

EARNINGS MANAGEMENT AND EXECUTIVE COMPENSATION: A STUDY OF THE INDIAN MANUFACTURING SECTOR

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Abstract *We examine whether executive compensation influences the earnings management activities in a firm. Earnings management is broadly classified as accrual management and real earnings management. Information asymmetry between managers and shareholders provides the incentive to the former to manage earnings for their personal benefits. We find that a higher compensation ratio reduces accrual management (discretionary accruals) and real earnings management, which contradict the findings of Shuto (2007), and Adut et al. (2013). This shows that managerial compensation improves the earnings quality of firms. The information asymmetry hypothesis is evident in firms, wherein increasing firm performance increases tax accruals that reduce firm value. The study identifies the threshold limits of earnings management with different levels of executive compensation by classifying the data into full sample and sub sample (overvalued and undervalued firms). Undervalued firms tend to have higher executive compensation as the level of earnings management (discretionary accruals and real earnings management) increases first to mimic the reporting strategies of overvalued firms and then subsequently as a tax planning strategy to improve firm value.*

Keywords: *Earnings Management, Executive Compensation, Discretionary Accruals, Earnings Smoothing, Real Earnings Management*

INTRODUCTION

Executive compensation has gained significance in India since liberalisation, increase in foreign institutional investors, and retail participation in the domestic equity market (Subramanian et al., 2011). Sharp rise in executive compensation compared to non-managerial employee compensation leads to agency cost issue and managerial effort to reduce shareholder's value to sustain higher compensation. A higher compensation to executives poses a threat to the entire eco-system of firms; therefore, regulators press the demand for pay-for-performance structure to reduce agency cost and exertion of higher managerial power.

The remuneration committee, being part of the corporate governance system, makes decisions on the compensation structure of executives, which includes salary, bonuses, stock options, and other incentives. Formulating a fair compensation structure that aligns the interest of shareholders and executives has operational and value implications for a firm. Executive decisions are expected to maximise shareholder's wealth and protect their interests. Executive compensation can be linked to accounting profits and market valuation, such that managerial decisions would optimise firm's performance. Feltham and Xie (1994) point out that

accounting and market performance measures of executive compensation are informative and provide incentives to executives. Accounting-based compensation is more prevalent in firms where managers are rewarded based on their effort, unlike price-based compensation where rewards are based on market movements that may be unrelated to managerial efforts (Murphy, 2001; Adut et al., 2013).

Top managers in a firm are responsible for regular operational decisions (Cai & Zheng, 2016) and take part in generating financial information that significantly influences the reported earnings. Information asymmetry between managers and shareholders provides incentives to the former to manage earnings for their personal benefits. Managers in low-value firms tend to mimic the reporting strategies of high-value firms to project higher earnings (Chaney & Lewis, 1995). Executives in a firm exercise earnings management to project a higher financial performance at the cost of long-term growth if they are unable to meet earnings target. However, they decide to forego investments with the highest internal rate of return to ensure their employment in the long run (Elliott & Elliott, 2011). This results in sub-optimal investment decisions, reducing shareholder's value. The managers smooth economic earnings (Truman & Titman, 1988) to reduce earnings volatility, and to reduce their borrowing cost. Smooth income leads to a perception

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among investors that the firm is less risky. Managers tend to smooth earnings to smooth their managerial compensation (Lambert, 1984). Managerial compensation is linked to expected value of future performance of the firm, thereby motivating managers to project higher earnings over the years (Chaney & Lewis, 1995) through earnings management.

Executive compensation significantly influences earnings management in a firm (Balsom, 1998; Shuto 2007; Adut et al., 2013). Review of literature indicates an examination of the association between executive compensation and earnings management in the US (Adut et al., 2013). The compensation structure in a firm has both economic and policy implications. Economic implication is largely dependent on the agency cost; Indian firms are largely characterised with the issue of 'horizontal' agency problems, unlike 'vertical' agency issues in developed markets. Indian firms have distinguishing characteristics pertaining to their ownership pattern compared to their western counterparts. Most of the listed firms in India are largely concentrated in the hands of promoters, with a large number of firms affiliated to business groups. Managers are motivated to derive private benefits, specifically in countries with high promoter stake and weak institutional framework, through earnings management (Leuz et al., 2003). From a regulatory perspective, policymakers are concerned about the executive compensation, especially after the financial crisis in 2008 in India (Balasubramanian et al., 2013). The aftermath of financial crisis led to lapses in corporate governance of large listed firms, such as the Satyam fraud reported in 2009 (Subramanian, 2011), and many that followed in recent years (Kakati & Goswami, 2019). Due to rise in international investments in the Indian corporate sector and increased retail participation in the capital market, the executive compensation policy is gaining significance (Raithatha & Komera, 2016). In lieu of maintaining governance standards in a firm and alignment with international best practices, we argue that examining the executive compensation structure in India and its implication on earnings quality is very important. Studies on executive compensation in the Indian context is found to be focused much on examining the relationship between performance and executive compensation (See for example, Raithatha & Komera, 2016; Parthasarathy et al., 2006), indicating a scarcity of research exploring the implications of compensation on reporting quality of firms. Based on the aforementioned arguments and limited extant literature examining the link between executive compensation and earnings quality from the Indian perspective, this study is an attempt to fill that gap.

