



THE ASSOCIATION BETWEEN EARNINGS MANAGEMENT AND CORPORATE GOVERNANCE: A CASE STUDY

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ABSTRACT

The study tries to examine the nature of association between corporate governance and earnings management practices for select manufacturing firms in India by focusing on several components of corporate governance and by constructing a corporate governance index.

Among the various governance variables considered viz. board size, board independence, board diligence, promoters on the board, CEO-chair duality, audit committee and remuneration committee size, independence and meetings and employment of B4-auditors, the study established that only higher frequency of remuneration committee meetings significantly limits discretionary accruals (a proxy for earnings management) of the firms.

In terms of the four corporate governance sub-indexes constructed viz. board index, audit committee index, Big4-auditors index and the remuneration committee index, only the board index is found to be negatively and significantly associated with the discretionary accruals portraying that a superior board can effectively constrain the discretionary accruals.

Finally, the study established a negative relationship between the composite corporate governance index formed and earnings management portraying that a superior corporate governance framework may assist in effectively constraining earnings management by firms. However, in this study the association has not been statistically significant. It may be concluded here that with a larger sample and inclusion of other explanatory variables, a statistically significant and robust association may be drawn between corporate governance and discretionary accruals in India.

Keywords: Earnings Management; Total Accruals; Discretionary Accruals; Corporate Governance Mechanisms; Panel Data Approach

INTRODUCTION

The frequent corporate meltdowns in the past few decades across countries have brought about a radical change in the accounting milieu worldwide. Consequently, we find a drastic change in the nature of the financial disclosure and the monitoring mechanisms in this respect. The collapse of reputed companies viz. Enron, WorldCom, Parmalat or Satyam, raised deep concerns about the reliability of financial reporting. Researchers have thus extensively tried to comprehend the earnings management (EM) phenomenon, the reasons behind it and the way it is achieved (Demski, 2002; Erickson et.al., 2004). In simple terms, earnings management is the choice by a manager of accounting policies so as to achieve a specific objective (Scott, 2003).

The key device protecting stakeholders against misleading or fraudulent financial claims is the corporate governance system. Several studies across the globe have examined the effect of corporate governance mechanisms on earnings management and found that they are related to the incidence of earnings management (Lin & Hwang, 2010; Xie et al., 2003; Chtourou et al., 2001; Sarkar et. al, 2008).

In this background, our study makes several interesting contributions to literature. It attempts to investigate the impact of quite a few components of corporate governance on the practice of earnings management using the panel regression technique which is rare in the Indian context. Secondly, in a rare approach we contribute to the literature by forming a corporate governance index, thereby trying to make a quantitative estimation of the nature of relationship between corporate governance and earnings management.

Our study has focused on select manufacturing firms listed on the Bombay Stock Exchange (BSE) 500index as on March 31, 2015 which belonged to the same industrial sector.

The remainder of the paper is structured as follows. Section 2 provides a brief review of the literature on the association of earnings management and corporate governance, Section 3 presents the data and methodology, Section 4 is devoted to the summary and findings of the study and Section 5 wraps up the paper with the concluding observations.

REVIEW OF LITERATURE

Boards of directors are the key element of corporate governance being responsible for monitoring the quality and the integrity of the firm's financial reports and controlling top management, as delegated by the shareholders (Fama& Jensen,1983).We initiate our analysis by examining the relationship of earnings management with the characteristics of the board, audit committee (AC), remuneration committee (RC) and the employment of Big-4 auditor.

Several researches based on data of US and UK firms conclude that corporations with independent boards tend to have less earnings management (Osma, 2008; Peasnell et al., 2005; Xie at al., 2003). On the other hand, there are studies that show absence of a significant association of board independence with earnings management (Saleh et al., 2005; Kumari&Pattanayak, 2014).

Extant literature also reveals mixed results on the association of board size with earnings management. While Ching et. al. (2006) and Santiago & Brown (2009) find a positive association, Abed et al. (2012) and Aygun et al. (2014) suggest that the relationship is negatively statistically significant.

Empirical studies find evidence the CEO-chair duality encourages earnings management (Davidson et al., 2004; Iraya et al., 2015; Iqbal et al., 2015). Again, certain studies also argue thatboard leadership structure has no effect on the financial reporting quality (Yasser &Al Mamun, 2015;Chtourou et al., 2001;Hashim& Devi, 2008).

