Impact of Corporate Governance Attributes on Earnings Management Practices – Evidence from Bangladeshi Commercial Banks

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ABSTRACT

Manuscript type: Research paper

Research aims: This study aims to determine how corporate governance characteristics affect earnings management in in Bangladeshi banks.

Design/Methodology/Approach: We adopt panel regression to evaluate the hypotheses from 493 firm-year observations. Modified Jones model is employed for investigating earnings management.

Research findings: We explore that board size significantly and negatively affects earnings management strategies.

Theoretical contribution/Originality: This study offers value by making the first-ever connection in Bangladesh between corporate governance characteristics and the earnings management of conventional and non-conventional banks.

Practitioner/Policy implication: The results shed light on improved governance policies that may be beneficial to regulators, investors, and other stakeholders. Further, it raises more concern among auditors regarding banks' uses of accruals considering their internal control systems.

Research limitation: This analysis excludes Bangladesh's fourth generation banks and concentrates only on four aspects of corporate governance. Furthermore, the political power within the bank is disregarded here, even though it has the potential to significantly affect the governance features of banks.

Keywords: Bangladesh, Corporate Governance, Discretionary Accruals, Earning Management, Private Commercial Bank

JEL Classification: M14, M41, G34

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1. Introduction

Nowadays, in the corporate world, earnings management (EM) is an ongoing conversation regarding the reliability of financial statements for decision-making, irrespective of the nature of the company. Managers become opportunistic while preparing financial statements due to the overlapping goals of fund providers and agents (Jensen & Meckling, 1976). Several motives work in the mind of managers while manipulating reported earnings, including their alluring remuneration packages (Healy, 1985), secure employment (DeFond & Park, 1997), adhering to debt restrictions, gratifying shareholder demands (Healy & Wahlen, 1999), and maintaining revenues above the estimates of analysts (Burgstahler & Eames, 2006). Even though EM takes place within the borders of accounting standards (Jiraporn et al., 2008), it produces deceptive statements (Rahman & Mohamed Ali, 2006), and figuring out the methods management uses to window-dress their reported statements is extremely costly (Schipper, 1989). Compared to other industries, banks' EM activities are more volatile (Greenawalt & Sinkey, 1988). Because of its complex form, there is a significant information gap between shareholders and management, which makes it tough for fund providers to monitor bank managers (Levine, 2003).

However, corporate governance (CG) can remedy this agency problem as it tries to ensure that managers run their companies ethically and successfully (Child & Rodrigues, 2004). Considering the circumstances of the business atmosphere, CG is a symbol of confidence that may lessen or even remove the intensity of EM (Man & Wong, 2013). Jiang, Lee, and Anandarajan (2008) and Leventis and Dimitropoulos (2012) also claim that sound CG can constrain fraud and manipulations in financial reporting. The CG mechanism differs throughout nations, especially between developed and developing economies, because of differences in corporate legislative structures. Bangladesh, an emerging economy, has a blended corporate culture that borrows from the market-based systems of the US and the UK as well as the control-based systems of Germany, Japan, and East Asia due to its inadequate legal and regulatory system, weak capital and stock markets, extremely concentrated ownership, and insufficient management incentive programs (Al Farooque et al., 2007). In Bangladesh, the first version of the Corporate Governance Guidelines (CGGs) was released in 2006 by the Bangladesh Securities and Exchange Commission (BSEC), and those were on a "comply or explain" basis. The CGGs were then amended and altered in 2012 to require compliance. Later, in 2018, the CGGs underwent

additional revisions and were reissued as the Corporate Governance Codes (CGCs), which became mandatory and effective at the start of 2019 to ensure the four pillars of CG responsibility: accountability, transparency, and fairness. Unfortunately, most Bangladeshi enterprises adhere to CG culture, which strongly emphasises shareholder control and limits the decision-making authority of institutional directors (Chaity & Islam, 2022).

There are some notable past researches concerning banks where researchers bring the CG and EM of banks under the same umbrella. These studies include (Andres & Vallelado, 2008; Cornett et al., 2009; Ahn & Choi, 2009; Leventis & Dimitropoulos, 2012; Leventis et al., 2013) in the context of developed countries like the USA and OECD countries and (Quttainah et al., 2013; Othman & Mersni, 2015; Abdelsalam et al., 2017; Kolsi & Grassa, 2017; Kumari & Pattanayak, 2017; Alam et al., 2020; Fitri & Siswantoro, 2021; Mangala & Singla, 2023) in the context of Asian countries. Past studies on Bangladeshi companies that try to link EM and CG mainly concentrated on nonfinancial firms (Muttakin et al., 2017; Debnath et al., 2019; Bishwas & Rapani, 2022; Debnath et al., 2022). So far, in the context of the Bangladeshi financial sector, we found a study by Chaity and Islam (2022) that covers only conventional banks on the mentioned issues using data sets from 2007 to 2016 and some scholars on this topic covered a small portion of Bangladeshi non-conventional banks, concentrating on Islamic banks.