The executive compensation package in India includes different components, such as salary, annual bonus, stock option, pension benefits and other perquisites. Managers are compensated with a fixed income, and sometimes with stock options. Stock options are gaining popularity in India,

though a report by Ernst and Young (Comprehensive Guide, 2017) suggests that allocation of the stock-based incentive programme is very low, compared to their multinational counterparts. Raithatha and Komera (2016) found that a higher CEO compensation is associated with higher firm performance in India. Parthasarathy et al. (2006) report that the compensation is higher for promoters as CEO in a firm.

The present paper is motivated to explore the link between compensation and earnings management based on the information asymmetry hypothesis. The objective of the paper is three fold: first, to analyse the impact of compensation structure on accrual management (discretionary accruals and earnings smoothing) and real activities management; second, identifying the threshold limits of earnings management with different levels of executive compensation; and third, to determine threshold limits of earnings management and executive compensation for overvalued and undervalued firms, to investigate the evidence of information asymmetry hypothesis. The remainder of the paper is structured as follows. Section 2 summarises the review of literature. Section 3 discusses the research methodology. Result and discussion are covered in Section 4. Section 5 concludes with summary, future scope, and limitations.

EARNINGS MANAGEMENT AND EXECUTIVE COMPENSATION: A LITERATURE REVIEW

The executive compensation structure is found to be a motivating factor enabling managers to exercise their discretion over accounting choices or real economic actions to manage reported earnings. Adut et al. (2013) argue that firms may prefer a higher reporting quality, as it enhances the reputation of firms among various stakeholders, such as creditors, customers, and suppliers, enabling them to have better trade negotiations and reducing cost of financing. Investors, specifically large institutional investors with frequent trading behaviour favour transparent reporting, as it reduces information risk. This further enables firms to obtain financing at lower cost, thereby reducing the overall cost of capital and improving firm performance. Firms may therefore motivate managers with a higher level of compensation to report high quality earnings, enabling them to improve their reputation in the financial market. Higher transparency in reporting reduces agency cost and lowers information asymmetry, suggesting a negative relationship between executive compensation and earnings management.

On the contrary, firms belonging to a competitive industry may not encourage disclosing private information to outsiders as certain firm level information may be utilised by potential competitors for their own benefits, which may be risky and affect the firm's future cash flow. Hence,

managers are incentivized with higher compensation to disclose less information through earnings management methods, which increases agency cost due to information asymmetry. This results in a positive relationship between executive compensation and earnings management. Balsom (1998) found a significant positive association between CEO cash compensation and discretionary accruals. The result suggests that as the correlation between reported income and compensation increases, the extent of earnings management using accrual management also increases, if the benefit of increasing accrual management exceeds the cost. The cost of earnings management includes conflict with auditors, reduced income due to accruals reversal, deferral costs associated with maintenance, R&D, advertising, and training (Balsam, 1998). Shuto (2007) examined the relationship between discretionary accruals and executive compensation among Japanese firms and found that managers with a higher compensation engage in earnings management via discretionary accruals.

Adut et al. (2013) examined executive compensation as a specific governance mechanism measured in terms of incentives such as salary, bonus, and other forms of compensation. They analysed the link between compensation amount and earnings management, classified as predictive and opportunistic¹. The result indicates a significant positive association with predictive earnings management and a negative relationship with opportunistic earnings management. In addition, if earnings resulting from discretionary accruals are more informative about future returns, firms tend to pay higher incentives to executives. Thus, earnings management has the potential to influence the quantity and structure of executive compensation (Adut et al., 2013).

The above arguments indicate that the relationship between executive compensation and earnings management is inconclusive due to contradictory empirical evidences. Hence, we formulate the following hypothesis (in null form):

H1: Executive compensation does not impact accrual management (discretionary accruals and earnings smoothing).

H2: Executive compensation does not impact real earnings management.

RESEARCH METHODOLOGY

Sample Description and Variable Measurement

The sample consists of firms belonging to the manufacturing sector, listed in the National Stock Exchange and Bombay

Stock Exchange for the period 2004-2013 (Palaniappan, 2017; Majanga, 2015), derived from the PROWESS database, maintained by the Centre for Monitoring Indian Economy (CMIE).

Literature identifies several measures of executive compensation. Jensen and Murphy (1990) measure pay for performance sensitivity (regression coefficient beta) as the dollar change in CEO wealth to dollar change in shareholder's wealth. In addition, they identified change in remuneration with respect to change in market value as a proxy for executive compensation. Director's remuneration is specifically considered, as they are responsible for the conduct and management of firm's activities through board meetings; and as a team, they influence managerial decisions. Managing directors and whole-time directors (specific categories of directors, Companies Act 2013) have the power to manage the affairs of the firm, under the supervision of the board (Veer, 2015). They tend to take personal interest in the firm, as their source of income is dependent on the firm's performance.

