"Corporate governance dynamics in financial institution performance: A panel data analysis"

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BUSINESS PERSPECTIVES

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CORPORATE GOVERNANCE DYNAMICS IN FINANCIAL INSTITUTION PERFORMANCE: A PANEL DATA ANALYSIS

Abstract

The study aims to identify the effect of corporate governance factors on financial institution performance in Bangladesh. This study employs annual data for 20 financial institutions, including banks, NBFIs, and insurance companies, data is collected from 2011 to 2022. Here, three corporate governance indicators are utilized – board size, board independence, and director's ownership. The performance of the financial institutions is measured using return on assets (ROA), return on equity (ROE), and net asset value (NAV). Apart from the corporate governance variables, three company-specific factors, i.e., firm age, financial leverage, and firm size, are used as the control variables. Panel data analysis is conducted through the dynamic Feasible Generalize Least Square (FGLS) method, and the robustness is performed using the random effect model. The results show that corporate governance parameter such as board size has a significant positive influence on financial institution performance in Bangladesh, where board independence and director ownership do not have a significant influence on the performance of financial institutions. Thus, the performance of financial institutions increases when board size increases. This indicates that board members are actively engaged in strategic decision-making and ensure the rights of all stakeholders, which helps improve financial institutions' overall performance. Therefore, financial institutions may increase their board size to the maximum level to ensure better corporate governance practices in the organizations, which ultimately increases performance.

Keywords	corporate governance, board size, financial institutions, performance, board independence
JEL Classification	G30, G38, L25

INTRODUCTION

Good corporate governance is crucial for a company's sustainability, image, and long-term growth. Financial institutions tend to be more volatile and in turmoil and thus require a more critical analysis of corporate governance indicators within the financial institutions than other industries. Corporate governance is widely recognized as a vital determinant of the performance and trustworthiness of financial institutions within the global financial market (Bhagat & Bolton, 2019). In the corporate governance process, corporations are legally bound to work in the stakeholder's interest. It synchronizes the interests and motives of all the business stakeholders, including managers, shareholders, directors, and employees (Demb & Neubauer, 1992). A business entity must be well-governed and controlled for its efficient operation by maintaining transparency, accountability, and predictability so that the concept of corporate governance is established (Cadbury, 2002).

To mitigate the risk and ensure sustainable growth, investors increasingly recognize the role of good corporate governance because there is a dynamic relationship between a firm's performance and corporate

governance (Anderson & Campbell, 2004). Researchers contend that ideal board size and a standard form of outsider directors upgrade straightforwardness and responsibility and increase the administration quality of a firm (Adams & Ferreira, 2007). Additionally, the alignment between the interests of investors and directors, as indicated by stock ownership, has the potential impact on the long-term value creation of a firm (Fama & Jensen, 1983).

The financial sector of Bangladesh, with its expanding economic area, presents a convincing field for exploring the connection between firms' stock performance and corporate governance practices. Regardless of the generally perceived idea that in the context of Bangladesh, there is a gap between the interests of the chief's stock possession investors and board members (Ahmed et al., 2016; Rouf, 2012; Deb et al., 2017). Although firm age is commonly used in the USA and other countries (Mester, 1996; Chen, 2012), this variable is quite uncommon in the Bangladeshi context. Stock price measures such as ROA, ROE, and NAV have been explored individually in the context of financial performance (Willim, 2015; Fiador, 2013). Thus, a comprehensive analysis of the Bangladeshi financial sector is required to identify the impact of corporate governance on its performance by utilizing ROA, ROE, and NAV as performance measures.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Corporate governance practices are continuously enhancing, driven by factors such as the global financial crisis, the rapid expansions of privatizations, and the evolution of financial institutions. Skillful management of the corporate governance process is pivotal in strengthening corporate performance. The improvement of a company's image, reducing the uncertainty of fraud, and increasing shareholders' confidence are possible by practicing good corporate governance (Jesover & Kirkpatrick, 2005). The corporate governance indicators are board size, independence of the board, board effectiveness, audit committee members, directors' ownership, and dual board leadership (Guluma, 2021; Hasan et al., 2023).

