

The Relationship Between Corporate Governance and Earnings Management: Evidence From Bangladesh

Md Helal Uddin¹

¹ Department of Business Administration, Faculty of Business Studies, International Islamic University Chittagong, Bangladesh

Correspondence: Md Helal Uddin, Department of Business Administration, Faculty of Business Studies, International Islamic University Chittagong, Bangladesh. E-mail: helalais@iiuc.ac.bd

Received: January 2, 2024

Accepted: February 2, 2024

Online Published: February 6, 2024

doi:10.5430/ijfr.v15n1p36

URL: <https://doi.org/10.5430/ijfr.v15n1p36>

Abstract

The main purpose of the research is to evaluate the effects of corporate governance on earnings management. The study is mainly based on secondary data, which was collected from the annual reports of non-financial organizations of Bangladesh from 2011-2021. The dependent variable of the study is earnings management, which was calculated based on accrual and real earnings management. The independent variable is the corporate governance index. The study uses the OLS regression technique to get empirical evidence. Empirical research demonstrates that corporate governance mechanisms have a substantial adverse effect on earnings management. The board-diversity index has a positive impact on accrual earnings management, whereas the audit committee index has a negative impact on it. The influence of the corporate governance index is more on discretionary accruals than real earnings manipulation. This study provides novel perspectives to the current body of knowledge on corporate governance and earnings management research.

Keywords: corporate governance index, board-diversity index, audit committee index, accrual earnings management, real earnings management, non-financial organizations, Bangladesh

JEL classification: M10; M14; M41; M48

1. Introduction

Earnings manipulation is a strategic practice employed by business executives with the intention of obtaining financial advantages inside the commercial sphere (Almasarwah, 2015). On occasion, corporate executives engage in unethical practices to achieve anticipated prosperity for their respective organizations (Bergstresser & Philippon, 2006). Existing earnings management studies investigate many incentives for earnings management, such as; market expectation and evaluation, contractual incentives, political incentives and companies' specific situations (Callao et al., 2021). There are other factors that can contribute to this occurrence, such as inadequate corporate governance and control structures. Undoubtedly, the implementation of governance rules can improve the quality of its commercial transactions and mitigate the practice of earnings management. Conversely, lack of state mechanism amplifies the likelihood of fraudulent activities within the organization (Uddin, 2022). Cadbury (1992) posits that governance mechanism encompasses a multifaceted framework for handling a corporation. Furthermore, the study conducted by Hamzah and Zulkafli (2014) demonstrates that control mechanism might serve as a measure to mitigate the occurrence of insider expropriation. Additionally, it has been argued that it systematically safeguards the wealth of shareholders (Uddin, 2022). In addition, the implementation of control mechanism serves to enhance the ability to access outside capital market and withstand economic problem (Helal, 2022). In line with these conclusions, it is crucial to know the expected impacts of governance mechanism. In contrary to existing research in this domain, this often imposes restrictions on the scope of metrics and methodology employed. Previous research has predominantly focused on examining the relationship between a limited number of governance features across various nations, with a particular emphasis on advanced countries (e.g., Xie et al., 2003). The examination of single features of governance mechanism with regards to their impact on earnings manipulation has resulted in an incomplete depiction of the relationship, yielding varied outcomes (Uddin, 2022). Furthermore, Helal (2022) argued that the impact of earnings management activities cannot be accurately assessed by considering simply a single earnings management system. This study was undertaken with the objective of establishing a correlation between corporate governance

structure and earnings management, driven by two primary motivations. The majority of prior research on the economy of Bangladesh has primarily examined various factors that influence earnings management. Some of these factors include membership in business groups, CSR disclosures, ERP system implementation, extremely variable revenue and operating profit, firm-specific determinants, and business group affiliation (Uddin, 2023). On the contrary, further investigation is warranted in this context on the perspective of Bangladesh. There is currently no existing study that investigates the effects of a corporate governance index on earnings management specifically within the context of Bangladesh. Furthermore, the focus of numerous studies in this field has been mostly on the industrialized economy, largely due to the presence of a well-established corporate governance framework (Uddin, 2022). Hence, it is imperative to examine the burgeoning economy, particularly in Bangladesh, as it has witnessed substantial investment and development initiatives, thereby augmenting the allure for potential investors. Moreover, whereas previous research mostly focused on accrual-based earnings management tactics, the present study incorporates both accrual-based and real-activity-based earnings management techniques. This study will examine six corporate governance features categorized into two headings: board diversity and audit committee characteristics. These attributes will be evaluated based on the corporate governance norms of Bangladesh. The examined parameters encompass the dimensions of board size, board consultations, the inclusion of women executives, the quantity of independent directors, the number of audit member, and the frequency of meeting. In this study, a novel variable called the corporate governance index is introduced, as demonstrated by Xiao and Uddin (2023). This index is derived by aggregating and calculating the average of all the enterprises included in the sample. The study's results suggest a significant inverse correlation between the corporate governance index and earnings management in non-financial companies operating in Bangladesh. However, the corporate governance index exerts a more significant impact on the practice of accrual earnings management compared to real earnings handling. Moreover, accrual earnings management increases due to the increases of board-diversity. Furthermore, there is a negative relationship between the audit committee index (ACMI) and accrual earnings management. The subsequent sections of the study are presented in the following structure: Moreover, there is a positive impact of the board-diversity index on accrual earnings management. Furthermore, there is a notable inverse correlation between the audit committee index (ACMI) and the practice of accrual earnings management. The subsequent sections of the study are presented in the following structure: Section 2 of the research paper presents the findings of the literature review and the subsequent elaboration of hypotheses. The research technique is outlined in Section 3, encompassing the process of sample selection, variable measurement, and the construction of empirical models. Section 4 presents the regression results and subsequent discussion, encompassing descriptive data, a multivariate analysis, and the principal findings. Section 5 of the report presents the findings of the sensitivity analysis. The chapter summary has been presented in Section 6.

2. Literature Review and Hypothesis Development

2.1 Board-Diversity Index and Earnings Manipulation

The board-diversity index is calculated by adding up the scores of each individual variable that represents board features. Existing research demonstrates diverse evidence regarding board-diversity and earnings manipulation. Multiple empirical researches suggest that more board members are associated with subpar performance due to interdependence among members, resulting in managers wielding the highest level of authority. Various studies have demonstrated that the size of a board of directors has a negative impact on the practice of manipulating earnings. Ball and Shivakumar (2008) pointed out that the size of the board increases the practice of earnings management. According to Ghosh et al. (2010), board size and earnings management are still debated in research. Xie et al. (2003) demonstrates that independent board members regulate earnings management. Many assumptions and views are available on the perspective of independent directors and managerial activity in the literature. One view is that a greater portion of independent director augments independence and control, lowering managers' authority and opportunities while boosting their competency. Consistently, Kelton and Yang (2008) suggest independent director minimize the gap between management and shareholders. This can enhance stakeholder interests. Resource dependence theory (e.g., Kesner & Johnson, 1990) supports this position. The second perspective holds that close relatives run family-oriented firms, according to Prencipe and Bar-Yosef (2011). Thus, independent directors have little managerial influence in these organizations (Goodstein et al., 1994). Multiple studies show that a majority of independent members on a board oversees managerial actions more effectively. Moreover, independent directors improve the quality of financial statement (Haniffa & Cooke, 2002). They also found that independent directors reduced earnings management.