A slightly modified measure of Jensen and Murphy (1990) is used to measure executive compensation. It is measured in terms of total incentives paid to directors (salary, bonus, and pension fund) as a percentage of total market capitalisation, as indicated below:

$$\text{Executive compensation} = \frac{\text{Director's remuneration}}{\text{Market capitalisation}}$$

Director's remuneration includes director's salary, sitting fees, bonus and commission, perquisites, retirement benefits, and contribution to the provident fund. A higher ratio implies that managerial compensation increases with market capitalisation. For robustness check, the managerial remuneration is also measured relative to net profits and total assets.

Earnings management is captured using accrual management (discretionary accruals and earnings smoothing) and real earnings management. Discretionary accruals is captured using modified Jones model (Dechow et al., 1995) and earnings smoothing is measured as the ratio of standard deviation of earnings (past three years) to standard deviation of cash flows (past three years) (Dechow et al., 2010; Leuz et al., 2003). Following the model suggested by Roychowdhury (2006), total real earnings management is calculated based on the absolute value of abnormal level of cash flow from operation, abnormal level of production cost, and abnormal level of discretionary expenditure.

Control variables, such as leverage (total borrowings to total assets), tangible assets (net fixed assets/total assets), size (natural logarithm of total assets), age (difference between the year in which firm exists in the sample and year

¹ Predictive earnings management relates to future cash flow of firms while opportunistic earnings management does not (Adut et al., 2013).

of incorporation of firm), growth opportunity (change in firm's asset over successive periods), and audit fees (natural logarithm of audit fees), are also employed in the analysis (Bhaduri, 2002; Chakraborty, 2010; Kim et al., 2003; Pfaffermayr et al., 2008; Robin & Wu, 2014; Mitra et al., 2007) as the determinants of earnings management.

RESULTS AND ANALYSIS

Data Characteristics of Executive Compensation

The pattern of compensation structure over the ten-year period (2004 to 2013) suggests an initial decrease in compensation with respect to market capitalisation

through the years 2004 to 2005 (7.3% and 4.9% of market capitalisation) (Table 1). There is consistent increase in compensation level from 2006 to 2009 (5.7%, 6.3%, and 6.4% of market capitalisation). Compared to 2009, there is a slight reduction in compensation from 2010 to 2012 that gradually picked up in 2013 (10% of market capitalisation).

Compensation in terms of net profit shows a consistent increase (8.7% to 12.9% of net profit) during 2004 to 2013, except a slight decline in the period 2005 to 2006 (9.1% to 7.8%) and 2009 to 2010 (12% to 11%). Compensation measured with respect to total assets show a gradual increase during the period 2004 to 2013 (1.9% to 3.7% of total assets). Standard deviation of compensation with respect to market capitalisation and net profit is found to be higher, compared to the standard deviation of compensation to total assets.

Table 1: Executive Compensation Pattern over 2004 to 2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Ratio of Directors' Remuneration to Market Capitalisation										
Average	0.073	0.049	0.057	0.064	0.063	0.093	0.073	0.082	0.086	0.100
Std. Dev.	0.273	0.204	0.240	0.252	0.250	0.300	0.285	0.301	0.290	0.318
Ratio of Directors' Remuneration to Net Profit										
Average	0.087	0.091	0.078	0.094	0.099	0.120	0.114	0.121	0.125	0.129
Std. Dev.	0.309	0.293	0.242	0.297	0.307	0.383	0.326	0.338	0.365	0.377
Ratio of Directors' Remuneration to Total Assets										
Average	0.019	0.023	0.026	0.033	0.031	0.035	0.041	0.041	0.039	0.037
Std. Dev.	0.100	0.107	0.109	0.138	0.126	0.140	0.158	0.152	0.145	0.143

Relationship between Earnings Management, Executive Compensation, and Control Variables

Correlation analysis suggests that there exists a significant correlation between discretionary accruals (positive) and earnings smoothing (negative) and executive compensation, at 5% and 1% level, respectively (Table 2). Higher level of compensation can be related to lower reporting quality

through discretionary accruals. Earnings smoothing reduces with increase in compensation. Control variables considered for analysis (leverage, tangibility, size, age, and audit fees) have a significant relationship with executive compensation. Leverage shows a significant positive correlation, while other significant control variables (tangibility, size, age, and audit fees) exhibit a negative relationship with executive compensation.

Table 2: Correlation Analysis

	DA	ES	REM	EXEC	LEV	TANG	SIZE	AGE	GRW	AUDIT
DA	1.00									
ES	0.02*	1.00								
REM	0.21**	-0.01	1.00							
EXEC	-0.01	-0.03**	-0.01	1.00						
LEV	0.07**	0.09**	-0.03**	0.01	1.00					
TANG	-0.03**	0.04**	0.00**	-0.02**	0.14	1.00				
SIZE	-0.04**	-0.07**	-0.02**	-0.05**	-0.14	-0.06**	1.00			
AGE	-0.03**	-0.01	0.02	-0.01**	-0.11	-0.08**	0.28**	1.00		
GRW	0.06**	0.00	0.04	-0.02	-0.02	0.00	0.01	-0.07**	1.00	
AUDIT	-0.07**	-0.01	0.03	-0.02	-0.10**	-0.09**	0.33**	0.10**	-0.01	1.00

Note: 1. ** and * represent significance at 5% and 1% level, respectively.