Corporate governance refers to the set of regulations and strategies governing how businesses are managed. It ensures greater accountability and transparency to shareholders. Consequently, sound corporate governance enables companies to operate more efficiently, reduce risks, provide protection against mismanagement, and ensure smooth access to capital, thereby supporting organizational growth. By facilitating improved access to capital, corporate governance creates business opportunities, enhances economic development, and fosters new investments (Yousuf & Islam, 2015). Corporate governance encompasses a range of mechanisms aimed at directing and overseeing businesses. It tackles agency conflicts arising from the separation of control and ownership (Zagorchev & Gao, 2015). Kendall and Kendall (1998) portray corporate governance as a clash between self-interested boards of directors and passive shareholders, highlighting the enduring relationship between managers and investors.

Financial institutions are business entities that deal with money and other financial assets, i.e., stocks, bonds, debentures, and derivatives. Like any other service provider or manufacturing company, financial institutions also incorporate a structure of operating business activities to perform well financially. Such financial institutions include banking and non-banking institutions, i.e., stock brokerage firms, mutual funds, insurance companies, etc. (Madura, 2015).

By regulating financial institutions, corporate governance implies a fair impact on financial performance. As the stock price reflects investors' perceptions of the company's value in the financial markets, the stock price of a company is frequently regarded as a performance indicator (Drobetz et al., 2003). It reflects the market's assessment of the company's overall health, growth potential, and current and future financial prospects.

Numerous studies have investigated the relationship between the performance of financial insti-

tutions and corporate governance. Enhanced corporate governance practices have been associated with reduced risk-taking tendencies and improved performance among U.S. financial institutions (Zagorchev & Gao, 2015). Analyzing Indian financial institutions, a compelling discovery surfaces: a robust and advantageous correlation exists between the size of the board and the firm's performance, pointing towards a positive association (Varshney et a., 2013). Conversely, random CEO turnover has a significant and negative effect on the stock prices of Japanese Banks (Anderson & Campbell, 2004).

The ownership of stocks by directors is an essential aspect of corporate governance, exerting significant influence on a company's performance. Bhagat and Bolton (2019) found that stock ownership among bank directors correlates positively with bank performance and negatively with bank risk during both financial and non-financial crises, such as those experienced in 2008. Again, the percentage of directors holding equity in the company increases the possibility of the company's future stock price crash (Andreou et al., 2016).

Similarly, board independence is a critical determinant of corporate governance, impacting firm performance. Hasan et al. (2023) demonstrated a positive association between firm performance and board independence. Conversely, Erkens et al. (2012) and Varshney et al. (2013) have identified a negative effect of higher board independence on the performance of financial organizations. In a study by Ahmed et al. (2016), no significant relationship is found between stock performance and institutional shareholding.

In the corporate sector, one of the most important factors is a firm's age, which adds one more layer to the corporate administration. The age of a firm is connected with its risk management practices and responsiveness to showcase elements; besides, established firms can explore the risks and difficulties to turn to progress (Boubakri et al., 2016). Chen (2012) examined the fact that bank age is negatively associated with company performance, while the square of bank age is positively associated with company performance. This suggests that reputation and experience contribute positively to efficiency, while organizational rigidity has detri-

mental effects. Mester (1996) introduced bank age to assess its association with vulnerability levels. The results indicate that inefficient banks in the sector tend to be younger than their more efficient counterparts.

A negative correlation of board ownership with performance is identified by Farooque et al. (2007). This suggests that higher board ownership reduces firm value. On the other hand, insider ownership is found to be able to mitigate performance risk (Andreou et al., 2016). Before the financial crisis, no correlation was observed between bank performance and CEO turnover (Anderson & Campbell, 2004). Zagorchev and Gao (2015) discovered that the performance of U.S. financial institutions has a significant and positive correlation with corporate governance and a negative correlation with excessive risk-taking.