Another crucial element of board-diversity is the presence of female directors in the boardroom. It was clear that men and women have distinct thinking power, workability, and normal conduct, but women support others while men

focus on profitability and professional growth when managing the organization's finances. To maximise profit, men are more prone than women to break corporate and accounting rules while recording revenue spending (Betz et al., 1989). Srinidhi et al. (2011) posit that women's inclination towards professional pursuit's results in a decreased inclination towards engaging in earnings management compared to men. Some research found that female accountants are more accountable than male accountants due to morality and consciousness (Bernardi & Arnold, 1997). They hate taking risks and are reluctant to boost economic gains unethically. However, boys are rigid and sensitive than females when making economic judgments (Uddin, 2022). On the otherhand, Harakeh et al. (2019) showed that female directors may manipulate quality for financial and professional gain. Research demonstrates that gender diversified boards negatively impact earnings management (e.g., Peni & Vahamaa, 2010). Uddin (2022) noted that qualified female directors can handle earnings management risk with a conservative strategy.

Both male and female board members must attend regular board meetings to address official issues (Uddin, 2022) hence the firm must pay meeting arrangement fees. Thus, scholars and politicians continue to discuss board meeting frequency (Vafeas, 1999). Board meetings may affect earnings management depending on company governance, research sample, and timeframe (Almasarwah, 2015). The link between board meetings and earnings management is indirect but significant. These meetings may put managers under pressure to accomplish impossible financial goals, forcing them to use earnings management tactics, even if they violate ethics. A firm may suffer earnings management if its board meeting violates corporate governance, according to Vafeas (1999). However, Gulzar (2011) found that board meeting involvement improves monitoring and efficacy, reducing fraud. However, Almasarwah (2015) states that regular board meetings prevent earnings manipulation provided a corporation has solid corporate governance and qualified board members. Due to poor corporate governance, board meetings positively affect earnings management in Chinese stock exchange enterprises (Gulzar, 2011). According to Obigbemi et al. (2016), more board meetings increase earnings management. Based on the above discussion, though, various elements of board-diversity individually fail to reduce earnings management in some countries. However, combined board-diversity elements may be effective in decreasing earnings manipulation. Therefore, this study proposes that board diversity will reduce earnings management in non-financial organizations in Bangladesh.

H1: There is a negative impact of board-diversity index on earnings management.

2.2 Audit Committee Characteristics Index and Earnings Management

The presence of certain qualities in audit committees can effectively prevent the manipulation of financial reporting. Xie et al. (2003) propose that audit teams of persons with extensive experience had enhanced capabilities in monitoring, evaluating, and preventing instances of fraud and errors, owing to their comprehensive understanding of various aspects of accounting and finance. On the other hand, it is possible for a smaller audit committee to develop biases and compromise its autonomy (Habbash, 2010). Haniffa et al. (2006) and Al-Haddad & Whittington (2019) examine the effects of audit committee size on earnings manipulation in Malaysian corporations and Jordan-listed organizations, respectively. Both research' findings shows a positive correlation between the dependent and independent variable. Research of Saleh et al. (2007) has found direct positive relationship in Malaysian companies. However, Lin and Hwang (2010) found a negative association in the United States. Xie et al. (2003) of the US and Baxter & Cotter (2009) of Australia's enterprises came to different conclusions about the correlation between audit committee size and earnings manipulation.

According to Jenny and Lois (2007), it is possible for audit committee meetings to cultivate professionalism and establish a harmonious equilibrium among various entities inside a company. These meetings also serve to enhance internal control systems, hence promoting optimal performance. In a similar vein, research shows that the implementation of biannual meetings serves as a preventive measure against occurrences of cash theft, misappropriation of goods, and accounting manipulations (Abbott et al., 2000). In a study conducted by Saleh et al. (2007), an examination of Malaysian firms revealed a significant correlation between the audit committee meetings and earnings management. The escalation of operating costs resulting from an increased number of audit committee meetings prompts corporations to resort to earnings management as a means to counterbalance these additional expenditures. Previous studies also indicate a negative correlation between these two variables. Australia (Baxter & Cotter, 2009), the US (Bedard et al., 2004), Nigeria (Eriabie & Odia, 2016; Abbas, 2020), and Jordan (Almasarwah, 2015) are among the countries that have noted this connection. Thus, non-financial firms in Bangladesh may be able to reduce earnings manipulation through a combination of audit committee features.

Hence, we propose the following hypothesis:

H2: There is a negative impact of audit committee index on earnings management.

2.3 Corporate Governance Index and Earnings Management

The association between corporate governance variables and earnings manipulation has been shown in various research, including those by Ghosh et al. (2010), Harakeh et al. (2019), Obigbemi et al. (2016), Xie et al. (2003), and Almasarwah (2015). However, according to Sun and Cahan (2009), a more accurate picture of the state of corporate governance can be obtained by adding together the quality scores of the various components. Zalata and Roberts (2015) have developed audit committee and board governance quality assessments that are coupled. After that, they looked at the connections between these assessments and accurate financial reporting. Zalata and Roberts (2015) show that when boards and audit committees are of high quality, it leads to less practice of shifting categories. This is an indicator of successful internal governance. As a result, strong internal governance might take the place of strict accounting regulations. A recent study conducted by Uddin (2022) found that there is a high correlation between the overall evaluation of corporate governance and a drop in real earnings handling. Therefore, the present research predicts that composite corporate governance ratings may have a detrimental impact on earnings management for non-financial businesses in Bangladesh.

H3: There is a negative impact of corporate governance index on earnings management.

3. Methodology of the Study

3.1 Sample Selection and Data Collection

Table 1. Samples of the study

Name of the industry	Number of Firms-year observation
Total Sample firms -118	
Cement industry	77
Ceramics industry	55
Engineering industry	176
Textile industry	352
Food industry	99
Power industry	132
Pharmaceuticals	220
IT	44
Services & Real Estate	44
Telecommunication	11
Tannery	22
Miscellaneous	44
Paper and printing	22
Total	1298

One hundred and eighteen non-financial companies trading on Bangladesh's Dhaka Stock Exchange made up the study's sample. The unique character of financial transactions and the existence of different rules led the study to leave these institutions out of the analysis. Using yearly reports covering the years 2011–2021, we were able to compile the financial data used in the study. Due to inconsistencies in the required data for earning management proxies, the research period started in 2011. The empirical investigation has been refined to include 118 enterprises across thirteen industries (for details, see Table 1). In order to conduct a trustworthy and precise study, every data has been meticulously culled by hand from the yearly reports.

3.2 Measurements of the Study

3.2.1 Earning Management

This study utilises both earnings management measures to examine the hypothesis. The study employs discretionary accruals, a commonly utilised measure in prior research (Xiao & Uddin, 2023; Uddin, 2022), for the accrual-based analysis. The study also uses Roychowdhury (2006) model to measure real earnings manipulation.