Studies corroborate that boards which meet more frequently demonstrate lower levels of discretionary accounting adjustments (Mansor et al., 2013; Gonzalez&García-Meca, 2014). Sarkar et al. (2008) find that higher 'diligence' measured by percentage of board meetings attended by independent directors leads to the reduction of discretionary accruals.

Obigbemi et al. (2016) and Iraya et al. (2015) however present a contrasting view i.e. increase in board activity lead to increase in earnings management practices.

The board of directors usually delegate responsibilities to various board committees to deliver their responsibilities in a smoother and more efficient manner. Research has intensely focused on the relation between audit committee characteristics and earnings management.

There are studies that have supported the notion that a larger audit committee offers more oversight over a firm's financial reporting process (Inaam&Khamoussi, 2016; Lin et al., 2006). On the other hand, Garven (2015) could not find any significant association between audit committee size with the likelihood of Real Earnings Management.

Again, it has been held that audit committee independence is associated with a stronger internal audit function and lower levels of earnings management (Klein, 2002; Hutchinson et al., 2008). Felo et al. (2003) and Lin et al. (2006) however could not find any significant impact of audit committee independence on quality of reported earnings.

Existing literature finds evidence that more frequent audit committee meetings reduce the likelihood of financial reporting problems (Beasley et al., 2000; Abbott, 2004; McMullen & Raghunandan, 1996). On the contrary, Yang & Krishnan (2005) and Lin et al. (2006) have not found any significant association between audit committee meetings and the quality of reported earnings.

It has been often argued that the employment of Big N auditors (Big 8/Big 6/Big 4) can enhance the credibility of the reported accounting information (Becker et al., 1998; DeFond&Jiambalvo, 1991). Yaşar (2013) and Jeong& Rho (2004) find evidence of a contrasting view that there is no difference in audit quality between Big N and non-Big N auditing firms in terms of limiting earnings management practices.

Overall, the contradiction in findings put forth by the studies focusing on the various components of corporate governance encourages us to further examine the impact of board characteristics on earnings management and financial reporting quality and we instigate our research to study the impact using a more robust method to validate the association between earnings management and corporate governance.

Our study has also focused on dimensions like independence, size and meetings of remuneration committee which are missing in the Indian context. The independence of the remuneration committee is given much importance in recent times as it may assist in bringing the much-needed objectivity in the decision-making procedure.

In the context of India, research on earnings management has been limited though it is perceived that companies in India engage in earnings management practices. Earnings management by Indian companies has been recognized by various studies (Sarkar et al., 2008; Ghosh, 2011; Rudra & Bhattacharjee, 2012; Agrawal & Chatterjee, 2015; Ajay&Madhumathi, 2015). Sarkar et al. (2008), Jaiswal & Banerjee (2011) and Kumari&Pattanayak (2014) have examined the association between corporate governance characteristics and earnings management in India.

On the basis of the survey of literature done, we attempt to address the gaps in research in the domain of linkage between earnings management and corporate governance. Thus, we investigate the impact of several components of corporate governance on the practice of earnings management, which is rare in the Indian context. Furthermore, our study is not focused exclusively on large capitalization firms that are expected to have better corporate governance structures and have been a focus of many prior studies. Third, in a rare approach we contribute to the literature by examining the relationship between corporate governance and earnings management by forming a corporate governance index and using a panel data methodology that make the conclusions exceedingly robust.

The objectives of our study are estimation of earnings management (as proxied by discretionary accruals) following the modified Jones model to validate the incidence of earnings management in India and subsequently to capture the nature of relationship between corporate governance and earnings management.

DATA AND METHODOLOGY

We use a sample of 13 firms listed on the BSE 500 as on March 31, 2015 belonging to the same industrial sector according to the 2-digit National Industrial Classification (NIC) Code (NIC - 28). There were 19 firms in total at the end of the financial year. 6 firms were removed due to their change of consideration of the financial period or due to unavailability of data. The five periods considered in the study are 2010-11, 2011-12, 2012-2013, 2013-14 and 2014-15. Finally, there are total 65 firm-year observations.