Financial performance measurements like return on assets (ROA), net asset value (NAV), and return on equities (ROE) are vital in measuring an organization's financial well-being and performance (Willim, 2015; Fiador, 2013). In the research conducted by Cheema and Din (2013), the influence of corporate governance elements on the ROA, ROE, and EPS showed a significant and positive relation. Rouf (2012) also finds that a firm's performance has a significant and positive relation with CEO duality and independent directors. Also, this shows that a firm's performance has a negative relationship with the audit committee and board size. A study by Rostami et al. (2016) shows that board independence, CEO duality, CEO tenure, and ownership concentration have a significant correlation with return on assets. Similarly, Kumalasari and Pratikto (2018) conducted another study showing that return on assets has a significant relationship with corporate governance factors.

Contrarily, findings by Deb et al. (2017) demonstrate that within the context of their study, there is no statistically meaningful link between the board size and the firm's performance. Similarly, Eisenberg et al. (1998) found the same results. In the Ghanaian market, Net asset value per share holds significant esteem, particularly when the CEO serves as a board member, or the firm has a small board size. If there are no non-executive directors, which indicates the board's independence,

it indicates a negative impact on the market value of shares (Fiador, 2013).

The board size consists of the company's governing board members (Ahmed et al., 2016). Deb et al. (2017) explore that board size significantly correlates with a firm's performance. Cheema and Din (2013) find the same results. On the other hand, Eisenberg et al. (1998) and Willim (2015) note that board size negatively influences the firm's performance. Deb et al. (2017) identify the same results. However, Hasan et al. (2023) explore that board size has no significant relationship with a firm's performance. The research by Ahmed et al. (2016) found the same results.

A study by Hasan et al. (2023) shows that board independence is the only corporate governance factor significantly correlated with firms' performance. Rouf (2012) verified the same results. Rostami et al. (2016) and Deb et al. (2017) also found that board independence significantly correlates with ROA. Fiador (2013) found that board independence negatively influences net asset value. Erkens et al. (2012) consider that higher board independence leads to firm failure.

In a study on director ownership, Bhagat and Bolton (2019) stated in their study that director ownership is significant and positively correlated to bank performance, and a higher percentage of ownership of directors lowers the firm's risk. Andreou et al. (2016) found the opposite scenario, which showed that a higher percentage of directors' ownership raises future stock price crashes.

In addition, the total time of operation of a firm, known as firm age, is a crucial factor that affects firm performance (Chang & Chiu, 2006). Chen (2012) found a strong influence of age on firm performance, while Mester (1996) identified a positive connection between firm age and performance. However, Rossi (2016) suggested that firm age can weaken performance. Mehari and Aemiro (2013) stated that firm performance is significant and positively correlated with firm size. Hutton et al. (2009) consider that stock values are negatively related to financial leverage. Furthermore, firm size significantly influences firm performance (Ahmed et al., 2016). Thus, company-specific fac-

tors like firm age, size, and financial leverage, in addition to corporate governance factors, also impact the performance of financial institutions.

Despite extensive studies on corporate governance and firm performance, understanding these dynamics within Bangladesh's financial institutions remains limited. The majority of the research (Deb et al., 2017; Eisenberg et al., 1998; Kumalasari & Pratikto, 2018) has concentrated on broader corporate sectors, ignoring banks, NBFIs, and insurance firms in Bangladesh, which have unique regulatory and operational challenges. Key corporate governance indicators like board size, board independence, and directors' ownership have been identified, but comprehensive studies integrating these with specific performance measures, such as return on assets (ROA), return on equity (ROE), and net asset value (NAV), are lacking. Additionally, the role of firm-specific factors like financial leverage and firm size as control variables remains underexplored while examining corporate governance's impact on financial institutions' performance. Therefore, by employing a robust methodological approach and utilizing a comprehensive dataset spanning from 2011 to 2022, this study aims to identify how specific corporate governance factors influence the performance of financial institutions in the unique economic and regulatory environment of Bangladesh. The following hypotheses are made for this study:

H_1: Board size has a significant impact on the performance of financial institutions.