2. EXEC_COMP: Executive compensation, DA: Discretionary accruals, ES: Earnings smoothing, REM: Total real earnings management, LEV: Leverage, SIZE: Size, AGE: Age, GRW: Growth opportunity, and AUDIT: Audit fees.

Impact of Executive Compensation on Earnings Management

The result of the Hausman test ($\text{Chi}^2 = 97.15$, $p = 0.000$) indicates that fixed effect regression estimate is appropriate for the given sample. The link between executive compensation and earnings management is examined through the following model:

$$\text{Model 1: } EM_{it} = \alpha + \beta_1 EXEC_{it} + \beta_2 LEV_{it} + \beta_3 TANG_{it} + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \beta_6 GRW_{it} + \beta_7 AUDIT_{it} + \varepsilon_{it}$$

Where, EM: Earnings management, EXEC: Executive compensation, LEV: Leverage, SIZE: Size, AGE: Age, GRW: Growth opportunity, AUDIT: Audit fees, β_s : Coefficients corresponding to each explanatory variable, ε_{it} : the disturbance term with zero mean and constant variance, is uncorrelated with the regressors, and varies across N individual firms (individual specific effect) and across T time periods (time specific effects).

The overall fixed effect regression model (discretionary accruals, earnings smoothing, and real earnings management) is statistically significant at 1% level (Table 3), hence rejecting the null hypotheses H1 and H2. Result indicates that on an average, 8% and 26% of variation in discretionary accruals and earnings smoothing, respectively, is explained by executive compensation and other control variables. The model examining the influence of executive compensation on real earnings management explains 52% of the overall variation. The significance of intercept in model estimation indicates that other factors show a significant impact on earnings management activities.

Executive compensation measured with respect to market capitalisation is negatively related to discretionary accruals for the full sample (Table 3), indicating that a higher executive compensation reduces earnings management activity through discretionary accruals, which is contrary to the findings of Shuto (2007), and Adut et al. (2013). Higher executive compensation shows a significant negative relationship with real earnings management. Executives indulge in less real earnings management as compensation increases, considering long-term cost associated with managing real activities. They tend to focus on enhancing the quality of reported earnings to maintain the reputation of firms among various stakeholders, and to ensure transparency in disclosure to reduce the information asymmetry. Higher executive compensation therefore motivates top-level executives to limit earnings management activities.

Earnings smoothing is not influenced by executive compensation; however, a low level of leverage and younger firms report higher reporting quality. Growth opportunity positively influences both discretionary accruals and real

earnings management activity, while audit fee has a negative influence on discretionary accruals and a positive influence on earnings smoothing.

Table 3: Impact of Executive Compensation on Earnings Management

Dependent Variable	Accrual Management		Real Earnings Management
	Discretionary Accruals	Earnings Smoothing	
Executive compensation	-0.038	-0.058	-0.129
	(2.94)**	(1.90)	(6.18)**
Leverage	-0.001	-0.074	-0.044
	(0.15)	(3.15)**	(2.79)**
Tangibility	-0.015	-0.017	0.019
	(1.33)	(0.66)	(1.05)
Size	0.022	-0.004	-0.021
	(4.79)**	(0.32)	(2.81)**
Age	-0.003	-0.011	0.001
	(2.68)**	(4.88)**	(0.54)
Growth opportunity	0.029	-0.005	0.024
	(7.41)**	(0.54)	(3.85)**
Audit fees	-0.013	0.029	-0.010
	(3.02)**	(2.81)**	(1.39)
Constant	-0.091	0.953	0.385
	(2.58)**	(11.52)**	(6.87)**
No. of observations	10989	11011	11014
F statistics	15.04	7.60	12.97
P-value	0.000	0.000	0.000
Adjusted R-squared	0.08	0.26	0.52

Note: 1. Absolute value of t-statistics in parentheses, 2. * significant at 5%; ** significant at 1%, 3. Robust regression analysis is employed to obtain heteroscedasticity-robust standard errors.

Robustness Analysis

The analysis examining the link between executive compensation and discretionary accruals using the Jones method ($\beta = -0.02$, $t\text{-stat} = -2.27$, $F\text{-stat} = 5.95$, $p\text{-value} = 0.000$) and the performance-adjusted method ($\beta = -0.034$, $t\text{-stat} = -2.70$, $F\text{-stat} = 7.56$, $p\text{-value} = 0.000$) show similar results, indicating robustness of analysis. Executive compensation measured as a proportion of profit ($\beta = -0.0002$, $t\text{-stat} = -0.34$, $F\text{-stat} = 13.46$, $p\text{-value} = 0.000$) and total asset ($\beta = -0.0002$, $t\text{-stat} = -0.62$, $F\text{-stat} = 13.25$, $p\text{-value} = 0.000$) has a negative impact on discretionary accruals; however, the result is statistically insignificant.

Threshold Levels of Executive Compensation and Earnings Management

Executive compensation is categorised into three groups based on the quartile classification, namely low level (0 to 0.2%), medium level (0.3% to 2%), and high level (above 2%) of compensation, with mean value 0.1%, 0.9%, and 15% of market capitalisation, respectively (Table 4).