So, the present work is an endeavor to see the influence of CG attributes like board size (BS), board independence (BI), board meetings (BMs), and audit committee independence (ACI) on discretionary accruals as a proxy of EM in Bangladeshi private commercial banks. This study includes 493 observations covering data for 29 private commercial banks registered on the Dhaka Stock Exchange and Chittagong Stock Exchange from 2006 to 2022. This research is an addition to Chaity and Islam's (2022) earlier work in terms of methodologies and datasets employed. Since Chaity and Islam (2022) employed the LLP model to detect EM, this is the first time that the modified Jones model has been applied in the context of an empirical study on Bangladeshi banks. Furthermore, by incorporating both conventional and nonconventional banks, we outperformed previous studies. Once again, only one variable, BI, was examined before in the study by Chaity and Islam (2022), out of the four CG characteristics we selected to evaluate from the perspective of Bangladeshi banks. Out of the four independent factors, the analysis finds that only board size is statistically

significant in the context of Bangladesh, indicating that only a bigger board size is relevant in limiting discretionary accruals, and the result also agreed with several earlier studies (Andres & Vallelado, 2008; Quttainah et al., 2013; Othman & Mersni, 2015; Alam et al., 2020) in the case of the banking industry. Considering the capital market crisis and the challenges of the banking industry in Bangladesh due to corporate ownership structures, directors' education level, poor audit quality, the neutral role of independent directors, the borrower-dominated market, weak pressure groups, and inactive shareholders (Ahmed, R.U., 2019), the results of this report should be of great importance to all stakeholders.

The article is structured this way: Part Two offers the literature review and the hypotheses development; the methodology is covered in Part Three; and the results and analysis are presented in Part Four. The final part offers the conclusions and policy recommendations based on the study's limitations and findings.

2. Literature Review and Hypothesis Development

This part provides a succinct review of appropriate prior research. Following that, relevant hypotheses are formulated.

2.1 Corporate Governance, Earnings Management, and the Development of Hypotheses

Most of the accounting research on EM is based on agency theory (Alexander, 2010). Salah (2010) supposed that positive accounting, agency, and transaction cost theories drive managers to act opportunistically for their self-interest. According to Jensen and Meckling (1976), an agency connection is a legal arrangement in which several principals hire an agent to carry out an activity on their side, granting the representative a certain amount of decision-making authority. Brennan (1995) suggests that failure to accurately anticipate an agent's behavior gives birth to agency issues that affect both the agent's and others' well-being. Additionally, EM occurs when managers decide to safeguard their priorities at the price of the company's shareholders to boost compensation, meet contractual obligations, or accomplish certain earnings targets, and this is feasible because of the split of ownership, control, and knowledge asymmetry (Usaini & Wooi Hooy, 2023). Based on their empirical research, Jiraporn, Miller, Yoon, and Kim (2008) find that firms with high agency costs are not involved in EM to a greater extent.

However, to supervise the management operation of a business entity and restrain the opportunistic behavior of the management, the shareholders invest in an information and monitoring system, which may involve hiring auditors, the audit committee, and the board of directors (Alarussi & Shamkhi, 2020). Alexander (2010) argues that governance factors should lessen earnings management based on the agency causal model. Further, Hagendorff and Keasey (2012) also comprehend the link between board features and EM that connects the agency theory. According to Leventis and Dimitropoulos (2012), CG acts as a powerful adversary for fraud in a corporate scenario where exorbitant EM exists. Jiang et al. (2008) also examined the relationship between company governance and the quality of earnings based on a brief governance measure. They concluded that improved CG is linked to higher-quality earnings and fewer discretionary accruals. Thus, executing effective CG, which sincerely upholds ethics, accountability, and transparency, is essential for boosting shareholder value.

Past empirical studies also indicate that CG acts as an effective means to control EM. Most of the pioneering studies (Xie et al., 2003; Peasnell et al., 2005; Osma & Noguer, 2007; Cornett et al., 2008; Jouber & Fakhfakh, 2011; Okougbo & Okike, 2015; Razaque et al., 2016; Waweru & Prot, 2018; Mellado & Saona, 2019; Rajeevan & Ajward, 2020) in this regard are concentrated on the non-financial industries and provided evidence that various features of CG mechanisms can constrain EM. However, there is not as much research on the financial sector as on the non-financial sector. As our study will concentrate on the financial sector, we try to highlight some noteworthy empirical research that has been done in this area. Here is evidence of several prominent studies (Andres & Vallelado, 2008; Cornett et al., 2009; Ahn & Choi, 2009; Leventis & Dimitropoulos, 2012; Leventis et al., 2013; Ugbede et al., 2013; Quttainah et al., 2013; Othman & Mersni, 2015; Abdelsalam et al., 2017; Kolsi & Grassa, 2017; Kumari & Pattanayak, 2017; Mollah et al., 2019; Alam et al., 2020; Fitri & Siswantoro, 2021; Usaini & Wooi Hooy, 2023; Mangala & Singla, 2023) that focused on bank CG practices in various countries like the USA, OECD countries, Middle East countries, the GCC region, Malaysia, Nigeria, and India. However, most of these studies are in the context of developed and other Asian countries, although some of these researchers employed a few numbers of Islamic banks from Bangladesh and Islamic banks of other countries as a part of their samples.

Bangladesh is an emergent economy where the capital market has not been stable yet, and thus, commercial banks play a significant role in fueling the economy's expansion. Therefore, the soundness of the banking industry is inevitable for the country's sustainable development. In reality, the series of corporate frauds in Bangladesh's banking sector raises the question of sustainability. On top of that, the stock market crises of 1996 and 2011 in the country suggest that the financial reports of the listed firms may not have represented the true picture of the companies. Further, the country's hybrid CG system, which combines elements of the market and control models, gives founder families, groups of families, or foreign owners significant influence over decision-making authority relative to other external board members (Al Farooque et al., 2007). However, from the empirical evidence in the case of Bangladesh, we find only one study that focuses exclusively on Bangladeshi private commercial banks, which is Chaity and Islam's (2022), despite the necessity of this sort of study, given the country's unique legal and economic conditions and immature capital market structure. In the following part of the literature review, we try to present the connotation between CG and EM for banking and other sectors. Based on that, we propose our expected hypotheses.