H_2: Board independence has a significant impact on the performance of financial institutions.

H_3: Director's ownership has a significant impact on the performance of financial institutions.

2. METHOD

Bangladesh has some major financial institutions, such as private commercial banks – 43; state-owned commercial banks – 6; specialized banks – 3; foreign commercial banks – 9; non-scheduled banks – 6; non-bank financial institutions – 43, and 83 insurance compa-

Table 1. Variable description

Serial No.	Variable Name	Variable Definition	Sources
Dependent variables (Performance Measures)			
1	Net Asset Value	Net asset value (NAV) per share reflects the equity position of each shareholder. It is defined as the total assets minus the total liabilities of the firm in the period divided by the number of shares outstanding	Fiador (2013); Willim (2015)
2	Return on Asset	The return on assets (ROA) measures how well a company utilizes its assets to generate revenue. ROA is measured by dividing the total asset by net income after taxation.	Andreou et al. (2016); Rostami et al. (2016)
3	Return on Equity	The return on equity (ROE) of a company shows how many units of net income are produced for every unit of equity and also evaluates how well a business uses its equity capital to produce profits. ROE is measured by dividing the firm's net income by its total shareholder's equity	Kumalasari & Pratikto (2018); Ahmed et al. (2017)
Independent variables (Corporate Governance Factors)			
4	Board Size	Board size represents the numerical directors existing on a board, both in terms of executive and non-executive ranks	Farooque et al. (2007); Hasan et al. (2023)
5	Board Independence	Board Independence is explained by the number of board directors who are considered independent in their thoughts and activities.	Zagorchev & Gao, (2015); Bhagat & Bolton (2019)
6	Director's Ownership	Director's ownership is gauged through the percentage of outstanding shares owned collectively by the members of the board of directors	Farooque et al. (2007); Bhagat & Bolton (2019)
Control Variables (Company Specific Factors)			
7	Firm Age	The duration of a company's operation is considered while determining a firm's age.	Chang & Chiu (2006); Chiu & Chen (2009)
8	Financial Leverage	It is defined as the ratio of total liabilities to total assets. Leverage is calculated by dividing the amount of total liabilities by total assets.	Andreou et al. (2016); Hutton et al. (2009)
9	Firm Size	Firm size is the total assets of the firm. Operational activities and areas are influenced by the size of the firm.	Mwambuli (2019)

nies (Bangladesh Bank[1], Bangladesh Securities and Exchange Commission[2]). Among these, 35 banks, 23 non-bank financial institutions, and 57 insurance companies are listed on the Dhaka Stock Exchange across three sectors (Dhaka Stock Exchange[3]), which will be included in the sample of this study. Data are collected from the sample of 20 companies, selected based on top listed and available data, across these 3 sectors for 2011–2022 based on the selected parameters of corporate governance and stock price. Only financial institutions are focused in this study because this sector involves significantly different accrual and cash flow procedures than other sectors due to certain regulations (Hasan et al., 2023). All data are collected from the company's annual reports.

Different authors (Ahmed et al., 2016; Hasan et al., 2023; Erkens et al., 2012; Mehari & Aemiro, 2013) incorporate different corporate governance variables to measure the relationship with firms' performance. Based on their research, this study considers net asset value (NAV), return on equity (ROE), and return on

asset (ROA) as performance measures. Besides, the director's ownership, board size, and board independence are considered corporate governance factors, and firm age, financial leverage and firm size are considered company-specific factors. A brief description of the variables is shown in Table 1.