We thus proceed to the methodology used to separate total accruals into the normal and abnormal components following the modified Jones model to validate the incidence of earnings management in India. Subsequently we try to make a quantitative estimation of the nature of relationship between corporate governance and earnings management through two

models, one focusing on the corporate governance components separately and another by forming a Corporate Governance Index (CGI).

There are several models that have been proposed in the literature to segregate total accruals into abnormal (discretionary) and normal (non-discretionary) elements, among which the most commonly used models are the Jones (1991) model and the modified—Jones model proposed by Dechow et al. (1995).

The Jones Model (1991) tries to control for the effects of the changes occurring in the firm's economic position on non-discretionary accruals. The model regresses total accruals on changes in revenues and on gross property, plant and equipment which provide coefficients that are subsequently used to estimate normal accruals. Dechow et al. (1995) modified Jones (1991) model with the incorporation of the change in receivables in the original Jones model. Under this model the change in revenues is adjusted for the change in the receivables in the event period.

We first define total accruals (TA) for firm i for year t as the difference between net income (NI) and operating cash flows (CFO) for that period (Equation 1).

$$TA_{it} = NI_{it} - CFO_{it} \dots \dots \dots (1)$$

First, the firm-specific total accruals (TA) for each of the five years are regressed on the variables that are expected to vary with normal accruals as per the modified Jones model (Equation 2). The dependent and the independent variables are scaled by lagged total assets (A_{it-1}) to avoid the problem of heteroskedasticity. The estimates $\hat{\alpha}1$, $\hat{\alpha}2$ and $\hat{\alpha}3$ in Equation (3) are obtained as coefficients through the regression conducted which helps to compute the non-discretionary accruals as shown in Equation (3). Abnormal or discretionary accruals is the error term (residuals) from the regression (Equation 4).

Choosing the appropriate regression model for the panel data - The Breusch-Pagan Lagrange Multiplier (LM) test is first conducted to decide between a random effects regression and a simple OLS (pooled) regression which is to be used to estimate earnings management and subsequently the association between corporate governance and earnings management. The null hypothesis is that variances across entities is zero. In other words, there is no significant difference across units or there is an absence of the panel effect. If the null hypothesis is accepted, we choose an OLS regression technique. However, if the null hypothesis is rejected and the data supports a panel effect, we further conduct the Hausman Test for Random Effects to determine whether the Fixed or the Random effect model

provides more consistent results. The null hypothesis is that the preferred model is random effects while the alternate hypothesis is that the preferred model is fixed effects. Essentially, the test tries to find if there is a correlation between the unique errors and the regressors in the model. The null hypothesis is that there is no correlation between the two. If the Hausman test shows that $\text{Prob} > \chi^2$ is less than 0.05, a fixed effects model fits the data, while if $\text{Prob} > \chi^2$ is more than 0.05, a random effects model becomes suitable.

$$TA_{it}/A_{it-1} = \alpha_1 [1/ A_{it-1}] + \alpha_2 [(\Delta REV_{it} - \Delta REC_{it})/ A_{it-1}] + \alpha_3 [GPPE_{it}/A_{it-1}] + \epsilon_{it} \dots \dots (2)$$

Here,

TA_{it} = Total accruals in year t for firm i

ΔREV_{it} = Revenues in year t less revenues in year t - 1 for firm i

ΔREC_{it} = Receivables in year t less receivables in year t - 1 for firm i

$GPPE_{it}$ = Gross property, plant, and equipment in year t for firm i

A_{it-1} = Total assets in year t - 1 for firm i

i = Firms coded as 1.....N (N=13 as there are 13 firms)

t = 5 periods

ϵ_{it} = error term

Discretionary accruals (DAC) is defined as the difference between the Total Accruals and the Non-discretionary accruals (NDAC) (as computed by using coefficients generated from the regression model) (See Equation 3 & 4):

$$NDAC_{it} = \hat{\alpha}_1 [1/ A_{it-1}] + \hat{\alpha}_2 [(\Delta REV_{it} - \Delta REC_{it})/ A_{it-1}] + \hat{\alpha}_3 [GPPE_{it}/A_{it-1}] \dots \dots (3)$$

$$DAC_{it} = TA_{it}/A_{it-1} - \{ \hat{\alpha}_1 [1/ A_{it-1}] + \hat{\alpha}_2 [(\Delta REV_{it} - \Delta REC_{it})/ A_{it-1}] + \hat{\alpha}_3 [GPPE_{it}/ A_{it-1}] \} \dots \dots (4)$$