2.1.1 Board Size and Earnings Management

The board of directors performs a vital function in CG by ensuring the accuracy of financial reports and by curbing the managers' deceptive activities linked to agency concerns. To function as an effective control mechanism, boards need certain attributes, such as board size (BS), which significantly influences the board's operations (Zéghal et al., 2011). Adequate board members are required for the effective functioning of the board. However, in reality, it is tough to tell the efficient size of the board. Past literature provides evidence of mixed results in the financial and non-financial sectors concerning the effects of a board's size on EM.

In the case of firms, some suggest that a small board is more effective (Andres et al., 2005; Ching et al., 2006), while others favor larger boards (Xie et al., 2003; Peasnell et al., 2005; García-Meca & Sánchez-Ballesta, 2009; Chen, 2015; Yasser et al., 2017; Thu, 2024), and even some studies (Iqbal et al., 2015; Elghuweel et al., 2017) failed to establish any significant association between BS and EM. In the banking industry, Ugbede, Lizam and Kaseri (2013) concluded that fewer directors are better for coordination and communication, thus lowering the EM practices from the perspective of Malaysia and

Nigeria. Further, this view is supported by Kumari and Pattanayak (2017) regarding India. On the contrary, some studies (Andres & Vallelado, 2008; Quttainah et al., 2013; Othman & Mersni, 2015; Alam et al., 2020) support the larger boards based on their empirical results, and Usaini and Wooi (2023) failed to set any noteworthy relationship between BS and EM. Given the contradictory findings in earlier research, a more thorough analysis of the link between BS and EM practices is necessary. So, in our research, we propose the subsequent hypothesis considering that larger boards effectively obliterate management opportunities in developing countries that typically lack adequate institutional frameworks (Chen, 2015; Yasser et al., 2017; Jiang & Kim, 2020; Le et al., 2023; Thu, 2024; Shabbir et al., 2024).

H_1: A larger board size is negatively connected with EM.

2.1.2 Board Independence and Earnings Management

Board structure under the domain of CG mechanisms plays a vital part in safeguarding the reliability of the financial reporting system of a firm (Hutchinson et al., 2008). Dechow, Sloan, and Sweeney (1996) uncover that boards of directors with a predominance of management are more likely to influence earnings. In contrast, a large number of independent directors on the board enhances shareholder benefits by utilising more confrontational approaches (Cotter et al., 1997). On the contrary, Fama and Jensen (1983) suggest that, due to the expertise of senior management, insider directors who occupy an important role in a company can add value to the decision-making process. In line with the opposing theoretical premise, we also discovered that empirical research on the relationship between EM and BI fails to produce any conclusive results across the financial and non-financial sectors.

Regarding firms, some studies (Xie et al., 2003; Liu & Lu, 2007; Hutchinson et al., 2008) found an adverse association between BI and EM. In contrast, numerous studies (Osma & Noguer, 2007; Waweru & Prot's, 2008; Roy & Alfan, 2022) discovered a positive and statistically significant association. Again, several investigations (Bédard et al., 2004; Rahman & Mohamed Ali, 2006; Sarkar et al., 2008; Thu, 2024) didn't find any significant connotation between BI and EM. Multiple empirical studies concerning the financial sector (Cornett et al., 2009; Leventis & Dimitropoulos, 2012; Quttainah et al., 2013; Leventis et al., 2013; Ugbede et al., 2013; Othman & Mersni, 2015; Kolsi & Grassa, 2017; Kumari & Pattanayak, 2017) demonstrate that

there are statistically significant negative statistics between BI and EM. Conversely, Fitri and Siswantoro (2021) observed a statistically insignificant association between BI and EM in the case of Islamic banks in Asian countries, and Usaini and Wooi (2023) found the same for Nigerian banks. Therefore, the presence of independent directors has a greater positive impact on the performance of companies in economies with lax investor protection laws (La Porta et al., 2002). They also help to reduce the power distance, and increase firm performance in emerging economies (Gupta et al., 2020; Shabbir et al., 2024). Our hypothesis is:

H_2: *There is an inverse association between BI and EM.*

2.1.3 Board meetings and earnings management

The Board of Directors may convene once a month or more frequently as needed, but at least once every three months, under Bangladesh Bank guidelines. Vafeas (1999) argues that having more BMs can assist the business in managing its difficult timing, and increased transparency eventually causes EM to decline. According to Mansor, Che-Ahmad, Ahmad-Zaluki, and Osman (2013), the frequency of BMs can reduce EM since it allows directors to interact better with each other and the company's managers. Conversely, Jensen (1993) contended that the majority of BMs are ineffective and Thu (2024) found and insignificant relationship between board meeting and CSRD in case of manufacturing firm in Vietnam. Despite the contrary opinion, a number of recent research (Eluyela et al., 2018; Garcıa-Sanchez et al., 2021; Ararat et al., 2021) also support that in a weak legal context, performance is positively correlated with the frequency of board meetings. Again, Hossain and Oon (2022) suggest that more board meetings are necessary to ensure the effectiveness of monitoring and guidance in the case of less advanced organizations with fragile governance structures.