The data collected for this study possess both time series and cross-sectional dimensions, reflecting changes across different units (various financial institutions) and periods (different years). Based on previous research (Sohag et al., 2015; Gao et al., 2023), the study employs a panel data regression model due to both time and unit differences. Specifically, this study utilizes the dynamic panel data analysis model, the Feasible Generalized Least Squares (FGLS) model is applied to generate reliable outcomes, according to Al-Qudah and Jaradat (2013) and Huynh (2024). The FGLS model is adept at producing unbiased results even in the presence of cross-sectional correlation issues, heteroscedasticity and autocorrelation problems (Xie et al., 2022).

Before performing the panel data analysis, the required diagnostic tests are conducted. The diagnostic tests are the Shapiro-Wilk test for normality (Hanusz & Tarasińska, 2015), utilizing the variance inflation factor (VIF) serves as a tool for pinpointing multicollinearity within the data, aiding in the identification of interdependencies among predictor variables (Shrestha, 2020), and the Breusch-Pagan test to detect heteroscedasticity (Li & Yao, 2019). Additionally, the Wooldridge test and Pesaran's CD test are applied to assess autocorrelation (Richey, 2010) and cross-sectional dependence, respectively. To rectify the normality problem in the raw data, the study employs a two-step data normalization model, following Templeton (2011). The resulting transformed data exhibit normal distribution characteristics. Below is the panel data regression equation:

$$Performance_{i,t} = \beta_0 + \beta_1 BS_{i,t} + \beta_2 BI_{i,t} \\ + \beta_3 DO_{i,t} + \beta_4 Controls_{i,t-1} + \varepsilon_{i,t}, \quad (1)$$

where performance is the dependent variable, which indicates the performance measures (e.g. ROA, ROE and NAV), β is the coefficient, t is the time, i is the unit of firm. *BI* indicates the board's independence, *BS* indicates the board size, and *DO* indicates the director's ownership, which are independent variables. Controls indicate the control variables such as firm age (FA), firm size (FS) and financial leverage (LEV), and *t-1* indicates the lag for period 1 because all company-specific variables are lagged by one year to mitigate potential endogeneity problems, according to Reed (2015).

3. RESULTS

The descriptive statistics for the chosen variables are presented in Table 2, offering a comprehensive overview of their characteristics and distributions. Data is collected from the sample of 20 companies across the financial sector for the years 2011-2022.

The mean value of ROA is 2.8%, and ROE is 58.2%, which indicates there is a substantial gap between ROA and ROE, indicating high debt inclusion in the capital structure, which is validated by the average financial leverage of 79.8%. It also specifies that firms across the financial sector in Bangladesh are facing the major risk of default. The average net asset value per share is 28.18 Taka and the average firm size is 4.785. Among the corporate governance factors, the standard deviation of all variables except firm age is quite minimal, and board independence has the lowest standard deviation.

Table 3 demonstrates the correlation between the dependent and independent variables. Among the dependent variables, ROA has a positive and strong correlation with ROE and NAV. Although the correlation between ROE and NAV is insignificant. Board size has a strong and positive correlation with firm performance in terms of ROA, which means higher board members increase the performance of the firm. Board size shows a significant negative correlation with board independence, leverage, and firm size. Firm size has a

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Performance Measures					
Return on Assets (ROA)	240	.028	.051	−.001	.409
Return on Equities (ROE)	240	.582	2.932	−.012	28.767
Net Asset Value (NAV)	240	28.184	14.409	11.21	80.52
Corporate Governance Factors					
Board Size (BS)	240	13.713	4.26	6	22
Board Independence (BI)	240	.186	.095	0	7
Director's Ownership (DO)	240	.394	.122	0	.73
Company Specific Factors					
Firm Age (FA) (months)	240	322.22	133.10	126	762
Financial Leverage (LEV)	240	.798	.234	.191	.988
Firm Size (FS)	240	4.785	.858	2.717	5.853

Notes: The table provides a detailed snapshot of the descriptive statistics encompassing all variables, drawing from data spanning the years 2011 through 2022. Here, ROA, ROE, and NAV are performance measures used as dependent variables, BS, BI, and DO are corporate governance factors used as independent variables, and FA, LEV and FS are company-specific factors used as control variables. Data are normalized by applying the two-step data normalization method inverse document frequency (IDF).