3.2.1.1 Accrual-based Earnings Management

The current study calculates the discretionary and non-discretionary accruals. The specification of discretionary costs is shown by discretionary accruals. For example, an estimated transportation allowance for management is noted in the journal books but not actually paid for. Contrarily, non-discretionary accruals are defined as the recording of essential expenses in advance, even though they have not yet occurred. Equation 3 of the Modified Jones model was utilized in this study to represent earnings management, in line with Dechow et al. (1995). Nevertheless, the entire accruals are shown in equation 1 as follows:

$$TAC_{it} = NOPI_{it} - CFO_{it} \quad (1)$$

With "i" representing the firm and "t" representing the year, the above equation shows that total accruals are equal to net operating income minus cash flow from operational activities.

Non-discretionary accruals (NDAC) were measured with the model below (see equation 2):

$$\frac{TAC_{it}}{TA_{i,t-1}} = \beta_1 \left(\frac{1}{TA_{i,t-1}} \right) + \beta_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{i,t-1}} \right) + \beta_3 \left(\frac{PPE_{i,t-1}}{TA_{i,t-1}} \right) + \varepsilon_{it} \quad (2)$$

Total accruals, or TAC for short, are determined by deducting operating cash flows from income before unexpected items. The difference between the incomes in year t and the incomes in year t-1 is represented by the change in net revenues (ΔREV). The acronym for the difference in the amount owing to a corporation is ΔREC . The typical depreciation costs were covered by the preliminary valuation of property, plant, and equipment (PPE). Total Asset is represented by T.A., while arbitrary errors are shown by $\varepsilon_{i,t}$.

Discretionary accruals (DAC) (total accruals minus non-discretionary accruals) were measured using equation 3 (see below):

$$DAC_{it} = TAC_{it} - NDAC_{it} \quad (3)$$

3.2.1.2 Measurement of Real-activity Based Earnings Management

The study used the Dechow et al. (1998) model to assess cash flow from operating activities, production cost, and discretionary cost, which is consistent with earlier research (e.g., Uddin,2022,Helal,2022,Xiao & Uddin,2023).

In the first model, abnormal operating cash flow is calculated by subtracting service cash flow from the predictable operating cash flow for each organization on an annual basis. Here is the model (refer to equation 4):

$$\frac{CFO_{it}}{ASSET_{i,t-1}} = \beta_1 \left(\frac{1}{ASSET_{i,t-1}} \right) + \beta_2 \left(\frac{SALES_{it}}{ASSET_{i,t-1}} \right) + \beta_3 \left(\frac{\Delta SALES_{it}}{ASSET_{i,t-1}} \right) + \varepsilon_{it} \quad (4)$$

Net operational cash flow is denoted by CFO, total asset value is represented by ASSET, and changes in total sales value are shown by $\Delta SALES$. While the following model (see equation 5) was used to calculate production cost and regressed for each firm:

$$\frac{DISCexpenses_{it}}{ASSET_{i,t-1}} = \beta_1 \left(\frac{1}{ASSET_{i,t-1}} \right) + \beta_2 \left(\frac{SALES_{it}}{ASSET_{i,t-1}} \right) + \varepsilon_{it} \quad (5)$$

PROD stands for both the change in inventory and the total value of items sold. The projected amount of manufacturing costs was deducted from each company's total cost of goods sold and change in inventory to determine the anomalous production cost. As demonstrated by the accompanying model, we assessed discretionary expenses using the following model (refer to equation 6):

$$\frac{PROD_{it}}{ASSET_{i,t-1}} = \beta_1 \left(\frac{1}{ASSET_{i,t-1}} \right) + \beta_2 \left(\frac{SALES_{it}}{ASSET_{i,t-1}} \right) + \beta_3 \left(\frac{\Delta SALES_{it}}{ASSET_{i,t-1}} \right) + \beta_4 \left(\frac{\Delta SALES_{i,t-1}}{ASSET_{i,t-1}} \right) + \varepsilon_{it} \quad (6)$$

In this context, "DISC" refers to the selling, administrative, and R&D costs that are shown in the profit and loss statement. The difference between the total amount of other charges associated with in-service items and the anticipated value of discretionary costs was used to calculate abnormal discretionary expenses.

For every organization, the study produced an overall measure of earnings management (see equation 7) based on the three models (equations 4 to 6) mentioned above.

$$REM \text{ (Real-earnings management)} = \sum \frac{CFO_{it}}{ASSET_{i,t-1}} + \frac{PROD_{it}}{ASSET_{i,t-1}} + \frac{DISCexpenses_{it}}{ASSET_{i,t-1}} \quad (7)$$

3.2.2 Corporate Governance Index

Six parameters have been considered as corporate governance variables in this study. Table 2 describes the methodology used to measure it. From the corporate governance requirements of Bangladesh, six variables have been chosen and placed into two groups. These recommendations were chosen using pertinent data from annual reports of particular non-financial organizations. The study's measurement of the corporate governance index, which is the sum of each variable score and indicates an effective board and audit committee feature, is based on these six corporate governance factors and was derived from a prior study (Zalata & Roberts, 2015).

3.3 Research Model

Using multivariate linear regression with the ordinary least squares approach, we have analyzed the data and tested our predictions. According to Born and Breitung (2016) and Gujarati (2003), the ordinary least squares (OLS) model is a popular choice for estimating non-linear relationships with standard data setting. The OLS estimating approach is useful, as Wagner (2005) claims, under specific circumstances. Among these prerequisites are the requirements of homoscedasticity, independence, and same distribution of the errors, as well as the fulfillment of the assumptions of traditional linear regression. The following terms best characterize the primary model.

$$EM_{it} = \beta_0 + \beta_1(CGI_{it}) + \beta_2(BDI_{it}) + \beta_3(ACMI_{it}) + \beta_4(LD_{it}) + \beta_5(LEV_{it}) + \beta_6(ROA_{it}) + \beta_7(MBR_{it}) + \beta_8(TQ_{it}) + \beta_9(DSTR_{it}) + \beta_{10}(SIZE_{it}) + \beta_{11}(AOC_{it}) + \beta_{12}(LTAC_{it}) + \beta_{13}(\text{Yearfixedeffects}_{it}) + \beta_{14}(\text{Industryfixedeffects}_{it}) + \varepsilon_{it} \quad (8)$$