Previous empirical findings also show that BMs and EM in both banks and nonfinancial companies have inconsistent outcomes. Several studies (Xie et al., 2003; Gulzar & Zongjun, 2011; Mansor et al., 2013) argued that BMs could constrain the manager's opportunistic activities toward EM, and they found a statistically significant negative relationship between these two variables. But Bajra and Cadez (2018) found an opposite result in the case of developed countries' nonfinancial companies. In the case of the banking industry, Ugbede et al. (2013), Andres and Vallelado (2008), and Alam, Ramachandran, and Nahomy (2020) found a negative

association between BMs and EM. On the contrary, Mangala and Singla (2023), in the context of Indian commercial banks, found an insignificant relationship. Considering the previous research, we consequently proposed the following hypothesis.

H_3: *There is a negative association between the frequency of BMs and EM.*

2.1.4   Independence of the audit committee and earnings management

The Audit Committee supports the boards in ensuring that the financial statements accurately depict the state of the business and that there is an effective internal monitoring mechanism in place. The audit committee shall also consist of a minimum of three members, one of whom should be an independent director, according to BSEC CGG. Dechow et al. (1996) conclude that companies that do not have audit committees present misleading accounting reports. The executive members of the audit committee still have the incentive to influence earnings to present their expected rosy picture. In contrast, independent directors are not supposed to do this, as their compensation is not dependent on the firm's performance. Thus, they improve the integrity of financial information (Hutchinson et al., 2008). In recent studies, Shabbir et al. (2024) found in that audit committee independence has enhanced emerging economies' financial performance.

Prior research outcomes regarding the association between EM and ACI are not absolute. Various investigations (Klein, 2002; Hutchinson et al., 2008; García-Meca & Sánchez-Ballesta, 2009; Elghuweel et al., 2017; Nikulin et al., 2022) provide proof of a substantial inverse relationship between these two in the case of the non-financial industry, irrespective of countries. On the other hand, some studies (Xie et al., 2003; Peasnell et al., 2005; Rahman & Mohamed Ali, 2006; Osma & Noguer, 2007) could not identify any meaningful link between EM and ACI. Empirical results concerning banks also provide evidence of a negative relationship between these two variables. Earlier studies (Leventis et al., 2013; Ugbede et al., 2013; Othman & Mersni, 2015) found adverse outcomes and suggested that banks having effective audit governance structures apply more accounting conservatism and reduce fraudulent earnings. Based on data from a sample of Islamic banks in the GCC, Kolsi and Grassa (2017) discovered a negative relationship between audit committee meetings and DLLP in the banking industry. After thoroughly reviewing the above studies, we propose the following hypothesis.

H$_4$: *There is a negative association between ACI and EM.*

3. Methodology of the Study

3.1 Data

Currently, 62 scheduled banks in the country are completely governed and controlled by the Bangladesh Bank according to the Bangladesh Bank Order, 1972, and the Bank Company Act, 1991. These banks are categorised as state-owned commercial banks (SOCBs), specialised banks (SDBs), private commercial banks (PCBs), digital commercial banks, and foreign commercial banks (FCBs). Specialised banks were founded to achieve particular goals, such as the growth of the agricultural or industrial sectors. Again, the government owns all or most SOCBs, while FCBs function in Bangladesh as the foreign-incorporated banks' branches. So, the research doesn't cover these three types of banks alongside digital commercial banks due their diverse goals and data shortfalls. Thus, only the PCBs are covered in this study. However, in case of some PCBs data were not available for the entire study period. As a result, the data sets employed in this study covers 29 banks—22 conventional PCBs and 7 Islami Shariah-based PCBs—from 2006 to 2022. based on at least 15 years of data availability

In practice, there are four generations of banks in Bangladesh, taking into account the year of establishment: the first generation (1971-1990); the second generation (1991-2000); the third generation (2001-2012); and all banks that have been granted licenses since 2013 are referred to as fourth-generation banks. So, this study includes all the banks established from 1971 to 2012, covering the first, second, and third generations of banks, and excludes the fourth generation that starts from 2013 to the present. Accounting and CG information were manually gathered from the annual financial reports, and we used 493 firm-year observations in total.

Table 1: Population and characteristics

Types of Banks	Populations	Sample		Remarks
	No. of Banks	No. of Banks	Firm Years	
Conventional Private Commercial Banks	33	22	374	Excludes the fourth generation that starts from 2013 to the present, as they didn't meet the criteria of minimum 15 years
Islamic Shariah-based	10	7	119	
Total	43	29	493	

3.2 Control variables

Guay, Kothari, and Watts (1996) suggest that incorporating motives for EM into models of discretionary accruals can be useful when evaluating the accruals models to gauge the application of EM. This study employs bank size, bank age, leverage, and ROA as control variables to accommodate extraneous aspects contributing to earnings manipulation, as elaborated in the ensuing section.

3.2.1 Bank Size

Bank size (SIZE), which is determined by taking the natural logarithm of all assets, is one of the control parameters in this paper. Firm size is a good indicator of the market's information accessibility (Siregar & Utama, 2008). Cornett, McNutt, and Tehranian (2009) argued that larger banks are less inclined to aggressive EM. Again, Callen, Segal, and Hope (2010) argue that large firms follow greater accounting conservatism, thus facing lower operational uncertainty.