Once we derive the discretionary accruals for each firm per year, the following model (Equation 5) is used to empirically test the linkage between corporate governance and earnings management. The appropriate regression model based on the panel data is chosen on the basis of the Breusch-Pagan Lagrange Multiplier (LM) test and the Hausman test.

$$DAC_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BMA_{it} + \beta_3 PBit + \beta_4 BI_{it} + \beta_5 \text{Duality} + \beta_6 ACS_{it} + \beta_7 ACI_{it} + \beta_8 ACM_{it} + \beta_9 B4_{it} + \beta_{10} RCS_{it} + \beta_{11} RCI_{it} + \beta_{12} RCM_{it} + \beta_{13} ROCE_{it} + \epsilon_{it} \dots\dots\dots(5)$$

where:

DAC_{it} = Discretionary accruals for firm i for year t

β_0 = Constant

BS_{it} = Board size of firm i in year t

BMA_{it} = Board diligence i.e. board meetings attended by directors (who were present throughout the year) out of the total board meetings held for firm i in year t

$PBit$ = Percentage of promoters on the board for firm i in year t

BI_{it} = Percentage of independent directors on the board for firm i in year t

$Duality$ = A dummy variable that takes the value 1 if the chairperson of the board is also the CEO, and 0 otherwise, for firm i in year t

ACS_{it} = Audit committee size of firm i in year t

ACI_{it} = Percentage of independent directors on the audit committee for firm i in year t

ACM_{it} = Audit committee meetings held per year of firm i in year t

$B4_{it}$ = A dummy variable that takes the value 1 if the auditor is one of the Big 4 auditors, and 0 otherwise, for firm i in year t

RCS_{it} = Remuneration committee size of firm i in year t

RCI_{it} = Percentage of independent directors on the remuneration committee for firm i in year t

RCM_{it} = Remuneration committee meetings held per year of firm i in year t

$ROCE_{it}$ = Return on Capital Employed for firm i in year t

ϵ_{it} = other factors that are not captured by the model

An attempt is further made by us to form a composite corporate governance index (CGI) and to study the relationship of earnings management with the index formed. To construct the corporate governance index scores are allotted on four parameters: Board, Audit Committee, Remuneration Committee and employment of a Big-4 auditor. The scores are allotted based on personal judgment as well as by following certain guidelines put forth in the Companies Act 2013 in India. Higher score implies more developed governance component. Subsequently 4 sub-indexes are drawn on the basis of the scores allotted viz. Board Sub-Index (Board SI), Audit Committee Sub-Index (AC SI), Remuneration Committee Sub-Index (RC SI) and Big 4 Auditor Sub-Index (B4 SI). The composite corporate governance index was calculated as the total score obtained on the four broad corporate governance parameters

viz. Board, Audit Committee, Big-4 auditor and Remuneration Committee divided by the maximum score allotted and the result then multiplied by 100.

The Board's composite score included the following components: i) Board Size (scores allotted: 3-4 members = 1; 5-6 members = 2; 7-8 members = 3; 9-10 members = 4 and 11 and above = 5); ii) Board Diligence (scores allotted: attendance (%) in board meetings ≥ 50 - $< 70 = 1$; ≥ 70 - $< 90 = 2$; $\geq 90 = 3$); iii) Promoters (%) on Board (scores allotted: promoters $\leq 10\% = 4$; $> 10 - \leq 30\% = 3$; $> 30 - \leq 50\% = 2$; $> 50\% = 1$); iv) Board Independence (scores allotted: independent directors (%) on board: $\geq 33 - < 50 = 1$; $\geq 50 - < 70 = 2$; $\geq 70 - < 90 = 3$; $\geq 90 = 4$); v) CEO-Chair Duality (scores allotted: CEO-Chair Duality = 0, and 1 otherwise). The score obtained by each firm per year on each of the board component considered are then added to get the total score obtained on the five components. The total score obtained was then divided by maximum score allotted for the components and multiplied by 100 to get Board SI.