Table 4: Threshold Levels of Executive Compensation and Earnings Management

Level of EXEC	EXEC (Mean)	Accrual Management		
		DA (Mean)	ES (Mean)	REM (Mean)
Low level (0.0-0.2%)	0.1%	0.118	0.544	0.242
Medium level (0.2%-2%)	0.9%	0.120	0.514	0.250
High level (Above 2%)	15%	0.123	0.478	0.251

Note: EXEC: Executive compensation, DA: Discretionary accruals, ES: Earnings smoothing, REM: Real earnings management.

As the level of executive compensation increases, there is an increase in discretionary accruals (11.8% to 12.3%) (Fig. 1). A low level of executive compensation, less than 0.2%, is preferred to lower discretionary accruals activities.

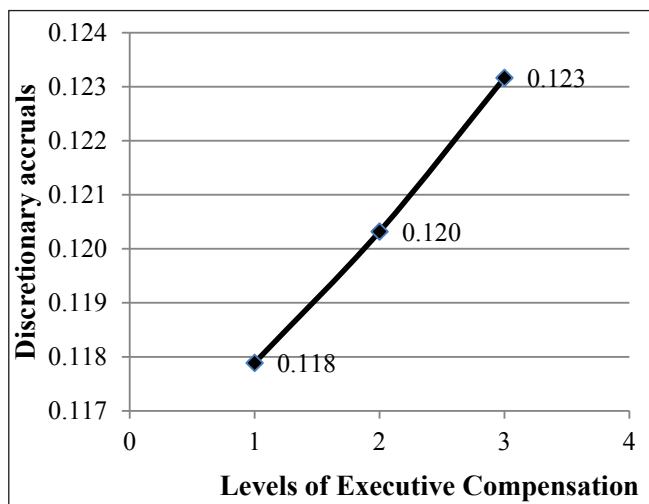


Fig. 1: Threshold Levels of Executive Compensation and Discretionary Accruals

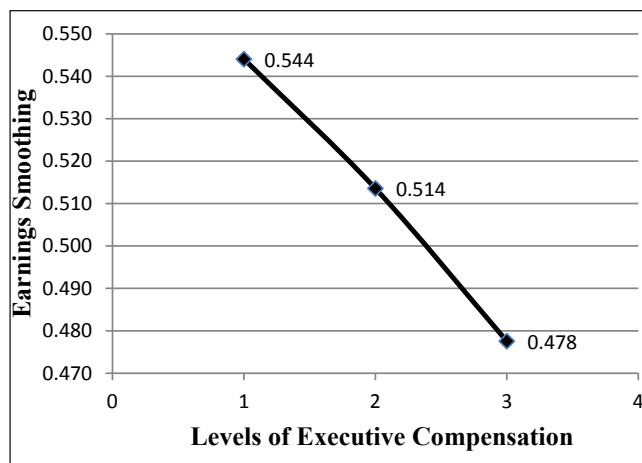


Fig. 2: Threshold Levels of Executive Compensation and Earnings Smoothing

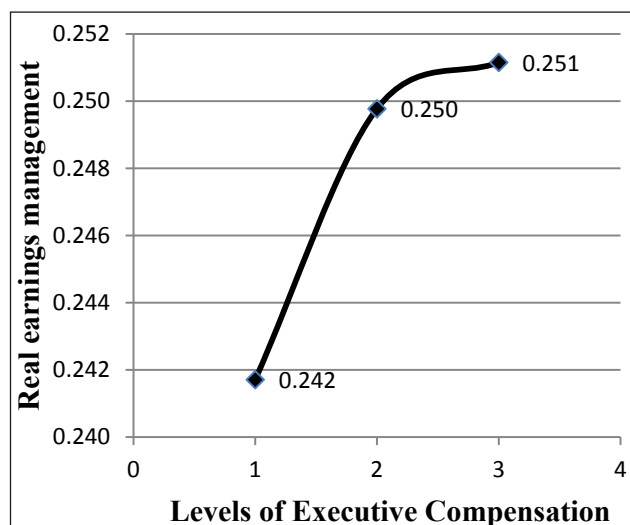


Fig. 3: Threshold Levels of Executive Compensation and Real Earnings Management

Earnings smoothing reduces as the level of executive compensation increases (Fig. 2). An executive compensation ratio higher than 2% is recommended to lower earnings smoothing activities. Real earnings management shows a consistent increase (24% to 25.1%) as the level of compensation with respect to market capitalisation increases (Fig. 3). Compensation ratio less than 0.2% signifies lower real earnings management activities in the firm.

Top executives indulge in higher level of real activities management as compensation increases. They tend to focus on meeting short earnings forecast at the expense of long-term growth prospects of the firm.

Empirical Evidence on Information Asymmetry Hypothesis

Asymmetric information theory, as suggested by Chaney and Lewis (1995), assumes that only managers observe economic earnings and are aware of firm type (high value or low value). Investors tend to observe the reported financial information of the firm to examine economic earnings. Information asymmetry between managers and investors creates opportunities to manage earnings, as executive compensation is linked to the expected future performance. The levels of executive compensation and earnings management methods in overvalued and undervalued firms reveal the threshold levels of earnings management. Firms are classified as overvalued and undervalued firms based on their market to book ratio (P/B ratio). Firms with a higher market-to-book value than the manufacturing index returns (average market-to-book ratio over ten years is 4.77) are considered as either overvalued or undervalued firms.