3.2.2 Age of the Bank

Stubben (2010) elucidated that firm age represents the firm's step in the business cycle. Li, Zhang, and Zhou (2006) found that firm age had no discernible impact on EM. On the other hand, Wu and Huang (2011), mentioned in Okougbo & Okike (2015), found a favorable link between firm age and EM. Loderer, Neusser, and Waelchli (2011) state that a company's age can be ascertained by its listing date or its formation date; in this case, we'll go with the bank's incorporation date.

3.2.3 Leverage

This research characterised leverage (LEV) as the ratio of total debt to total assets. Due to the capital adequacy ratio and regulatory requirements, there may be an intention to inflate the reported earnings by financially inflexible banks (Cornett et al., 2009; Leventis and Dimitropoulos, 2012). The link between leverage and EM is not very obvious. Hashim and Devi (2008) found that leverage has a significant negative relationship with EM. On the contrary, Roodposhti and Chashmi (2010) identified a significant positive relationship between these two.

3.2.4   Bank Financial Performance

Return on assets (ROA), which serves as a control factor in this article, reveals how well the bank is doing. Lee, Li, and Yue (2006) unveiled a positive relationship between discretionary accruals and firms' performance. Wu and Huang (2011), mentioned in Okougbo & Okike (2015), also found a positive association between return on assets and earnings management.

3.3   Measuring Discretionary accruals to test Earning Management

After screening the mentioned studies in the literature concerning the banks worldwide, we found that, some researchers used loan loss provision and securities gains and losses as tools for bank EM (Cornett et al., 2009; Othman & Mersni, 2015; Kumari & Pattanayak, 2017; Chaity & Islam, 2022) and others (Yasuda et al., 2004; Ahn & Choi, 2009; Leventis & Dimitropoulos, 2012; Meisel & Scott, 2013; Ugbede et al., 2013; Abaoub et al., 2013; Coskun et al., 2014; Abdelsalam et al., 2017) employed the modified Jones model (Jones, 1991). In our paper, we used the Modified Jones (1991) model, which Yasuda, Okuda, and Konishi (2004) developed for banking institutions, to account for the discretionary element of banks in Bangladesh. Like Yasuda, Okuda, and Konishi (2004), we employ both cross-sectional and time-series variations of the Jones model to estimate discretionary accruals. Again, this model complements the paper by Chaity and Islam (2022), which utilized the LLP model to detect EM in the Bangladesh context. Therefore, the regression model is:

$$\text{ACCR}_{it}/\text{TA}_{it-1} = \beta_1 (1/\text{TA}_{it-1}) + \beta_2 (\Delta\text{OI}_{it}/\text{TA}_{it-1}) + \beta_3 (\text{BPE}_{it}/\text{TA}_{it-1}) + \varepsilon_{it}$$

Where,
i = Bank holding company identifier;
t = Year (2006 to 2022);
ACCR = the total accruals estimated as the difference between net income and operating cash flows;
TA = Total Assets;
ΔOI = the change in bank's operating income between t-1 and t;
BPE = the bank's premises and equipment;
ε = error term, which is the discretionary component of total accruals.

3.4   Estimated Regression Model

After having derived the discretionary accruals as a gauge of EM, another regression is estimated. EM is the dependent variable,

and the explanatory variables are CG attributes: board size, board independence, board meetings, and audit committee independence. Also, the control variables are bank size, bank age, leverage, and ROA. So, the estimated model is:

$$DA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BM_{it} + \beta_4 ACI_{it} + \beta_5 SIZE_{it} + \beta_6 AGE_{it} + \beta_7 LEV_{it} + \beta_8 ROA_{it} + \varepsilon_{it}$$

Where:
i = Bank holding company identifier;
t = Year (2006 to 2022);
DA = Earnings Management (discretionary accruals)
BS = Board Size (number of directors on the board);
BI = Board Independence (number of independent directors divided by total directors)
BM = Board Meetings (total number of board meetings)
ACI: Audit Committee Independence (number of independent directors in the audit committee divided by total number of directors in the audit committee)
SIZE = Bank Size (natural logarithm of year-end total assets)
AGE: Bank Age (bank age since establishment)
LEV = Bank leverage (the ratio of total debt to total equity)
ROA: Bank Return on Assets (profit after tax/total assets)
e: An error term.

4. Results and analysis

4.1. Descriptive statistics

Table 2: Descriptive Statistics of Sample Variables (2006-2022)

Variable	Mean	Std. Dev.	Min	Max
DA	.004	.003	.002	.046
BS	13.728	4.067	4	27
BI	.135	.110	0	.7
BM	18.712	8.097	4	57
ACI	.303	.212	0	1
SIZE	25.668	.968	23.066	28.239
AGE	22.897	11.731	5	63
LEV	.943	.165	.066	2.183
ROA	.010	.015	-.109	.114

Where DA is discretionary accruals as a proxy of earnings management, which is the discretionary component of total accruals (residual obtained from the Jones (1991) model modified for banking institutions by Yasuda et al. (2004)); BS is board size, which represents number of directors on the board; BI is board independence, which represents number of independent directors divided by total directors; BM is board meetings, which represents total number of board meetings held during the year; ACI is audit committee independence measured by the number of independent directors in the audit committee divided by the total number of directors in the audit committee. SIZE represents bank size calculated by using natural logarithm of year-end total assets; AGE is bank age calculated by taking bank age since establishment; LEV is bank leverage calculated as the ratio of total debt to total equity; ROA is bank return on assets calculated by profit after tax divided by total assets.