This study investigates the aforementioned idea using equation (8). Equation eight is employed to evaluate the corporate governance hypothesis. The key explanatory variables in the model consist of corporate governance indices, including the Corporate Governance Index (CGI), Board-Diversity Index (BDI), and Audit Committee Index (ACMI), while others are control variables. Based on the existing literature, this study considers a variety of control factors. The association between a company's size and its usage of earnings management has been the subject of conflicting findings in previous study. According to Bouaziz et al. (2020), managers of large companies typically have control over operational systems and accounting processes when it comes to recording and reporting. Some independent variables that have been shown in prior research to potentially affect the relationship between corporate governance practices and earnings management are included as control variables in our model. For instance, some research has employed business size as a control variable in order to account for the varied outcomes (Sellami & Slimi, 2016). Nevertheless, the larger company possessed additional authority in selecting accounting methods and operational systems (Bouaziz et al., 2020). A consistent correlation has been observed between the size of enterprises and earnings management, as demonstrated by studies conducted by Dechow & Skinner (2000). Conversely, multiple studies have shown that large companies typically possess modern internal control systems, which reduces the likelihood of engaging in earnings management (Zouari et al., 2012). In addition, the analysis incorporates additional components due to the inconsistent findings of prior studies involving these variables, specifically firm financial leverage (Uddin, 2023). Additionally, the return on assets can be determined by referring to the studies conducted by Barua et al. (2010), Alzoubi (2018), Lopes (2018), and Laksmana & Yang (2014). The third metric is the market-to-book ratio, as identified by El Guindy and Basuony in 2018. Next, we calculate the mean operating cycle based on the methodology proposed by Kordestani & Mohammadi (2016). Ultimately, we assess the loss dummy variable as outlined by (Xiao & Uddin, 2023), the loan maturity structure, the lagged total accruals and Tobin's Q (Helal, 2022). The study first gives the definitions of the variables in Table 2, and then presents the descriptive statistics.

Table 2. Definitions of the variables

Variable	Description	Sources
Independent Variable:		
Corporate Governance Index (CGI)	Averages of each individual variable score (Such as; BS, BDM, FMLD, IND, ACM, ACMT).	
Board-diversity index(BDI)	Averages of each individual variable score (Such as; BS, BDM, FMLD, IND)	
Audit committee index(ACMI)	Averages of each individual variable score (Such as; ACM, ACMT).	
LD (Loss Dummy)	If companies incur loss in a year we denoted it by 1 and 0 otherwise (Zhang et al., 2020)	
LEV(Leverage)	The ratio of total shareholders' equity to total assets (Zouari et al., 2012)	
ROA (Return on Asset)	We measure ROA by using the formula, such as, Net income / Total asset (Barua et al., 2010)	
MBR(Market to Book Ratio)	Market value divided by the book value of shareholders equity (El Guindy & Basuony, 2018)	
TQ (Tobin's Q)	Tobin's q is the market value of equity plus the book value of total debt divided by the book value of asset (Muttakin et al., 2017)	
DSTR (Debt maturity structure)	Total current liabilities to total liabilities.(Lemma et al., 2018)	
SIZE (Firm Size)	Firm Size is calculated by taking the natural log of total sales (Sellami & Slimi, 2016)	
AOC (Average Operating Cycle)	We use the following formula $\left(\frac{\text{Average account receivable}}{\text{Sales}/360} + \frac{\text{Average Inventory}}{\text{Cost of Good sold}/360} \right) - \frac{\text{Average account Payable}}{\text{Purchase}/360}$ (Kordestani & Mohammadi, 2016)	
LTAC (Lagged total Accruals)	Lagged total accruals (Muttakin et al., 2015)	

4. Empirical Findings and Discussion

4.1 Descriptive Statistics

Table 3 illustrates the findings of descriptive statistics. The average value of real earnings management is 0.42, and accrual earnings management has a mean value of 0.391. The findings of Lemma et al. (2018), which show that these countries' average real-earnings management and discretionary accruals vary from 0.45 to 0.50, are consistent with the results. The corporate governance index has a mean score of 9.001, a minimum of 4.2, and a maximum of 25.95.

Table 3. Descriptive statistics

Variable	OBS	Mean	Stand. dev	Min	Max
AEM (DACC)	1298	0.391	0.681	0	1.976
REM	1298	0.424	0.293	0	2.005
CGI	1298	9.001	2.285	4.2	25.95
BDI	1298	5.023	1.659	1.75	14.5
ACMI	1298	3.789	1.207	1	14
LEV	1298	0.108	0.133	0	2.183
ROA	1298	0.067	0.66	-2.969	23.542
MBR	1298	0.355	0.271	-4.11	0.985
TQ	1298	0.48	0.38	-3.571	9.865

DSTR	1298	0.34	0.211	0.003	1.599
SIZE	1298	7.049	1.662	2.185	11.865
LTAC	1298	-2.481	2.52	-3.078	0.852
AOC	1298	-1.828	2.768	-4.03	0.713
LD	1298	0.06	0.237	0	1

Table 3 demonstrates that the maximum score of board-diversity index (BDI) is 14.5, whereas minimum score is 1.75 and average score is 5.023. The average audit committee size is 3.789, while lowest score is 1 and highest score is 14. The study has used a range of control variable, average leverage ratio is 0.108, while highest and lowest are 2.18 and 0 respectively. The lowest value of return on asset is negative because some firms incurred losses in some years. Average market to book value ratio is 0.355, whereas highest 0.98 and lowest value is -4.11. The study considers the logarithm value of Tobin's Q, Debt maturity structure, business size, lagged total accruals, and average operating cycle.

4.2 Bivariate Analysis

Table 4 shows the relationships between the independent, dependent, and control variables. The variables do not generally exhibit any multicollinearity. On the contrary, multicollinearity problems might arise when there is a strong relationship between variables, particularly if the correlation coefficients exceed 0.8 (Uddin, 2022; Uddin, 2023). The results suggest a positive relationship between the corporate governance index, audit committee index, and discretionary accruals. The correlation coefficient results show that the board-diversity index negatively impacts discretionary accruals. However, all independent variables negatively impact real earnings manipulation. The study further utilizes regression analysis to evaluate the impacting rules of corporate governance mechanisms.

Table 4. Bivariate analyses: Correlation analyses

Variable	AEM	REM	CGI	BDI	ACMI	LEV	ROA	MBR	TQ	DST				
										R	SIZE	LTAC	AOC	LD
AEM	1.00													
REM	0.48	1.00												
CGI	0.02	-0.12	1.00											
BDI	-0.02	-0.13	0.56	1.00										
ACMI	0.07	-0.05	0.41	0.25	1.00									
LEV	0.00	-0.11	0.25	0.19	0.22	1.00								
ROA	-0.02	0.01	-0.02	-0.02	-0.01	-0.02	1.00							
MBR	0.06	0.04	-0.07	-0.04	-0.08	-0.05	-0.02	1.00						
TQ	0.03	-0.05	0.00	0.00	0.01	0.21	-0.02	0.41	1.00					
DSTR	0.02	0.16	-0.18	-0.18	-0.09	-0.06	0.02	-0.03	0.04	1.00				
SIZE	-0.43	-0.24	0.11	0.13	0.02	0.13	0.03	-0.12	0.01	0.17	1.00			
LTAC	-0.22	-0.15	0.12	0.12	0.05	-0.03	-0.05	-0.15	-0.10	0.00	0.29	1.00		
AOC	0.01	0.02	0.03	-0.03	0.09	-0.04	0.00	-0.02	-0.03	0.06	0.01	-0.02	1.00	
LD	0.05	0.05	-0.06	-0.09	0.01	0.11	-0.05	0.02	0.04	0.03	-0.14	-0.01	0.03	1.00

4.3 The Relationship Between Corporate Governance and Earnings Management: Empirical Results Discussion

Tables 5 and 6 illustrate the empirical results of corporate governance index and earnings management. Model 1 shows the findings of the corporate governance index; Model 2 demonstrates the findings of the board-diversity index, and Model 3 illustrates the evidence of the audit committee index. To evaluate the connection, the study used an Ordinary Least Squares (OLS) regression model. The multicollinearity test shows that the highest variance inflation factor (VIF)

is 1.14 (see Table 9), which suggests that multicollinearity is not a statistically significant problem. Real earnings manipulation is shown in Table 6, while accrual earnings management is seen in Table 5's observed results. To determine how CG affects EM, we first performed a study using Ordinary Least Squares (OLS) regression models. Autocorrelation and heteroscedasticity effects can be effectively mitigated by this regression model (Gujarati, 2003; Wooldridge, 2013).