Threshold Levels of Executive Compensation and Earnings Management in Overvalued Firms

The levels of executive compensation (low, medium, and high) are examined for overvalued firms across different methods of earnings management (Table 5). The average value of executive compensation is 0.01%, 0.1%, and 4%, corresponding to low level, medium level, and high level of executive compensation, respectively, with respect to market capitalisation.

Table 5: Threshold Levels of Executive Compensation and Earnings Management in Overvalued Firms

Levels of EXEC	EXEC (Mean)	Accrual Management		REM (Mean)
		DA (Mean)	ES (Mean)	
Low level (0-0.02%)	0.01%	0.1205	0.558	0.232
Medium level (0.02%-0.2%)	0.1%	0.120	0.586	0.279
High level (Above 0.2%)	4%	0.130	0.561	0.264

Note: EXEC: Executive compensation, DA: Discretionary accruals, ES: Earnings smoothing, REM: Real earnings management.

A higher level of compensation increases discretionary accruals (12.05% to 13%). An executive compensation ratio less than 0.2% is suggested to reduce earnings management through discretionary accruals (Fig. 4).

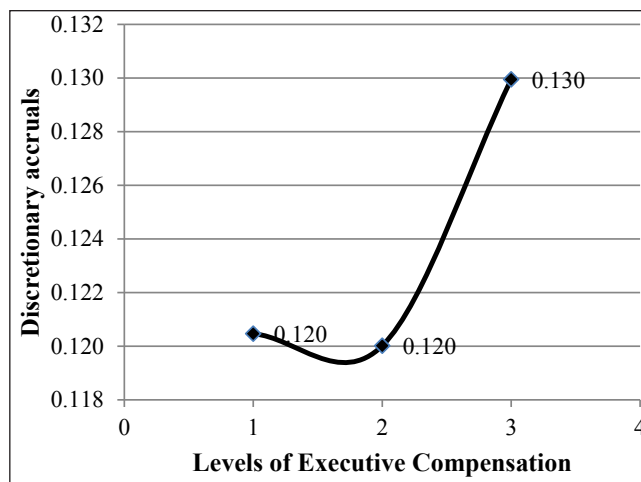


Fig. 4: Threshold Levels of Executive Compensation and Discretionary Accruals (Overvalued Firms)

Overvalued firms have higher earnings smoothing (on an average 58.6%) at the medium level of executive compensation (Fig. 5). At lower and higher levels of executive compensation, earnings smoothing activities is the lowest. Thus, a compensation ratio less than 0.02% is suggested to reduce income smoothing.

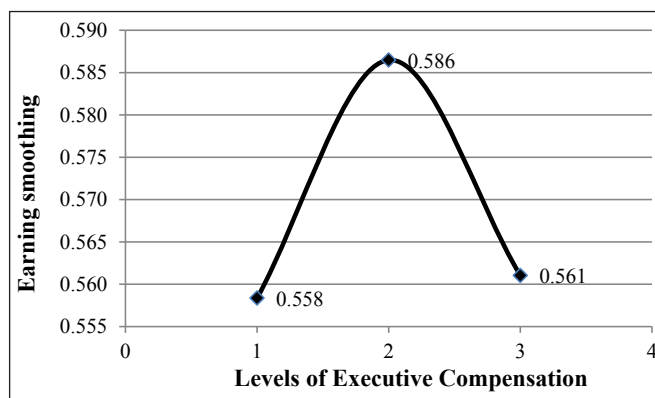


Fig. 5: Threshold Levels of Executive Compensation and Earnings Smoothing (Overvalued Firms)

Real earnings management is higher at the medium level of executive compensation in overvalued firms. The recommended compensation ratio of less than 0.02% reduces real earnings management activities.

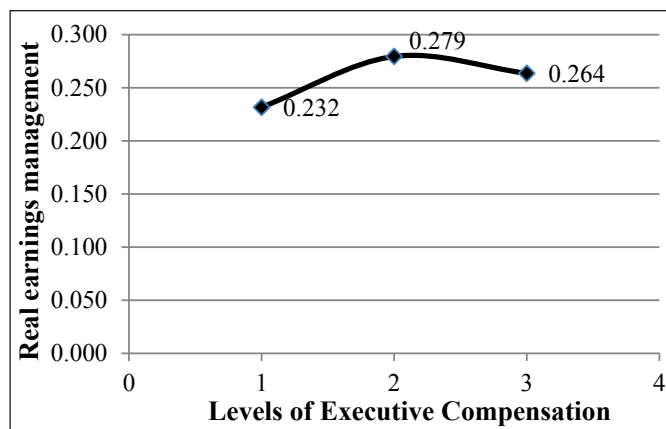


Fig. 6: Threshold Levels of Executive Compensation and Real Earnings Management (Overvalued Firms)

Threshold Level of Executive Compensation and Earnings Management in Undervalued Firms

Executive compensation is categorised into three groups in undervalued firms, based on quartile classification, namely low level, medium level, and high level of compensation ratio, with mean value 0.1%, 1%, and 17% of market capitalization, respectively (Table 6).