Source: The annual report from all the sample banks for the period 2006 to 2022 comprises a total of 493 observations.

Table 2 depicts the statistical descriptions of the study variables, which include the mean, standard deviation, minimum, and maximum. The EM variable (DA) in this instance has a mean value of 0.004. Shen and Chih (2007) claim that higher discretionary accruals show widespread use of judgment to distort accounting earnings reports. The average DA score of 0.004 indicates that banks in Bangladesh are less inclined to exaggerate their reporting of the firm's true economic performance. Again, our mean value is almost similar to Alam et al. (2020), who also found a mean value of 0.005 for DLLP in their research for Bangladeshi banks. But this value is higher than the levels found in earlier EM research projects on financial institutions (Leventis & Dimitropoulos, 2012; Ugbede et al., 2013; Usaini & Wooi Hooy, 2023).

When it comes to CG mechanics, the average BS score is 13.728, or around 14. A BS of 14 members is good for the banks as it is within the range of 5 to 20 members prescribed by the BSEC. Again, this outcome is reliable with the research conducted by Alam et al. (2020), which discovered that the average BS of Bangladeshi banks is 14.367 using a data set spanning from 2006 to 2016. Still, this size is higher compared to other Islamic countries, as they report. Regarding BI, the mean score is 0.135, indicating that on average 13.5 percent of board members are independent directors. This outcome is quite similar to Alam et al. (2020), who report that 15.66 percent of directors are independent in the case of Bangladeshi banks. According to the CG guidelines of Bangladesh, there should be at least 20 percent independent directors, and our mean value of 13.5% indicates that this clause is not fulfilled. Hence, one of the reasons for the lower percentage of independent directors may be the emergence of compulsory CG guidelines from the year 2012, and our sample includes data from 2006. The mean value of BM is 18.712, approximately 19, which shows that most Bangladeshi banks'

boards meet more than once a month on average. Alam et al. (2020) found the average BM of 18.483 in the case of Bangladeshi banks. According to Ugbede et al. (2013), this number is much greater than that of Malaysia and Nigeria. As per the guidelines of BSEC, a bank's audit committee should have a minimum of 3 members, and at least one of those must be an independent director. So, the minimum required percentage is 33.33 percent. Here our statistic shows that on average PCBs' ACI is 30.3 percent, which does not comply with the guidelines. Again, this mean value is less than previous research by Okougbo and Okike (2015), where they report that 50% of Nigerian audit committee members are independent. According to Zahn and Tower (2004), the higher independence of the audit committee ensures lower earnings management.

4.2 Correlation

Table 3: Estimated Pearson Correlation Coefficients of sample variables (2006-2022)

	DA	BS	BI	BM	ACI	SIZE	AGE	LEV	ROA
DA	1.000								
BS	0.106*	1.000							
BI	0.181*	0.230*	1.000						
BM	0.213*	0.076	0.0301	1.000					
ACI	-0.248*	-0.051	0.737*	0.073	1.000				
SIZE	-0.377*	0.187*	0.579*	0.229*	0.5914*	1.000			
AGE	-0.083	0.009	0.218*	0.419*	0.3218*	0.382*	1.000		
LEV	0.352*	-0.259*	0.086	-0.245*	0.0236	-0.333*	0.096*	1.000	
ROA	-0.113*	0.241*	-0.150*	0.153*	-0.144*	0.031	-0.131*	-0.561*	1.000

*Significant at the 5 percent level; Source: The annual report from all the sample banks for the period 2006 to 2022 comprises a total of 493 observations.

Note: See Table 1 for the definition of variables and measurements.

Table 3 presents the correlation matrix to see whether any multicollinearity exists among the independent variables. From table 3, we can see that the correlation values are less than 0.50 except for four variables, which suggests that multicollinearity problems may exist among these variables. According to Farrar and Glauber (1967), bivariate correlation values of greater than 0.8 are indicative of detrimental multicollinearity. However, our result shows that none of the correlation values exceed 0.8. Further, to confirm the absence of

multicollinearity, the study then computed variance inflation factors (VIF) in the dataset (see Table 4). Results from the VIF statistics show that the mean VIF is only 2.03, which is well below the critical limit of 10.00 (Hair et al., 2013). Additionally, it confirms that the dataset used in this research lacks any substantial multicollinearity issues that could jeopardize the regression analysis's outcomes.

4.3. Regression results

Here, empirical research is undertaken to assess the consequences of specific CG elements on EM. We used Breusch and Pagan Lagrangian multiplier (LM) tests to determine which of the two models between a pooled OLS and a panel (random effect or fixed effect model) to use. The p-value of the test is less than 0.01, which suggests that a panel model should be used instead of pooled OLS. The Hausman test was run to further verify whether a fixed effect model or a random effect model should be used. The results of the Hausman test suggest a fixed effect should be selected for this dataset. Once more, the dataset's problems with heteroskedasticity and serial correlation were found using the modified Wald test for groupwise heteroskedasticity and the Wooldridge test for autocorrelation. As a result, an OLS model that included serial correlation corrected the standard error, and heteroscedasticity (OLSHSC) was conducted.