Table 5. Corporate governance index and accrual earnings management

Variable	Model 1	Model 2	Model 3
Intercept	-0.313**(-2.14)	0.204(1.42)	0.270*(1.89)
CGI	-0.057***(-3.30)		
BDI		0.032*** (3.21)	
ACMI			-0.056***(-4.39)
LEV	0.296**(2.47)	0.227*(1.90)	0.184(1.58)
ROA	-0.019(-0.85)	-0.018(-0.82)	-0.019(-0.85)
MBR	-0.055(-0.87)	-0.060(-0.96)	-0.044(-0.71)
TQ	0.002(0.04)	0.002(0.05)	-0.001(-0.020)
DSTR	0.151**(2.04)	0.186**(2.49)	0.168**(2.28)
SIZE	-0.175***(-12.33)	-0.179***(-12.74)	-0.171***(-12.28)
LTAC	-0.000(-12.33)	-0.000(-1.43)	-0.000(-1.37)
AOC	-0.000(-0.17)	-0.000(-0.23)	-0.000(-0.78)
LD	-0.084(-1.30)	-0.071(-1.11)	-0.077(-1.21)
Adj. R-square	0.236	0.242	0.247
YEAR EFFECT	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes
OBS	1298	1298	1298

Note: The presented table displays the outcomes of the regression analysis conducted on the relationship between corporate governance and earnings management. In statistical analysis, the levels of significance are denoted by asterisks, namely *, **, and *** for the 10%, 5%, and 1% levels, respectively. The values enclosed in brackets denote the T-value.

Table 6. Corporate governance index and real earnings management

Variable	Model 1	Model 2	Model 3
Intercept	-0.332**(-2.24)	-0.352**(-2.34)	0.063(0.42)
CGI	-0.049***(-2.78)		
BDI		0.004(0.39)	
ACMI			-0.010(-0.74)
LEV	-0.179(-1.43)	-0.173(-1.39)	-0.184(-1.46)
ROA	0.003(0.12)	0.003(0.13)	0.003(0.12)
MBR	0.119*(1.81)	0.123*(1.88)	0.126*(1.92)
TQ	-0.100**(-2.21)	-0.098**(-2.16)	-0.099**(-2.17)
DSTR	0.549*** (7.11)	0.553*** (7.09)	0.552*** (7.14)
SIZE	0.044(1.98)	0.053(1.48)	0.049(1.68)
LTAC	-0.000***(-3.65)	-0.000***(-3.70)	-0.000***(-3.70)
AOC	-0.000(-0.60)	-0.000(-0.67)	-0.000(-0.76)
LD	0.003(0.04)	0.002(0.02)	0.001(0.02)
Adj. R-square	0.194	0.194	0.194
YEAR EFFECT	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes
OBS	1298	1298	1298

Note: The presented table displays the outcomes of the regression analysis conducted on the relationship between Board-diversity index, audit committee index and real earnings management. In statistical analysis, the levels of significance are denoted by asterisks, namely *, **, and *** for the 10%, 5%, and 1% levels, respectively. The values enclosed in brackets denote the T-value.

Consistent with Zalata & Roberts (2015) and Uddin (2022), the study measures the corporate governance index to investigate the relationship between corporate governance and earnings management. Research shows that the corporate governance index (CGI) significantly impacts earnings management (Uddin, 2022; Al-Haddad & Whittington, 2019). The empirical results of this study pointed out that CGI has significant negative impacts on earnings management. At a significance level of 1%, the coefficients are -0.057*** (-3.30) and -0.049*** (-2.78), respectively. Results showed that the governance mechanism reduces the likelihood of manipulation of earnings in Bangladesh's non-financial organizations.

The finding is consistent with the results of earlier studies, including those by Uddin (2022) and Al-Haddad & Whittington (2019). Moreover, the technique of earnings management benefits greatly from the existence of a diverse board. This evidence is reliable with the outcomes of Sarairoh et al.'s (2022). Accrual earnings management is strongly impacted negatively by the Audit Committee Index (ACMI). The assumption that having audit committees that are completely competent, impartial, and experienced contributes to a strong internal corporate governance system is supported by this conclusion. Thus, the degree of earnings management is subsequently limited (Davidson et al., 2005). Compared to other characteristics, corporate governance indexes have a stronger impact on accrual earnings management.

5. Additional Test

The study also uses the Jones model (Jones, 1991), the Kothari model (Kothari, 2005), and the Caylor model (Caylor, 2010) as alternative accrual earnings management models. Additionally, three proxies for real earnings management are used in the study: abnormal cash flow from operating operations, abnormal production cost, and abnormal discretionary expense. The results of the investigation into the connection between earnings management and other models of earnings management are presented in Table 7. Qualitatively, the results confirm the key conclusions of the regression model.

Table 7. Corporate governance index and earnings management: Alternative earnings management model

Variables	Alternative accrual earnings management models			Alternative real earnings management models		
	Jones model	Kothari model	Caylor model	Abnormal production cost	Abnormal cash flow from operating activities	Abnormal discretionary cost
Intercept	-0.354*(-1.83)	-0.372*(-1.91)	-0.951***(-3.97)	-0.753***(-3.70)	-0.397**(-2.03)	-1.002***(-5.11)
CGI	-0.302***(-2.91)	-0.322***(-3.07)	-0.139(-1.08)	-0.150(-1.37)	-0.214**(-2.04)	-0.028(-0.26)
BDI	0.140*** (3.39)	0.148*** (3.56)	0.036(0.710)	0.052(1.19)	0.100** (2.41)	0.019(0.46)
ACMI	0.111*** (4.61)	0.113*** (4.68)	-0.025(-0.84)	0.037(1.47)	0.053** (2.20)	-0.017(-0.71)
LEV	0.166(1.40)	0.146(1.22)	-0.122(-0.83)	-0.252**(-2.02)	-0.121(-1.01)	-0.144(-1.20)
ROA	-0.017(-0.78)	0.004(0.17)	0.017(0.64)	0.011(0.51)	0.002(0.11)	-0.058***(-2.68)
MBR	-0.067(-1.08)	-0.067(-1.07)	0.125(1.64)	-0.034(-0.520)	0.120*(1.92)	-0.021(-0.33)
TQ	-0.004(-0.100)	-0.004(-0.09)	-0.002(-0.04)	-0.021(-0.480)	-0.020(-0.47)	-0.008(-0.18)
DSTR	0.210*** (2.85)	0.223*** (3.00)	0.184** (2.02)	0.473*** (6.10)	0.353*** (4.76)	0.486*** (6.51)
SIZE	-0.150***(-9.58)	-0.152***(-9.60)	0.031(1.59)	0.100*** (6.06)	-0.044***(-2.78)	0.140*** (8.81)
LTAC	0.000*(-1.71)	0.000(-1.52)	0.000(1.28)	0.000*(-1.94)	0.000*(-1.94)	0.000***(-2.67)
AOC	0.000(-0.88)	0.000(-0.73)	0.000(0.77)	0.000(0.15)	0.000(-1.24)	0.000(-1.59)
LD	-0.068(-1.09)	-0.058(-0.92)	0.029(0.38)	-0.136**(-2.07)	-0.003(-0.04)	-0.052(-0.83)
Adj. R-square	0.260	0.257	0.206	0.182	0.201	0.286
YEAR EFFECT	Yes	Yes	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes	Yes	Yes
OBS	1298	1298	1298	1298	1298	1298