Similarly, the audit committee composite score was computed considering the following components: i) Audit committee size (scores allotted: 3 members = 1; 4 members = 2; 5 members = 3; > 5 members = 4); ii) Audit committee independence (scores allotted: independent directors (%) on AC $> 50 - \leq 60 = 1$; $> 60 - \leq 70 = 2$; $> 70 - \leq 80 = 3$; $> 80 = 4$); iii) Audit committee meetings (scores allotted: 4 meetings = 1; 5 = 2; 6 = 3; $\geq 7 = 4$). Likewise, the remuneration committee total score was calculated considering the following components: i) Remuneration committee size (scores allotted: 3 members = 1; 4 members = 2; 5 members = 3, > 5 members = 4); ii) Remuneration committee independence (scores allotted: independent directors (%) on RC: $\geq 50 - \leq 60 = 1$; $> 60 - \leq 70 = 2$; $> 70 - \leq 80 = 3$; $> 80 = 4$); iii) Remuneration committee meetings (scores allotted: 1-3 meetings = 1; $> 3 = 2$).

A score of 2 was allotted if the firm's auditor in a particular year is not among Big 4 auditors, and a score of 4 was allotted otherwise.

Subsequently the association between the discretionary accruals and corporate governance is explored with the help of the following regressions— one focusing on the four sub-indexes computed (Equation 6) and the other focusing on the composite corporate governance index (CCGI) (Equation 7). The robustness check was conducted to validate the models and the findings.

$$DAC_{it} = \beta_0 + \beta_1 \text{Board SI} + \beta_2 \text{AC SI} + \beta_3 \text{B4 SI} + \beta_4 \text{RC SI} + \beta_5 \text{ROCE}_{it} + \epsilon_{it} \dots \dots \dots (6)$$

$$DAC_{it} = \beta_0 + \beta_1 CCGI_{it} + \beta_2 ROCE_{it} + \varepsilon_{it} \dots \dots \dots (7)$$

SUMMARY AND FINDINGS

While estimating discretionary accruals following the modified Jones model, the Breusch-Pagan Lagrange Multiplier test rejected pooled OLS regression in favour of a random effects regression model (Prob > $\chi^2 = 0.0012$). Subsequently, the Hausman Test supported a random effect model instead of a fixed effect model (Prob > $\chi^2 = 0.8127$). The coefficients derived under the model for the select industrial sector are then used to calculate the discretionary accruals (following Equations 2, 3 and 4). Change in Revenue adjusted for the Change in Receivables is found to be a significant independent variable at 5% level. The coefficient of GPPE is negative as expected. Additionally, the model is found to be significant with Prob > $\chi^2 = 0.0785$.

The existence of heteroskedasticity problem was checked using the White's test. The findings (Prob > $\chi^2 = 0.1856$) indicated the absence of any heteroskedasticity concern.

Next, we tried to find the linkage between corporate governance and earnings management. The correlation between the explanatory variables is explored first before establishing the linkage between the two (Table 1).

Table 1: Correlations between explanatory variables

	BS	BMA	PB	BI	Duality	ACS	ACI	ACM	B4	RCS	RCI	RCM	ROCE
BS	1.0000												
BMA	-0.2018	1.0000											
PB	-0.0583	-0.5528	1.0000										
BI	-0.2414	0.1434	0.0185	1.0000									
Duality	0.0235	-0.2930	0.6388	-0.2257	1.0000								
ACS	0.3676	-0.4655	0.2115	-0.1743	0.2236	1.0000							
ACI	0.1063	-0.0870	-0.1664	0.2962	-0.3556	-0.2604	1.0000						
ACM	0.1592	-0.2600	0.0172	0.0560	-0.0064	0.2942	0.0864	1.0000					
B4	-0.2581	-0.1371	0.0083	0.1929	0.0229	0.4074	-0.1390	0.3923	1.0000				
RCS	0.0631	0.1783	-0.2274	0.3020	-0.2684	-0.4125	0.1894	0.1428	-0.1618	1.0000			
RCI	-0.0017	0.1595	-0.0272	0.2772	-0.1252	-0.5257	0.2654	-0.0773	-0.2716	0.7601	1.0000		
RCM	0.1262	0.1129	0.0007	0.3204	-0.2021	-0.1609	0.0243	0.2277	0.1327	0.5361	0.3858	1.0000	
ROCE	0.1167	-0.2340	0.0369	0.1356	-0.1249	0.4412	0.2098	0.0901	0.2531	-0.3028	-0.2637	-0.1347	1.0000

Source: Author's computation

Table 1 shows the correlations among the independent variables. The correlations appear to be low (much less than 0.9 thresholds), indicating the variables do not have multicollinearity problems. The lowest correlation has been between remuneration committee meetings and promoters on the board (0.0007) while the highest has been between remuneration committee size and remuneration committee independence (0.7601).