Table 6: Threshold Levels of Executive Compensation and Earnings Management in Undervalued Firms

Level of EXEC	EXEC (Mean)	Accrual Management		REM (Mean)
		DA (Mean)	ES (Mean)	
Low level (0 to 0.4%)	0.1%	0.117	0.525	0.211
Medium level (0.4% to 2.5%)	1%	0.119	0.500	0.232
High level (Above 2.5%)	17%	0.12	0.471	0.248

Note: EXEC: Executive compensation, DA: Discretionary accruals, ES: Earnings smoothing, REM: Real earnings management.

The levels of executive compensation (low, medium, and high) are examined for undervalued firms across different methods of earnings management. A higher level of compensation is found to induce discretionary accruals (11.7%) (Fig. 7). Discretionary accruals show consistent increase (from average value of 11.7% to 12%) with increase in the level of compensation. A lower executive compensation ratio (less than 0.4%) inhibits discretionary accrual activities in undervalued firms. Fig. 8 shows that

as the level of compensation increases, earnings smoothing activities show a declining trend (from average value of 52.5% to 47%). Thus, a compensation ratio higher than 2.5% reduces earnings smoothing in undervalued firms.

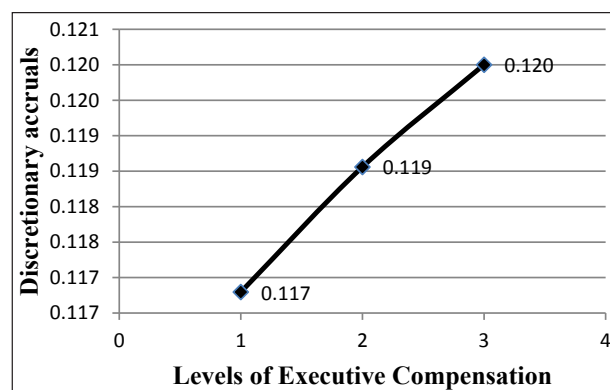


Fig. 7: Threshold Levels of Executive Compensation and Discretionary Accruals (Undervalued Firms)

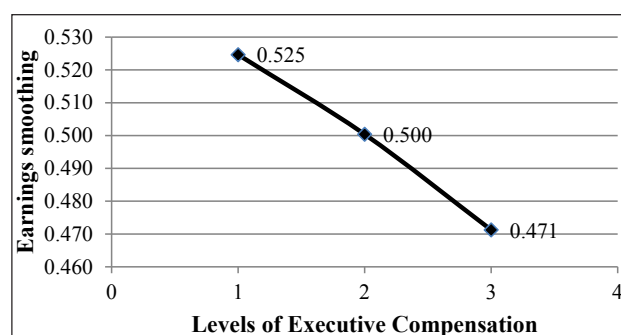


Fig. 8: Threshold Levels of Executive Compensation and Earnings Smoothing (Undervalued Firms)

Real earnings management increases (24.7% to 25.2%) as the level of compensation increases (Fig. 9). A low compensation ratio (less than 0.4%) is suggested to reduce real earnings management activities in undervalued firms.

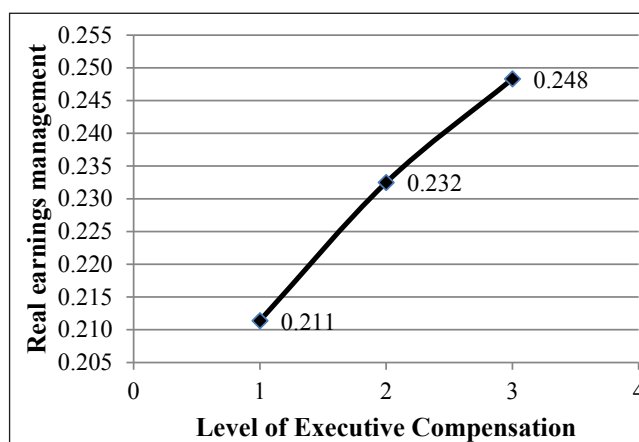


Fig. 9: Threshold Levels of Executive Compensation and Real Earnings Management (Undervalued Firms)

The information asymmetry model suggests that firms reporting higher earnings are valued highly in the financial market. Executive compensation is linked to the expected future value of firms. Executives in high value firms increase firm level earnings to project higher performance to increase their compensation. Further increase in firm performance increases tax accrued on earnings that reduces overall firm value. Low value firms attempt to mimic the reporting strategy of high value firms when benefits of over reporting exceed the cost. Firms in India also indulge in earnings management as a tax planning measure.

In a market with perfect information, the compensation ratio is expected to be a straight line, since the firm value and managerial discretions are known, and with increase in discretionary accruals, there is no incentive to increase executive compensation. Information asymmetry hypothesis (Chaney & Lewis, 1995) is evident in overvalued (high value) and undervalued firms (low value) in the Indian manufacturing sector (Fig. 10). As discretionary accruals increase, the compensation demanded in overvalued and undervalued firms increase with the expectation of increase in firm value. Executive compensation in undervalued firms exceeds beyond a certain percentage of increase in discretionary accruals, since discretionary accruals could also target tax planning, thus further increasing the market value of the firms.