Note: The presented table displays the outcomes of the regression analysis conducted on the relationship between Board-diversity index, audit committee index, and alternative earnings management model. In statistical analysis, the levels of significance are denoted by asterisks, namely *, **, and *** for the 10%, 5%, and 1% levels, respectively. The values enclosed in brackets denote the T-value.

5.1 Test of Heteroscedasticity

“The foundation of the Ordinary Least Squares (OLS) regression is the idea that all residuals have homoscedasticity, or a population with a constant variance”. Therefore, the wellknown Breusch and Pagan (1979) test is used to determine whether the variables are homoscedastic. The state in which the variability of various groups is equal or comparable is known as homoscedasticity. Given that parametric statistical studies are sensitive to differences, this is significant. Uneven discrepancies in observations typically result in skewed and prejudiced conclusions. The p-value is the main metric used in the test. When the p-value for the test statistic is less than 0.05, the homoskedasticity null hypothesis is rejected. However, according to Braun and Pagan (1979), heteroskedasticity is permitted. As can be seen from Table 8's data, there may be homoscedasticity of variance because the p-value is greater than 0.05 ($P > 0.05$).

Table 8. Test of heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity				
Ho: Constant variance				
Variables: fitted values of accrual and real earnings management				
Accrual earnings management		Real earnings management		
chi2(1) =	0.56	chi2(1) =	0.00	
Prob.> chi2 =	0.4558	Prob.> chi2 =	0.9745	

5.2 Test of Multicollinearity

If the independent variables relate to each other highly significantly, then it is called multicollinearity. Because of this problem, confidence intervals may get wider, and probability estimates about the effects of independent factors in a model may need to be more reliable. In mathematics, the Variance Inflation Factor (VIF) is found by dividing the overall variance of the model by the variance of a model that only includes the independent variable on which the regression is being studied. The ratio is found for each quantity separately. High VIF means a high level of interconnection between the variables. When there is multicollinearity in a regression model, it can be hard to tell the difference between the effects of each independent variable on the dependent variable. There is no highest number limit of VIF, but it starts from 1. Snee (1981) says that if the Variance Inflation Factor (VIF) number is high, usually over 5 or 10, the independent variables are significantly multicollinear. Table 9 illustrates that no value is more than 5, meaning the model does not suffer multicollinearity problems.

Table 9. Test of Multicollinearity

Variable	VIF	1/VIF
CGI	1.14	0.879015
BDI	1.11	0.897044
ACMI	1.08	0.92834
MBR	1.44	0.696085
SIZE	1.34	0.745881
TQ	1.32	0.755755
LEV	1.28	0.784013
LTAC	1.21	0.826118
DSTR	1.16	0.860948
LD	1.08	0.925731
AOC	1.05	0.951297
ROA	1.02	0.985113
Mean VIF	1.14	

6. Conclusion

The present study examines the relationship between the corporate governance index (namely, the board diversity index and audit committee characteristics index) and earnings management, as seen by non-financial firms in Bangladesh. The study examines the above relationship according to different dimensions:

1. The study measures earnings management using modified Jones, then real earnings management according to Roy Chowdhury's model.
2. Based on corporate governance variables, the study measures three indexes, such as the corporate governance index (CGI), the board-diversity index (BDI), and the audit committee index (ACI).

For the purpose of determining the empirical nature of the connection between corporate governance and earnings management, the OLS regression approach was utilized in the research. The first empirical study establishes the connection between accrual earnings management and the corporate governance index (see Table 4). The second study, on the other hand, demonstrates the effects of the corporate governance index on real earnings management (the results of which are presented in Table 5). In addition, additional sensitivity testing is utilized in order to verify the validity of the model. For example, Table 8 displays the results of the heteroscedasticity test, while Table 9 illustrates the evidence of the multicollinearity test. Both of these tables are examples of additional sensitivity testing. According to the findings, the corporate governance index has a considerable and detrimental effect on earnings management in Bangladeshi firms that are not classified as financial institutions. The corporate governance index demonstrates that accrual earnings management is more affected by governance mechanism than real earnings management. On the other hand, the audit committee index (ACMI) has a considerable negative influence on accrual earnings management, whereas the board-diversity index has a positive impact on the management of accrual earnings. There are a few drawbacks to the study, such as the fact that it only takes into account the non-financial organizations of Bangladesh; additional research might be undertaken based on other developed and developing countries. There is a possibility that additional study will be focused on increased structures of corporate governance processes.