Table 3. Correlation matrix

	ROA	ROE	NAV	BS	BI	DO	FA	LEV	FS
ROA	1.000								
ROE	0.444*	1.000							
NAV	0.154*	0.076	1.000						
BS	0.407**	−0.055	−0.101	1.000					
BI	−0.253*	−0.007	0.106	−0.585*	1.000				
DO	0.128*	0.107	0.004	0.105	0.056	1.000			
FA	−0.239*	−0.299*	0.151**	−0.105	0.032	−0.198*	1.000		
LEV	−0.495***	0.303**	−0.001	−0.471*	0.264*	−0.005	−0.072	1.000	
FS	−0.666*	0.072	0.224*	−0.435*	0.283*	−0.122	0.318*	0.639*	1.000

Notes: ***, **, and * indicate the level of significance at 0.001, 0.01, and 0.05, respectively. The correlation matrix shows the relationship between the dependent and independent variables. Here, ROA, NAV, and ROE indicate the return on assets, net asset value, and return on equity. Also, BS is board size, BI is board independence, DO is director's ownership, FA is firm age, FS is firm size, and LEV is leverage.

strong negative correlation with return on assets, which indicates that larger firms are more expensive to monitor and often involve agency problems, which is aligned with Dao (2021). Leverage has a significant negative correlation with ROA, which suggests the probability that the cost of financing is not optimal and causes lesser profitability. Firm age has a significant negative correlation with ROA and ROE, implying that immature companies are more likely to make a profit. Leverage has a significantly strong positive correlation with ROE. This result aligned with Khatab et al. (2011). Firm age

and firm size have a significant positive correlation with net asset value per share.

In this study, panel data analysis is undertaken, preceded by a series of diagnostic tests to ensure the credibility and robustness of the data. Results of the diagnostic tests reveal a normal distribution of data, absence of multicollinearity as indicated by the variance inflation factor (VIF), no evidence of heteroscedasticity according to the Breusch-Pagan test, and confirmation of no autocorrelation issues by the Wooldridge test. The Feasible

Table 4. Regression results of impact of corporate governance on financial institutions' performance (feasible generalized least squares (FGLS) regression model)

Independent Variables	ROA (T-Stat)	ROE (T-Stat)	NAV (T-Stat)
Board Size (BS)	0.001*	0.008	0.159***
	(1.68)	(0.15)	(0.55)
Board Independence (BI)	−0.007	−2.283	6.495
	(−0.23)	(−1.02)	(0.56)
Director Ownership (DO)	0.017	1.429	6.311
	(0.85)	(0.98)	(0.84)
Firm Age (FA)	0.001	−0.006***	0.002***
	(−1.15)	(−3.74)	(0.32)
Financial Leverage (LEV)	−0.025***	4.062***	−16.099***
	(−1.64)	(3.76)	(−2.89)
Firm Size (FS)	−0.031***	−.0073***	6.001***
	(−7.33)	(−0.24)	(3.87)
Intercept	0.179***	−0.765***	10.013*
	(7.26)	(−0.43)	(1.10)
Chi square	212.174*	52.143***	24.738***
Number of Obs.	240	240	240

Notes: ***, **, and * represent the significant level at 0.001, 0.01, and 0.05, respectively. The table shows the results of the FGLS panel data regression model to identify the impact of corporate governance on the performance of financial institutions using annual data from 2011 to 2022 for 20 financial institutions in Bangladesh. Here, columns indicate the performance measures, and rows indicate the corporate governance factors and company-specific factors. The data are transformed using a two-step data normalization method to improve the normality of the data (Templeton, 2011). The company-specific factors are lagged by 1 year to exclude the effect of endogeneity.

