way out of this problem and performance being used as a determinant of compensation is a way of achieving it in practice (Gunasekaragea & Wilkinson, 2002) [10]. Fama (1980) [5] noted the way in which this problem of trust is taken

care of by letting the performance of the firm decide the compensation of the CEO.

Jensen and Murphy (1990) [14] analysed the sensitivity of CEO compensation to performance of the firm. They found a positive and statistically significant relationship between the CEO compensation and changes in shareholders' wealth. It was stated that this sensitivity was not large enough to be an indicator of the principal-agent theory at work. However, Haubrich (1994) [11] used numerical simulations to state that these findings were consistent with the principal-agent theory.

Ramaswamy, Veliyath, and Gomes (2000) [16] researched the determinants of CEO compensation in India and found that CEO compensation was positively related to firm performance.

Ghosh (2006) [8] studied the relationship between performance and CEO compensation in the Indian context. He used the data from 462 firms from the manufacturing sector for the period 1997-2002 and found that CEO compensation depends only on current year performance. This finding contradicted the findings of the existing studies that CEO compensation depends on current as well as past year firm performance.

## **2.2. Size as a determinant of CEO compensation**

Baumol (1959) [2] and Marris (1963) [15] suggested that in large firms, managers seek to maximise sales and not profit or shareholders' wealth. This is referred to as sales-maximisation hypothesis.

Under perfectly competitive conditions in the managerial labour market, the CEO should earn a marginal revenue product but even at a minimum he should earn what he would be earning at his or her next best employment opportunity. The marginal revenue product is the incremental profit that he or she earns for the company due to his or her superior management skills. The number of units sold in a small firm being low, even a large increase in managerial efficiency does not result in a significant increase in aggregate profits. However, in large firms, even a small increase in profits per unit sold results in a large increase in profits because of the sheer number of units sold. Thus, large firms are in a position to pay their CEOs more. The structural complexity of large firms also calls for higher compensation to the CEOs (Agarwal, 1981; Becker, 1964 and Roberts 1956) [1][3][17].

For the present study, sales have been used as a proxy for size of the firm. (Sridharan, 1996) [18].

## **2.3. Family managed/professionally managed firms as a determinant of CEO compensation**

Schulze, Lubatkin, Dino, and Buchholtz (2001) [19] showed empirically that family ties ensured employment security to CEOs. The CEOs sacrificed huge earnings for a secure employment.

James (1999) [12] argued that family managed firms dominate as a form of business organisation because the family managers have a longer horizon which negates many of the ills encountered in a form of organisation where ownership and control are combined.

Daily and Dollinger (1992) [4] indicated evidence that family owned and managed firms have performance advantages over firms where ownership and control are separated.

Gomez-Mejia, Nufiez-Nickel, and Gutierrez (2001) [6] argued that family CEOs were unlikely to compete in the external labour market and therefore the rationale of a minimum pay equal to the next best alternative does not apply to them. This "family handcuff" logic reduces to need to pay family CEOs at par with the professionals.

Gomez-Mejia, Larrazza-Kintana and Makri (2003) [7] showed that CEOs who are family members of the ones controlling the firm receive lower pay as compared to professionals.

## **2.4. Duality as a determinant of CEO compensation**

Duality means that the roles of chairman of board and CEO of a company vest with the same individual.

The agency theory favours that the roles of CEO and chairman of board are with different individuals, that is, it does not support duality. Duality increases power with a single individual (Gul and Lueng, 2004), reduces the ability of the board and restricts its decision-making power (Westphal, 1999). Thus, a CEO who is also the chairman of the board may have increasing control over the compensation he secures as compared to if he is not the chairman of the board.

On the basis of the above literature review it is hypothesized:

Hypothesis 1. The performance of a firm is positively related to the compensation of the CEO.

Hypothesis 2. The size of the firm (as measured by the sales of the firm) is positively related to the compensation of the CEO.

Hypothesis 3. Family managed firms will have lower CEO compensation as compared to professionally managed firms.

Hypothesis 4. CEO duality is positively related to the compensation of the CEO.

## **3. DATA AND METHODOLOGY**

For the sample used in the study, the list of companies forming the BSE 500 as on 31<sup>st</sup> March 2010 was used. The companies were arranged in descending order of market capitalization and then the first 300 were selected out of it for which the data was available. The data was collected for a period of three years, ranging from 2007-08 to 2009-10. The data was collected from the Prowess

database provided by the Centre for Monitoring Indian Economy. The panel data set was analyzed using the Stata software.

### 3.1. Dependent Variable

#### 3.1.1. CEO Compensation

The compensation of the CEO is his/her total remuneration. The total remuneration comprises of basic salary, Director's sitting fees, bonus and commission, perquisites, retirement benefits and contribution to provident fund

### 3.2. Independent Variables

#### 3.2.1. Performance

Return on assets is used as a measure of performance. It is an accounting based measure; the measure is calculated by dividing net profit by total assets.

#### 3.2.2. Size

To measure size of the company the log of sales is used.