According to the regression results (Table 4), BS has a negative and significant coefficient (-0.000108) in the fixed effect model, which suggests that BS has a detrimental impact on EM and supports our proposed hypothesis. This result is consistent with the previous studies (Andres & Vallelado, 2008; Quttainah et al., 2013; Othman & Mersni, 2015; Alam et al., 2020) in the case of the banking sector and (Xie et al., 2003; García-Meca & Sánchez-Ballesta, 2009; Chen, 2015; Yasser et al., 2017; Jiang & Kim, 2020; Le et al., 2023; Thu, 2024; Shabbir et al., 2024) in the case of non-financial companies. We previously covered in the literature section that agency theory acts behind earning management when conflicts of interest occur between management and shareholders. Once more, the complexity of the information asymmetries problem in the bank makes it more serious and poses a governance issue (Furfine, 2001; Levine, 2003; Andres & Vallelado, 2008). According to Andres and Vallelado (2008), this governance issue also calls for a board that will allow the managers to operate freely while simultaneously monitoring their actions and providing crucial direction regarding the bank's operations. In addition to that, they also argue that a board with a large number of directors may confront significant challenges with interactions,

Table 4 Regression results based on 493 observations of PCBs of Bangladesh from 2006 to 2022

VARIABLES	Pooled OLS		OLS with hetero and serial correction (OLSHSC)		RE		FE	
	DA		DA		DA		DA	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
BS	-0.000002	-0.000039	-0.000002	-0.000054	-0.000030	-0.000043	-0.000108*	-0.000055
BI	0.000876	-0.002160	0.000876	-0.002860	0.000658	-0.002220	-0.000500	-0.002420
BM	-0.000054***	-0.000020	-0.000054***	-0.000015	-0.000048**	-0.000022	-0.000012	-0.000030
ACI	-0.002570**	-0.001030	-0.002570	-0.001580	-0.002260**	-0.001060	-0.001890	-0.001150
SIZE	-0.000743***	-0.000238	-0.000743**	-0.000324	-0.000808***	-0.000253	-0.001360***	-0.000486
AGE	0.000022	-0.000015	0.000022*	-0.000013	0.000024	-0.000018	0.000131*	-0.000077
LEV	0.005830***	-0.001210	0.005830***	-0.001280	0.005020***	-0.001250	0.002380	-0.001510
ROA	0.013700	-0.011300	0.013700	-0.011200	0.013500	-0.011200	0.015200	-0.012200
Constant	0.019100***	-0.006350	0.019100**	-0.008350	0.021700***	-0.006660	0.036500***	-0.011300
Observations	493		493		493		493	
R-squared	0.225		0.225				0.110	
Number of IDs			29		29			
Breusch-Pagan LM test (p value)			-0.0016***					
Hausman test (p value)							-0.0108**	
Multicollinearity (VIF)					2.030000			
Heteroscedasticity (p value)							0.0000***	
Serial correlation (p value)							-0.0010***	

Note: See Part 3.4 for the definition of variables and measurements.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

collaboration, and making decisions. Therefore, it confirms that a larger board is actually beneficial in enhancing company performance and decreasing managers' opportunistic behavior in emerging markets, which is consistent with earlier research (Chen, 2015; Yasser et al., 2017; Jiang & Kim, 2020; Le et al., 2023; Thu, 2024; Shabbir et al., 2024).

BI shows a statistically insignificant negative impact on EM. Thus, the negative coefficient indicates greater BI reduces EM in the context of Bangladesh. According to Man and Wong (2013), independent directors can work freely on the board as they don't have any conflicting issues or bindings like compensation or target meeting agendas. Again, to mitigate the agency problem, Quttainah, Song, and Wu (2013) suggest that a greater number of independent directors need to be selected. Our result is aligned with previous research (Alam et al., 2020; Fitri & Siswantoro, 2021; Usaini & Wooi Hooy, 2023) where a statistically insignificant link between BI and EM in the instance of the financial sector has been found. Again, a large number of past studies (Zahn & Tower, 2004; Saleh & Iskandar, 2005; Rahman & Mohamed Ali, 2006) demonstrate the statistically insignificant but negative coefficient between these two variables in the case of manufacturing companies. Further, a number of noteworthy previous studies (Leventis & Dimitropoulos, 2012; Othman & Mersni, 2015; Quttainah et al., 2013; Kolsi & Grassa, 2017; Kumari & Pattanayak, 2017) found a statistically significant inverse relationship between BI and EM in the case of the banking sector in different countries. However, like other countries, our inverse coefficient supports the expected link.

The coefficient of the variable BMs, which is quantified by the number of board meetings held during the year, is negative. However, this relationship is statistically insignificant, and the result is quite similar to Mangala and Singla (2023) in the context of India. The negative coefficient is in line with some past research (Andres & Vallelado, 2008; Ugbede et al., 2013; Alam et al., 2020) in the banking sector. In addition, studies such as Xie et al. (2003) found similar results in the case of non-financial firms.

The coefficient of ACI also demonstrates an inverse link with EM, but it is statistically insignificant. The study's statistically insignificant conclusion with a negative coefficient is quite similar to that of Fitri and Siswantoro's (2021) analysis of Islamic banks across six countries. Our negative coefficient is also aligned with some notable past studies (Ugbede et al., 2013; Leventis et al., 2013; Othman & Mersni, 2014), where they found a negative but statistically significant

relationship in the case of the financial sector and (Klein, 2002; Zahn & Tower, 2004; Peasnell et al., 2005; Hutchinson et al., 2008; García-Meca & Sánchez-Ballesta, 2009; Okougbo & Okike, 2015; Elghuweel et al., 2017) in the case of the non-financial sector.