Generalized Least Square (FGLS) is applied to generate bias-free results if there is any multicollinearity, heteroscedasticity, and autocorrelation problem in the data. The FGLS is performed for three regression analyses such as ROA, ROE, and NAV. The result of the regression analysis is given in Table 4.

For hypothesis H_1, overall board size has a significant positive effect on performance. The results show that the coefficients of board size have a statistically significant positive relationship with return on assets (ROA) ($\beta = 0.001$, $p < 5\%$) and net asset value (NAV) ($\beta = 0.159$, $p < 1\%$). However, board size exhibits no significant relationship with return on equity ROE ($\beta = 0.008$, $p > 5\%$).

The results corresponding to hypothesis H_2 show that board independence does not have a significant effect on performance measures. Results show that the coefficients related to board independence with ROA, ROE, and NAV are positive but not significant at the 5% level.

Similar to board size, director ownership has no significant effects on the performance of financial institutions (related to hypothesis H_3). The coef-

ficients of director ownership with performance measures ROA, ROE, and NAV are not statistically significant at the 5% level.

Moreover, the firm-specific variables (firm age, firm size, and financial leverage) have shown statistically significant effects on the performance of financial institutions. The coefficients of financial leverage and firm size are −0.025 and −0.031, which are statistically significant, with ROA at a 0.1% significance level. The coefficients of firm age and firm size are −0.006 and −0.0073, which exhibits a statistically significant negative relationship with ROE at a 0.01% significance level. Additionally, the coefficient of financial leverage is 4.062, which shows a statistically significant relationship with ROE at a 0.01% significance level. Subsequently, the coefficients of firm age, financial leverage, and firm size are 0.002, −16.099, and 6.001, respectively, with NAV, the coefficients are significant at 0.01% significance level. In general, the firm-specific factors influence on the financial institutions' performance.

The robustness of FGLS regression results has been checked by using the Random Effect Model.

Table 5. Regression results of impact of corporate governance on financial institutions' performance (random effects model regression)

Independent Variables	ROA (T-Stat)	ROE (T-Stat)	NAV (T-Stat)
Intercept	0.102***	−1.04**	7.384*
	(3.54)	(−0.48)	(1.27)
Board Size	0.002**	0.103	0.526***
	(2.06)	(1.36)	(2.99)
Board Independence	−0.046	−1.289	1.763
	(−1.53)	(−0.56)	(0.36)
Director Ownership	0.02	0.07	3.296
	(0.70)	(0.03)	(0.68)
Firm Age	−0.0001	−0.004***	0.024***
	(−0.17)	(−1.38)	(2.80)
Financial Leverage	0.005***	5.243***	−2.027***
	(0.27)	(3.73)	(−0.66)
Firm Size	−0.022***	−0.526**	1.21***
	(−3.37)	(−1.13)	(0.96)
Adj−R^2	0.431	0.353	0.370
Chi square	53.616***	26.547***	44.229***
Number of Obs.	240	240	240

Notes: ***, **, and * indicate the level of significance at 0.001, 0.01, and 0.05, respectively. The table shows the results of the Random Effect Model of panel data analysis to identify the impact of corporate governance on the performance of financial institutions using annual data from 2011 to 2022 for 20 financial institutions in Bangladesh. Here, columns indicate the performance measures, and rows indicate the corporate governance factors and company-specific factors. The data are transformed using a two-step data normalization method to improve the normality of the data (Templeton, 2011). The company-specific factors are lagged by 1 year to exclude the effect of endogeneity.

The findings of the panel random effect model show the same findings that have been identified in FGLS regression at the same significance level. To analyze the random effect model, it is explored that the analysis of FGLS regression (Table 4) is justified. Table 5 shows the regression output of the random effect model.