#### 3.2.3. Professionally managed or family managed

A firm is considered family managed if its CEO is the promoter or from promoter's family. If that is not the case, the firm is considered to be professionally managed. The management is measured in terms of dummy variable, where, 1 means the firm is professionally managed while 0 means it is family managed

#### 3.2.4. CEO duality

CEO duality is measured as a binary variable, 1 meaning CEO is both the Chairman and the CEO of the firm and 0 that he is not.

### 3.3. Control Variables

#### 3.3.1. Company Age

Company age is the number of years passed since the incorporation of the company as disclosed in the Prowess database.

#### 3.3.2. Industry

Industry dummy has been introduced to control the influence of Industry specificity.

## 4. ANALYSIS

The descriptive statistics are shown in Table 1. The statistics reveal the average compensation of the CEO is to be just over Rs 3 crores, with the sales on an average amount to Rs.5893.2 crores for the sample firms. The mean return on assets is 13.68 times, the mean age of a company is around 35 years. The correlation matrix reveals the correlation among various variables. There does not seem to be a problem of multi-collinearity, still to be sure the variable inflation factors (VIF) are calculated. The average VIF score is 1.04 and the score does not exceed 2 for any of the variables which is much below the acceptable level of 10. The Durbin-Watson (D-W) statistic is used to inquire if any problem of auto-correlation is present.

The D-W statistic is 1.7, since the value is around 2 the problem of auto-correlation can be ruled out.

Table 2 illustrates the random effects (RE) regression model to analyze the impact of performance, management and scale of operations on performance of a firm. The data is analyzed using the random effects GLS regression as the Hausman test reveals that RE model should be used for analysis rather than the fixed effects mode

Table 1. Descriptive Statistics and Correlations

	Mean	S.D.	Pair-wise Correlations					
			Compensation	ROA	Size	Management	CEO Duality	Company Age
<b>Compensation</b>	3.15	4.36	1					
<b>ROA</b>	13.68	21.34	0.0981*	1				
<b>Size</b>	5893.2	16629.8	0.1741*	0.0071	1			
<b>Management</b>	-	-	-0.1513*	0.0158	0.1350*	1		
<b>CEO Duality</b>	-	-	0.0418	0.0337	-0.0215	0.0174	1	
<b>Company Age</b>	34.84	22.61	0.038	0.1462*	0.1142*	0.1829*	.0934*	1

n=900 for all variables. Compensation and sales are in rupees crores, Company age is in years. The management and CEO duality being dichotomous variables, mean and standard deviation is not computed.\*p<.05. S.D. is standard deviation

Table 2. Random Effects GLS Regression Analysis of effect of ROA, Management and Sales on compensation of CEO

Variable	All companies
Constant	-.623***
Return on Assets	.0521***



Size	.254***
Management f/p	-.362***
CEO Duality	.018
Company Age	.0188*
Industry Dummy	Included
Wald-chi statistic	24.67***
R <sup>2</sup>	.08

N=900 for all variables. \*\*\*p<.05, \*p<.10

The model reveals all the variables of interest significantly related to firm performance. The return on assets is positively related to compensation, while if the CEO is a professional and not a family member it has a negative effect on the compensation of the CEO. The scale of a firm measured by sales positively effects compensation, meaning larger firms will be paying a larger compensation.

## 5. RESULTS AND DISCUSSION

Performance as measured by Return on Assets (ROA) is positively related to compensation of the CEO as shown in Table 2. Therefore, Hypothesis 1 is supported. This is a consequence of the alignment of the interest of the CEO with the interests of the shareholders. The only way to increase his wealth is by increasing the wealth of the shareholders and in this way the interests of the shareholders are protected.

Sales (acting as a proxy for size of the firm) are positively related to compensation of the CEO as shown in Table 2. Therefore, Hypothesis 2 is supported. This happens when the CEO has greater power vis-à-vis the board and exercises a say in deciding the determinants of his compensation.

The value of -.362, significant at the .05 value of p, against the entry of Management f/p in Table 2 shows that compensation of CEO is higher in family managed firms as opposed to professionally managed firms. Thus with respect to Hypothesis 3 the results seem to reveal the opposite scenario than the one proposed.

As far as duality is concerned the results reveal no significant relationship between duality and CEO compensation. Thus, Hypothesis 4 is not supported.

## 6. MANAGERIAL IMPLICATIONS AND FUTURE RESEARCH

The results of the study have some significant implications for managers. The Board of Directors should ensure that the interests of the shareholders are safeguarded against the selfish interests of the CEO which may be disastrous for the firm. This can be done by linking the compensation of the CEO to the performance

of the firm. This study also has something to say about the power politics at play within the firm. If the CEO is more powerful than the board, then he may fix his compensation as a function of the sales of the firm thus immunizing himself from the fluctuations in profitability of the firm. This may seriously jeopardise the interests of the shareholders. However, having the knowledge of this possibility, the board may take steps to keep the power of the CEO in check. The finding of the study regarding the linkage of family managed/professionally managed firms with the compensation of the CEO, which contradicted what the literature had to say on the issue, is an important avenue for future research. It is important to know about the effect of management pattern on the compensation of the CEO.

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