In the case of one of the control variables, bank size (SIZE) is found to be highly significant and negatively related to DA. This is consistent with other findings (Andres & Vallelado, 2008; Alam et al., 2020) in the case of the banking sector. Zahn and Tower (2004) in the case of firms that indicate larger businesses utilize fewer discretionary accruals. However, the outcome differs from Leventis et al. (2013) and Kolsi & Grassa (2017), where an insignificant negative association has been discovered, and Usaini and Wooi (2023) found an insignificant positive association in the case of a bank between SIZE and DA.

Another control variable, bank age (AGE), is found statistically significant at a 10 percent level, with positive coefficients indicating that experienced banks are less concerned about discretionary accruals in their financial reporting. This is consistent with Wu and Huang's (2011) findings mentioned in the paper of Okougbo & Okike (2015). But it contradicts Okougbo and Okike (2015) in the case of non-financial firms, where they found an insignificant relationship.

Further, leverage (LEV) is found insignificant with a positive coefficient. The positive coefficient implies that leverage promotes EM practices. That means debt influences management to modify earnings using discretionary accruals. This positive coefficient aligns with prior research results by Alam et al. (2020) about banks and Saleh and Iskandar (2005) with non-financial firms, but their result is also statistically significant. Additionally, Zahn and Tower (2004) discovered an insignificant association like us in the banking sector.

Moreover, another control variable, ROA, is found to be insignificant. But the result is different from that of Usaini and Wooi (2023), who found a substantial relationship between ROA and EM in the case of a bank, and Hutchinson, Percy, and Erkurtoglu (2008) in the case of non-financial firms.

5.   Conclusions

This article tests the impact of CG attributes using the variables board size, BI, BM, and ACI along with some control variables like bank size, bank age, leverage, and ROA on earnings management. The study identifies that only BS is statistically significant among the four independent variables in the context of Bangladesh, suggesting that only a larger BS is relevant in constraining discretionary accruals, which is also aligned with some past studies (Andres & Vallelado,

2008; Quttainah et al., 2013; Othman & Mersni, 2015; Alam et al., 2020) in the banking sector.

On the contrary, the influence of other variables like BI, the number of BMs conducted during the year, and ACI are found to be irrelevant due to statistically insignificant results. But the coefficient of those variables supports our predicted hypotheses. Their negative coefficients infer that BI, BM, and ACI have an inverse association with EM. Ahmed, Zannat, and Ahmed (2017) also found a statistically insignificant but positive connection between CG and firm performance in Bangladesh. In the case of control variables, the study finds only bank size and age are relevant for predicting EM, but leverage and ROA failed to explain due to their statistically insignificant results in the financial industry of Bangladesh.

The significance of BS suggests that policymakers should be more concerned about BS compared to other board characteristics. Considering the large BS seems to be effective and our mean value is just 14, the bank's policymaker may raise it up to 20 within the BSEC limit. However, the lack of significance in the case of BI could be attributed to either the quality of independent directors as well as their freedom or to the mandatory compliance of ID from the year 2012, whereas our analysis dates back to 2006, when CG guidelines were imposed in Bangladesh for the first time on a voluntary basis. According to Chaity and Islam (2022), board members in Bangladesh tend to be more family-oriented and have more influence over the composition of the board and decision-making authority than institutional directors. Once more, the average percentage of BI is only 13.5 percent, and since BI and EM have an inverse correlation, a lower number of independent directors could undermine the standard of CG. So, Bangladeshi banks should nominate more independent directors on the board.

Further, given that BM and EM have an inverse connection, we can recommend that the board hold regular quality meetings to improve oversight and decision-making. Again, the reason for insignificance in the case of ACI may be related to the reason for BI, given that the mean proportion is a poor 30.3 percent. The negative coefficient indicates that the bank ought to designate additional independent directors to the audit committee and grant them autonomy in their duties. In the case of Bangladeshi listed banks, Rashid (2022) also suggests strengthening the function of independent directors on the corporate board in preserving the interests of shareholders generally. In summary, the study's conclusion is that, in the context of Bangladesh's banking industry, lawmakers ought to

pay greater attention to CG characteristics.

Our study enriches the current literature by incorporating the governance variables of banks with earning management in a country like Bangladesh, where the capital market is not so efficient along with the country's overall poor governance systems. Notwithstanding the insightful results, this study possesses some inherent limitations. Only three board characteristics and one audit committee characteristic are the subject of this investigation. Furthermore, the sample is limited to financial firms, particularly first, second, and third-generation commercial private banks, and only accrual-based earning management using the modified Jones model is measured. Moreover, the political influence on the bank is overlooked here, despite the fact that it could have a big impact on the governance characteristics of banks.

The study's limitations provide guidance for future research, such as the inclusion of extra independent variables in the case of variables, such as ownership concentration, managerial ownership, gender diversity in the board, adherence to shariah, and different committees like the executive committee, as well as the quality of independent directors and auditors along with additional control variables such as growth and capital adequacy ratio. In the case of the EM model, the discretionary loan loss provision (DLLP) model can be a better measurement for measuring banks' earning management practices. Finally, incorporating fourth-generation banks into the sample size and taking political impact on the bank's governance into account could add new insights.

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