4. DISCUSSION

The coefficient of board size demonstrates a statistically significant and positive relationship with return on assets (ROA). This finding indicates that an increase in board size is associated with improved firm performance, measured by ROA. This result is consistent with the conclusions of Cheema and Din (2013) and Deb et al. (2017), who also reported that larger boards are linked to better performance outcomes. The positive relationship suggests that a larger board may provide more diverse perspectives and expertise, contributing to enhanced decision-making and operational efficiency. Conversely, the analysis finds that board independence, director ownership, and firm age do not exhibit statistically significant effects on ROA. This implies that these variables do not have a discernible impact on firm performance as reflected in ROA. Specifically, board independence, which is characterized by the presence of non-executive directors, does not appear to influence ROA. Similarly, the proportion of ownership held by directors does not show a significant relationship with ROA, nor does the age of a firm. These findings suggest that board independence and director ownership may not be as crucial in affecting ROA, and firm age does not significantly influence performance in this context.

Regarding return on equity (ROE), the coefficient associated with firm age shows a statistically significant and negative relationship. This indicates that as firm age, their ROE tends to decline. The result implies that older firms might face diminishing returns on equity, potentially due to factors such as increased rigidity, decreased innovation, or other age-related challenges. This finding aligns with Rossi (2016) but contrasts with Mester (1996), who found different results regarding the impact of firm age on performance. Other variables, including board independence, board size, and director ownership, do not demonstrate significant relationships with ROE, suggesting that these factors do not significantly affect ROE.

Finally, the coefficients for board size and firm age reveal significant relationships with net asset value (NAV). Specifically, board size shows a significant negative relationship with NAV, indicating that larger boards might be associated with lower NAV. Conversely, firm age has a significant positive relationship with NAV, suggesting that older firms might have higher asset values. The remaining variables do not exhibit statistically significant correlations with NAV.

In summary, the evidence highlights a mixed impact of corporate governance on the performance of financial institutions. The significant effects of board size on ROA and NAV underscore its importance, while board independence and director ownership do not show a meaningful impact on firm performance. This indicates that in the context of financial institutions in Bangladesh, board size plays a pivotal role in performance outcomes, whereas other governance factors may have less influence.

CONCLUSION

This study examines the influence of corporate governance on financial institution performance in Bangladesh using data from 20 financial institutions spanning the years 2011 to 2022. Both the feasible generalized least square (FGLS) method and the random effects model of panel data analysis exhibit that board size is the only component of corporate governance that demonstrates a statistically significant positive link with the performance of financial institutions in Bangladesh. Nevertheless, board independence and director ownership do not exhibit a statistically significant relationship with financial institution performance. This study suggests that increasing the size of the board could be a wise strategy for enhancing financial institution performance since it could help to get a greater variety of perspectives and specialties in the firm operation. However, the lack of a significant relationship between board

independence, director ownership, and performance measures raises the possibility that these aspects of corporate governance may not matter for the performance of financial institutions in Bangladesh.

The study's findings will be helpful to financial institution investors in Bangladesh because investors get specific insight into the important corporate governance factors that influence financial institution performance. Policymakers might also utilize these findings to make operational and management decisions during periods of economic uncertainty in Bangladesh. The study contributes to the existing knowledge by using comprehensive panel data analysis methodologies, challenging the conventional emphasis on board independence and directors' ownership, and emphasizing the importance of board size in maximizing financial performance.

Future studies can design upon the limitations of this research by focusing on several key areas. Firstly, future researchers can extend the sample size beyond 20 financial institutions and also extend the study period study for make the findings more generalized. Secondly, other corporate governance factors, like CEO compensation and board diversity, can be considered to get a more comprehensive understanding of the impact of these variables on financial success. Lastly, an in-depth understanding of the influence of corporate governance factors on financial institutions' performance might be obtained by employing monthly data frequency rather than annual data, which would help to capture short-term variations.

AUTHOR CONTRIBUTIONS

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