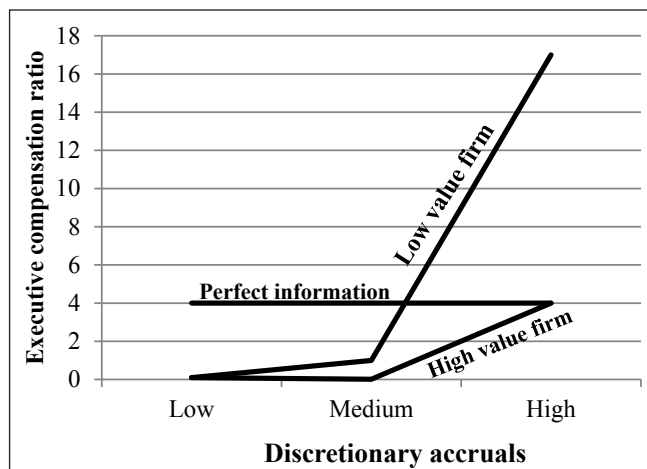


Fig. 10: Information Asymmetry in Discretionary Accruals

In overvalued firms, earnings management (earnings smoothing and real earnings management) increases the compensation initially. Further increase in smoothing and real earnings management could be due to over-reporting, which results in additional cost for the firm, leading to a reduction in the executive compensation ratio (Fig. 11 & Fig. 12).

Undervalued firms initially block information (negative performance) through earnings smoothing methods to mimic the reporting strategies of overvalued firms so that the market value will be high. Compensation ratio increases to support earnings smoothing activities. Subsequent use of such smoothing measures may not be successful in increasing the firm value, and hence, the undervalued firms reduce the compensation structure for increasing earnings smoothing. Thus, as increased levels of smoothing activities do not add value, the compensation ratio reduces below the compensation ratio of overvalued firms.

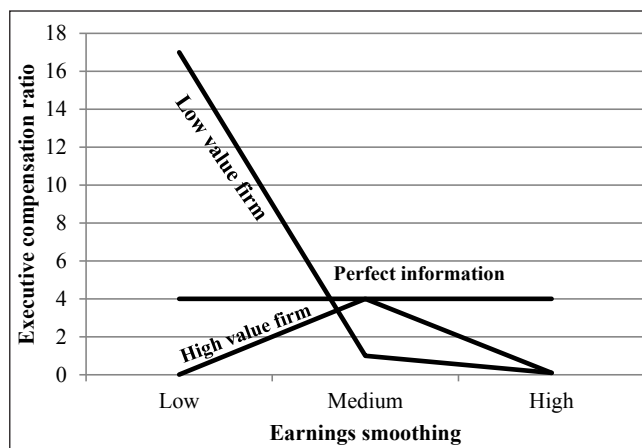


Fig. 11: Information Asymmetry in Earnings Smoothing

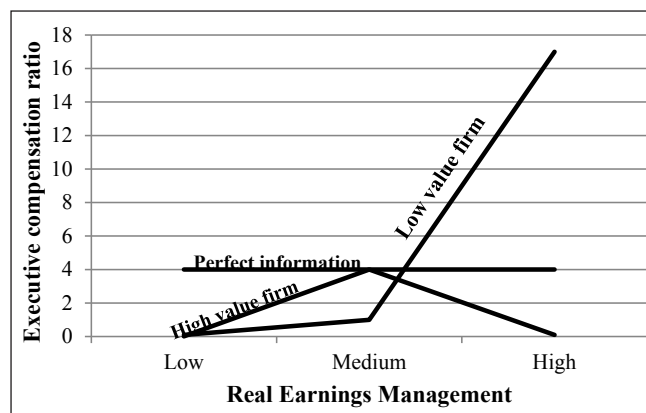


Fig. 12: Information Asymmetry in Real Earnings Management

As with discretionary accruals, executives in undervalued firms add value to the firm through real earnings management (Fig. 12) by mimicking the reporting of overvalued firms. The tax planning advantage due to real earnings management increases the value to the firm and the compensation structure increases as real earnings management activities increases.

SUMMARY

The examination of the influence of compensation structure on earnings management suggests that a higher compensation ratio reduces accrual management (discretionary accruals) and real earnings management. The results contradict the findings of Shuto (2007) and Adut et al. (2013).

A lower level of compensation (less than 0.2%) is suggested to reduce discretionary accruals and real earnings management. Compensation ratio of more than 2% reduces the earnings smoothing activities. Information asymmetry hypothesis is evident in firms, wherein increasing firm performance increases tax accruals, which reduces firm value. The executive compensation structure of overvalued firms shows this declining tendency at higher levels of earnings smoothing and real earnings management. The undervalued firm's compensation structure increases initially as discretionary accruals and real earnings management increase, to mimic the reporting of overvalued firms, and at higher levels, as a tax planning strategy to increase the value of the firm.

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