References

- Abbas, U. (2020). The Moderating Effect of Gender on Audit Committee Attributes and Earnings Management. *International Journal of Business Policy & Governance*, 7(3), 48-62. <https://doi.org/10.19085/sijbpg070302>
- Abbott, L. J., & Parker, S. (2000). Auditor selection and audit committee characteristics. *AUDITING: A Journal of Practice & Theory*, 19(2), 47-66. <https://doi.org/10.2308/aud.2000.19.2.47>
- Ahmed, H., & Azim, M. (2015). Earnings management behavior: A study on the cement industry of Bangladesh. *Economics*, 2(4), 265-276.
- Al-Haddad, L., & Whittington, M. (2019). the impact of corporate governance mechanisms on real and accrual earnings management practices: evidence from Jordan. *Corporate Governance: The International Journal of Business in Society*. <https://doi.org/10.1108/CG-05-2018-0183>
- Almasarwah, A. K. (2015). Earnings management and its relationship with corporate governance mechanisms in Jordanian industrial firms. *Doctoral dissertation*, Loughborough University.
- Ball, R., & Shivakumar, L. (2008). How much new information is there in earnings?. *Journal of Accounting Research*, 46(5), 975-1016. <https://doi.org/10.1111/j.1475-679X.2008.00299>
- Barton, J., & Simko, P. J. (2002). The balance sheet as an earnings management constraint. *The Accounting Review*, 77(s-1), 1-27. Retrieved from <https://www.jstor.org/stable/3203322>
- Baxter, P., & Cotter, J. (2009). Audit committees and earnings quality. *Accounting & Finance*, 49(2), 267-290. <https://doi.org/10.1111/j.1467-629X.2008.00290.x>
- Bedard, J., Chtourou, S. M., & Courteau, L. (2004). The effect of audit committee expertise, independence, and activity on aggressive earnings management, *Auditing: A Journal of Practice & Theory*, 23(2), 13-35. <https://doi.org/10.2308/aud.2004.23.2.13>
- Bergstresser, D., & Philippon, T. (2006). CEO incentives and earnings management. *Journal of financial economics*, 80(3), 511-529. Retrieved from <https://archivefda.dlib.nyu.edu/jspui/bitstream/2451/26408/2/FIN-05-007.pdf>
- Bernardi, R. A., & Arnold Sr, D. F. (1997). An examination of moral development within public accounting by gender, staff level, and firm. *Contemporary Accounting Research*, 14(4), 653-668. <https://doi.org/10.1111/j.1911-3846.1997.tb00545.x>
- Betz, M., O'Connell, L., & Shepard, J. M. (1989). Gender differences in proclivity for unethical behavior. *Journal of Business Ethics*, 8(5), 321-324. Retrieved from <https://www.jstor.org/stable/25071905>
- Born, B., & Breitung, J. (2016). Testing for serial correlation in fixed-effects panel data models. *Econometric Reviews*, 35(7), 1290-1316.
- Bouaziz, D., Salhi, B., & Jarboui, A. (2020). CEO characteristics and earnings management: empirical evidence from France. *Journal of Financial Reporting and Accounting*. <https://doi.org/10.1108/JFRA-01-2019-0008>
- Byrnes, J. P., Miller, D. C., & Schafer, W. D. (1999). Gender differences in risk taking: a meta-analysis. *Psychological bulletin*, 125(3), 367. Retrieved from https://psycnet.apa.org/buy/1999-13573-004?mod=article_inline
- Cadbury, A. (1992). *Cadbury report: The financial aspects of corporate governance*. Tech rept, HMG.

- Callao, S., Jarne, J. I., & Wroblewski, D. (2021). A systematic approach to the motivations for earnings management: A literature review. *International Journal of Emerging Trends in Social Sciences*, 10(1), 1-20.
- Caylor, M. L. (2010). Strategic revenue recognition to achieve earnings benchmarks. *Journal of Accounting and Public Policy*, 29(1), 82-95.
- Chandra, A., & Wimelda, L. (2018). Opportunistic behavior, external monitoring mechanisms, corporate governance, and earnings management. *Accounting and finance review*, 3(1), 44-52.
- Dechow, P. M., & Skinner, D. J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting horizons*, 14(2), 235-250. <https://doi.org/10.2308/acch.2000.14.2.235>
- Dechow, P. M., Kothari, S. P., & Watts, R. L. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25(2), 133-168.
- El Guindy, M. N., & Basuony, M. A. (2018). Audit firm tenure and earnings management: the impact of changing accounting standards in UK firms. *The Journal of Developing Areas*, 52(4), 167-181. <https://doi.org/10.1353/jda.2018.0058>
- Eriabie, S. O., & Odia, J. (2016). Effects of characteristics of audit committee on earnings management in Nigerian quoted companies. *Sokoto Journal of Management Studies*, 10(1), 139-159. Retrieved from <http://eprints.covenantuniversity.edu.ng/id/eprint/10225>
- Fields, T. D., Lys, T. Z., & Vincent, L. (2001). Empirical research on accounting choice. *Journal of Accounting and Economics*, 31(1-3), 255-307. [https://doi.org/10.1016/S0165-4101\(01\)00028-3](https://doi.org/10.1016/S0165-4101(01)00028-3)
- Ghosh, A., Marra, A., & Moon, D. (2010). Corporate boards, audit committees, and earnings management: pre-and post-sox evidence. *Journal of Business Finance & Accounting*, 37(10), 1145-1176. <https://doi.org/10.1111/j.1468-5957.2010.02218.x>
- Goodstein, J., Gautam, K., & Boeker, W. (1994), the effects of board size and diversity on strategic change, *Strategic management journal*, 15(3), 241-250. Retrieved from <https://www.jstor.org/stable/2486969>
- Gujarati, D., & Porter, D. (2003). Multicollinearity: What happens if the regressors are correlated. *Basic econometrics*, 363.
- Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices?. *Journal of accounting and Economics*, 51(3), 314-338. <https://doi.org/10.1016/j.jacceco.2011.01.005>
- Gull, A. A., Nekhili, M., Nagati, H., & Chtioui, T. (2018). Beyond gender diversity: How specific attributes of female directors affect earnings management. *The British Accounting Review*, 50(3), 255-274. <https://doi.org/10.1016/j.bar.2017.09.001>
- Gulzar, M. A. A. (2011). Corporate governance characteristics and earnings management: Empirical evidence from Chinese listed firms. *International Journal of Accounting and Financial Reporting*, 1(1), 133-151. <https://doi.org/10.5296/ijaf.v1i1.854>
- Habbash, M. (2010). The effectiveness of corporate governance and external audit on constraining earnings management practice in the UK. *Doctoral dissertation*, Durham University.
- Habib, A. (2005). Firm-specific determinants of income smoothing in Bangladesh: An empirical evaluation. *Advances in International Accounting*, 18, 53-71. [https://doi.org/10.1016/S0897-3660\(05\)18003-9](https://doi.org/10.1016/S0897-3660(05)18003-9)
- Hamzah, A. H., & Zulkafli, A. H. (2014). Board diversity and corporate expropriation. *Procedia-Social and Behavioral Sciences*, 164, 562-568. <https://doi.org/10.1016/j.sbspro.2014.11.146>
- Haniffa, R. M., & Cooke, T. E. (2002). Culture, corporate governance and disclosure in Malaysian corporations. *Abacus*, 38(3), 317-349. <https://doi.org/10.1111/1467-6281.00112>
- Haniffa, R., Rahman, R. A., & Ali, F. H. M. (2006). Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal*, 21(7), 783-804. <https://doi.org/10.1108/02686900610680549>
- Harakeh, M., El-Gammal, W., & Matar, G. (2019). Female directors, earnings management, and CEO incentive compensation: UK evidence. *Research in International Business and Finance*, 50, 153-170. <https://doi.org/10.1016/j.ribaf.2019.05.001>
- Hashim, H. A., & Amrah, M. (2016). Corporate governance mechanisms and cost of debt: Evidence of family and non-family firms in Oman. *Managerial Auditing Journal*, 31(3), 314-336. <https://doi.org/10.1108/MAJ-12-2014-1139>