The regression analysis subsequently conducted to establish the linkage between corporate governance and earnings management put forth the following result:

$$\text{DAC} = -0.072 - 0.009\text{BS} + 0.073 \text{BMA} + 0.089\text{PB} + 0.051\text{BI} + 0.013 \text{Duality} - 0.008 \text{ACS} - 0.025\text{ACI} - 0.003 \text{ACM} + 0.032 \text{B4} + 0.024\text{RCS} + 0.023 \text{RCI} - 0.028 \text{RCM}^* + 0.005\text{ROCE}^*$$

The equation above depicts the following relationship of corporate governance components with earnings management. Board Size is found to be negatively related to discretionary accruals portraying the fact that a larger board helps in limiting earnings management by firms. However, this relation has not been significant in this study.

The association between the attendance of directors in the board meetings with discretionary accruals is found to be positive indicating that board meetings may not always be beneficial and higher attendance does not guarantee that the directors are all able to focus on concerns like earnings management effectively. This association is also not found to be significant.

As expected, it has been found that lesser the number of promoters on the board, lower is the possibility of earnings manipulation as expropriation through earnings manipulation by such inside directors will be absent in such firms. The relationship has not been significant.

Surprisingly, the percentage of independent directors on the board is found to have a positive impact on earnings management. Thus, it may be held that either the independent directors may get engaged with the management to manipulate earnings figures or they may lack the required expertise to detect such manipulative practices. A similar scenario is also found when we focus on the independence of the remuneration committee of the board. However, the relationships are not found to be statistically significant.

As expected the CEO-Chair Duality is found to be positively related to discretionary accruals portraying that separation of roles between the Chairperson of the board and CEO is beneficial. This association is again not significant in the study.

In terms of the size of the audit committee, it is found that larger the size of the committee, higher is the ability to constrain manipulation of earnings. But an opposite

scenario is witnessed for the remuneration committee, where a smaller size is found to be a preferred choice. However, the associations are not significant for both the committees.

As expected, the independence of the audit committee is found to have a negative impact on discretionary accruals, though the relation is not significant, portraying that independence of the committee brings about the much-needed objectivity in decision making thereby limiting management of earnings by firms.

For both the committees viz. audit and remuneration, the frequency of meetings is found to have a negative impact on discretionary accruals corroborating the fact that higher the number of meetings of the committees, lesser is the possibility of incidence of manipulative practices by firms with committees devoting ample time to avoid such issues. However the association is significant for the remuneration committee only at 1% level.

Next, the employment of Big 4 auditors has been found to have a positive but statistically non-significant impact on earnings management. This is contrary to our expectation that Big 4 auditors help in constraining earnings manipulation. However, this is consistent with the certain real cases where the Big 4 auditors were not able to limit earnings management or were themselves involved in such practices.

The control variable ROCE has a positive impact on discretionary accruals and is significant at 1% level.

The overall model here is statistically significant at 1% which reveals that the model is well fitted. The adjusted R² value has been 0.35.

The variance inflation factor and the tolerance value (1/VIF) were found to be consistently smaller than ten and one respectively, indicating absence of multicollinearity. The existence of any heteroskedasticity concern was further checked using the White's test. The findings ($\text{Prob} > \chi^2 = 0.4416$) indicated the absence of heteroskedasticity concerns.

Finally, we have studied the relationship between earnings management and the four governance sub-indexes constructed as well as the association between earnings management and the composite corporate governance index constructed.

The correlation between the explanatory variables is checked first in Table 2 before establishing the linkage between earnings management and the four governance sub-indexes constructed.

Table 2: Correlation between the governance sub-indexes:

	BoardSI	ACSI	B4SI	RCSI	ROCE
BoardSI	1.0000				
ACSI	0.2480	1.0000			
B4SI	-0.1049	0.2998	1.0000		
RCSI	0.1751	-0.0489	-0.1692	1.0000	
ROCE	0.0975	0.4490	0.2531	-0.1847	1.0000

Source: Author's computation

The correlations in Table 2 appear to be low (much less than 0.9 thresholds), indicating the variables do not have multicollinearity problems. The lowest correlation has been between remuneration committee sub-index and audit committee sub-index (i.e. 0.05) while the highest has been between audit committee sub-index and ROCE (0.45). Subsequently the regression analysis is conducted to establish the linkage between the governance sub-indexes and earnings management. The estimated regression puts forth the following association:

$$DAC = 0.067 - 0.001 \text{ Board SI}^{***} - 0.001 \text{ AC SI} + 0.0004 \text{ B4 SI} + 0.0005 \text{ RC SI} + 0.005 \text{ ROCE}^*$$

The equation above shows that both the board sub-index and the audit committee sub-index are negatively associated with the level of discretionary accruals implying that a superior board based on the variables considered or a superior audit committee leads to constraining earnings manipulation by firms. The association between the board sub-index and earnings management is found to be statistically significant at 10% level. The relationship between audit committee sub-index and discretionary accruals has not been found to be significant. The relation between Big 4 auditors sub-index and discretionary accruals has been positive but statistically non-significant. It implies that employing Big 4 auditors may not assist in limiting manipulation of earnings by firms. The remuneration committee sub-index has been found to have a positive but statistically non-significant effect on the level of discretionary accruals implying that the committee attributes considered are unable to limit earnings management by firms. ROCE is again positively and significantly related to earnings management.

The overall model here is statistically significant at 1% which reveals that the model is well fitted. The Adjusted R2 value has been found to be 0.27.

At the final stage of the study we draw the linkage between the composite corporate governance index and earnings management as proxied by the level of discretionary accruals. The estimated regression depicts the following relationship:

$$\text{DAC} = 0.041 - 0.001 \text{ CCGI} + 0.004 \text{ ROCE}^*$$

As expected there is a negative association between corporate governance index and the discretionary accruals. However, the relationship is not found to be statistically significant for the manufacturing sector considered. The overall model here is statistically significant at 1% which reveals that the model is well fitted. The Adjusted R2 value has been .023.

CONCLUSIONS

This study investigates the relationship between corporate governance and earnings management for selected firms in India. The corporate governance parameters that were considered as independent variables were board size, attendance in board meetings (board diligence), promoters on the board, board independence, CEO-chair duality, employment of Big 4 auditors and the audit and remuneration committee characteristics, while the residuals derived following the modified Jones Model by Dechow et al. (1995) was used to denote earnings management as the dependent variable of the study.

The study established that higher frequency of remuneration committee meetings tends to effectively limit discretionary accruals of firms as there is the possibility of directors devoting more time to focus on crucial issues like earnings management.

Additionally, board size, board independence, board diligence, promoters on the board, audit committee and remuneration committee size and independence, audit committee meetings, employment of B4 auditors and CEO-chair duality were not found to have a significant impact on earnings management practices for the selected firms in India.

In terms of the governance sub-indexes constructed, our study established that the board sub-index is negatively and significantly associated with the level of discretionary accruals portraying that a superior board (based on the variables considered viz. size, independence, CEO-Chair duality, board diligence, promoters on the board) can effectively constrain discretionary accruals of firms. The audit committee sub-index is also negatively

associated with the level of discretionary accruals. But this association has not been significant in this study.

The relation between Big 4 auditors index and discretionary accruals has been again positive implying that employing Big 4 auditors may not assist in limiting manipulation of earnings by firms. The remuneration committee index has been also found to have a positive effect on the level of discretionary accruals. However, these associations were not found to be statistically significant.

ROCE is found to be positively and significantly related to earnings management as expected.

Finally, the study established a negative relationship between composite corporate governance index and earnings management portraying that a superior corporate governance framework may assist in effectively constraining earnings management. However, in this study the association has not been statistically significant.

Overall it may be concluded here that with a larger sample and inclusion of other explanatory variables, a statistically significant and robust association may be drawn between corporate governance and discretionary accruals in India providing more accurate findings.

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