- Helal, U. M. (2022). Board-diversity, audit committee characteristics and earnings management: Family versus non-family controlled firms. *Journal of Accounting and Taxation*, 14(2), 170-188.
- Jenny, S., & Lois, M. (2007). The Impact of Audit Committee Existence and Audit Committee Meeting Frequency on the External Audit: Perceptions of Australian Auditors. *International Journal of Auditing*, 11(1), 51-69. <https://doi.org/10.1111/j.1099-1123.2007.00356.x>
- Kaplan, S., Pany, K., Samuels, J., & Zhang, J. (2009). An examination of the association between gender and reporting intentions for fraudulent financial reporting. *Journal of Business Ethics*, 87(1), 15-30. Retrieved from <https://link.springer.com/article/10.1007/s10551-008-9866-1>
- Kelton, A. S., & Yang, Y. W. (2008). The impact of corporate governance on Internet financial reporting. *Journal of Accounting and Public Policy*, 27(1), 62-87. <https://doi.org/10.1016/j.jaccpubpol.2007.11.001>
- Kesner, I. F., & Johnson, R. B. (1990). An investigation of the relationship between board composition and stockholder suits. *Strategic Management Journal*, 11(4), 327-336. Retrieved from <https://www.jstor.org/stable/2486684>
- Kordestani, G. R., & Mohammadi, M. R. (2016). A study of the relationship between product market competition & earnings management. *Procedia economics and finance*, 36, 266-273. [https://doi.org/10.1016/S2212-5671\(16\)30037-5](https://doi.org/10.1016/S2212-5671(16)30037-5)
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1-2), 3-27. [https://doi.org/10.1016/S0304-405X\(00\)00065-9](https://doi.org/10.1016/S0304-405X(00)00065-9)
- Laksmna, I., & Yang, Y. W. (2014). Product market competition and earnings management: Evidence from discretionary accruals and real activity manipulation. *Advances in Accounting*, 30(2), 263-275. <https://doi.org/10.1016/j.adiac.2014.09.003>
- Lemma, T. T., Negash, M., Mlilo, M., & Lulseged, A. (2018). Institutional ownership, product market competition, and earnings management: Some evidence from international data. *Journal of Business Research*, 90, 151-163. <https://doi.org/10.1016/j.jbusres.2018.04.035>
- Lin, J. W., & Hwang, M. I. (2010). Audit quality, corporate governance, and earnings management: A meta-analysis. *International Journal of Auditing*, 14(1), 57-77.
- Lopes, A. P. (2018). Audit quality and earnings management: evidence from Portugal. *Athens Journal of Business & Economics*, 4(2), 179-192. <https://doi.org/10.30958/ajbe.4.2.4>
- Muttakin, M. B., Khan, A., & Azim, M. I. (2015). Corporate social responsibility disclosures and earnings quality Are they a reflection of managers' opportunistic behavior?. *Managerial Auditing Journal*, 30(3), 277-298. <https://doi.org/10.1108/MAJ-02-2014-0997>
- Muttakin, M. B., Khan, A., & Mihret, D. G. (2017). Business group affiliation, earnings management and audit quality: evidence from Bangladesh. *Managerial Auditing Journal*, 32(4/5), 427-444. <https://doi.org/10.1108/MAJ-01-2016-1310>
- Obigbemi, I. F., Omolehinwa, E. O., Mukoro, D. O., Ben-Caleb, E., & Olusanmi, O. A. (2016). Earnings management and board structure: evidence from Nigeria. *Sage Open*, 6(3). <https://doi.org/10.1177%2F2158244016667992>
- Osma, B. G., & Nogue, B. G. D. A. (2007). The effect of the board composition and its monitoring committees on earnings management: Evidence from Spain. *Corporate Governance: An International Review*, 15(6), 1413-1428. <https://doi.org/10.1111/j.1467-8683.2007.00654.x>
- Peasnell, K. V., Pope, P. F., & Young, S. (2005). Board monitoring and earnings management: do outside directors' influence abnormal accruals?. *Journal of Business Finance & Accounting*, 32(7-8), 1311-1346. <https://doi.org/10.1111/j.0306-686X.2005.00630.x>
- Peni, E., & Vahamaa, S. (2010). Female executives and earnings management. *Managerial Finance Journal*, 36(7), 629-645. <https://doi.org/10.1108/03074351011050343>
- Prencipe, A., & Bar-Yosef, S. (2011). Corporate governance and earnings management in family-controlled companies. *Journal of Accounting, Auditing & Finance*, 26(2), 199-227. <https://doi.org/10.1177%2F0148558X11401212>
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of accounting and economics*, 42(3), 335-370. <https://doi.org/10.1016/j.jacceco.2006.01.002>
- Saleh, N., Iskandar, T., & Rahmat, M. (2007). Audit committee characteristics and earnings management: evidence

- from Malaysia. *The Asian Review of Accounting*, 15(2), 147-163. <https://doi.org/10.1108/13217340710823369>
- Sarkar, J., Sarkar, S., & Sen, K. (2008). Board of directors and opportunistic earnings management: Evidence from India. *Journal of Accounting, Auditing & Finance*, 23(4), 517-551. <https://doi.org/10.1177%2F0148558X0802300405>
- Sellami, Y. M., & Slimi, I. (2016). The effect of the mandatory adoption of IAS/IFRS on earnings management: Empirical evidence from South Africa. *International Journal of Accounting and Economics Studies*, 4(2), 87-95. <https://doi.org/10.14419/ijaes.v4i2.6121>
- Siddiqui, J. (2010). Development of corporate governance regulations: the case of an emerging economy. *Journal of Business Ethic*, 91(2), 253-274. Retrieved from <https://link.springer.com/article/10.1007/s10551-009-0082-4>
- Snee, R. (1981). Origins of the Variance Inflation Factor as Recalled by Cuthbert Daniel (Technical report). Snee Associates.
- Srinidhi, B. I. N., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. *Contemporary Accounting Research*, 28(5), 1610-1644. <https://doi.org/10.1111/j.1911-3846.2011.01071.x>
- Sun, J., & Cahan, S. (2009). The effect of compensation committee quality on the association between CEO cash compensation and accounting performance. *Corporate Governance: An International Review*, 17(2), 193-207.
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics*, 53(1), 113-142. [https://doi.org/10.1016/S0304-405X\(99\)00018-5](https://doi.org/10.1016/S0304-405X(99)00018-5)
- Wagner, M. (2005). How to reconcile environmental and economic performance to improve corporate sustainability: corporate environmental strategies in the European paper industry. *Journal of Environmental Management*, 76(2), 105-118.
- Xiao, Z.-P., & Uddin, M. H. (2023). The Moderating Role of Corporate Governance Mechanism on the Relationship between Corporate Financing and Earnings Management: Evidence from Bangladesh. *Review of Economics and Finance*, 21. <https://doi.org/10.55365/1923.x2023.21.238>
- Xie, B., Davidson III, W. N., & DaDalt, P. J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of Corporate Finance*, 9(3), 295-316.
- Zalata, A., & Roberts, C. (2015). Internal corporate governance and classification shifting practices: an analysis of UK corporate behavior. *Journal of Accounting, Auditing & Finance*, 31(1), 51-78.
- Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, 87(2), 675-703. <https://doi.org/10.2308/accr-10196>
- Zhang, Y., Uchida, K., & Dong, L. (2020). External financing and earnings management: Evidence from international data. *Research in International Business and Finance*, 54, 101275. <https://doi.org/10.1016/j.ribaf.2020.101275>
- Zouari, Z., Lakhal, F., & Nekhili, M. (2012). Do CEO's characteristics affect earnings management? Evidence from France (June 11, 2012). <https://doi.org/10.2139/ssrn.2082009>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).