Effect of Board and Audit Committee Characteristics on Profitability: Evidence from Pharmaceutical and Chemical Industries in Bangladesh

Mohammad Tariq Hasan[1*], Mohammad Shahansha Molla[2] & Fahim Khan[3]

[1] Assistant Professor, United International University (UIU), Bangladesh *& PhD Candidate, TISSA, Universiti Utara Malaysia*
[2] PhD Candidate, School of Economics, Finance and Banking, Universiti Utara Malaysia (UUM)
[3] Undergraduate student (BBA), United International University (UIU), Bangladesh
Corresponding author: tariq2060@gmail.com
https://riiopenjournals.com/index.php/finance-economics-review

Research Article

Abstract

Purpose: The objective of this study is to investigate the relationship between corporate governance (CG) elements, namely board characteristics (board size, independence, expertise) and audit committee characteristics (audit committee size, independence, and expertise) with profitability, measured in terms of return on assets (ROA) and return on equity (ROE).

Method: This study includes data of all listed firms of the Dhaka Stock Exchange (DSE) in Bangladesh under the category of pharmaceutical and chemical industry (total 31 firms) for 3 years from 2015/16 to 2017/18. The theoretical foundation of the study is based on agency theory. It applied panel data set in the regression model Using Fixed-Effects with Driscoll and Kraay's Standard Errors to test the hypothesis. The study model also considers two control variables, viz. firm size and leverage.

Results: Empirical results of the study presents that board size, board expertise, and audit committee size have a significant positive relationship with both the measure of profitability i.e. return on assets (ROA) and return on equity (ROE). Moreover, audit committee expertise has a significant negative relationship with ROA but an insignificant relationship with ROE. However, the other variables do not have a significant influence on profitability.

Implications: This study will extend the literature of CG and profitability in an emerging economy like Bangladesh. The agency problem can be solved with the more vigilant practice of CG. This study could be extended further by considering all listed firms of DSE which may provide us more insight into CG practice in Bangladesh.

Keywords: Board characteristics, Audit committee characteristics, Profitability, Pharmaceutical, Chemical, Industry, Bangladesh

1. Introduction

Corporate governance and its impact on the company's profitability are the most discussed topics in the current literature. Corporate governance can be defined as a mechanism to control the activities of the company which will offer better transparency and accountability (Aggarwal, 2013; Cadbury, 1992). The three key elements of corporate governance are - Shareholders, Board of Directors and Management. The discussion focused on the structure of the board of directors, which is actually the main governance mechanism of the internal control system for any company or organization. Researchers studying corporate governance have used various theoretical concepts to understand the characteristics, effects, and roles of these boards. The theoretical argument of the agency is an explanation of the relationship between the shareholder and the board of directors (Aggarwal, 2013). The Board of Directors is responsible for due accountability, transparency, and diligence to manage corporate affairs and maximize shareholder wealth. It is generally believed that there is a direct and clear link between the behavior of the board and the success of the organization, measured by factors such as profitability, stock price, and reputation.

Corporate governance affects profitability and the sustainability of the organization which becomes a critical problem after the collapse of large companies in the Europe and United States (Aggarwal, 2013). In Bangladesh, it is a fact that highly respected companies fail due to bad corporate governance. Previous studies mainly focus on the issue of corporate governance practice and its effects in the context of the developed economy (Pervin & Rashid, 2019). However, from the developing country perspective, including Bangladesh still, there is a dearth of knowledge (Hasan & Rahman, 2017; Rashid, 2009). Moreover, Bangladesh Securities and Exchange Commission (BSEC) has revised corporate governance guidelines in 2012 and updated in recent times which is expected to enhance corporate governance practices within the organization (BSEC, 2012; Pervin & Rashid, 2019). Against this backdrop, the present study sets out its objective to analyze the impacts of corporate governance on the profitability of the pharmaceutical and chemical industries. This study is expected to contribute to the literature in different ways: First, the study focuses on pharmaceutical and chemical industries in Bangladesh which have the second-highest contribution in GDP (Alam, 2019). Second, the study considers the two most important elements of corporate governance i.e. Board characteristics and Audit committee characteristics, that will provide additional insights regarding CG. Third, the context of the study is Bangladesh, which is regarded as an emerging economy, moving to middle-income countries from the list of LDC's ("World Bank Press Release," July 01, 2015). The findings of the study may be a yardstick for the rest of the developing countries. Finally, this study may help the regulator to improve the corporate governance code and, more importantly, it may serve as a reference for the shareholders of organizations to designate people for the key positions of the management.

2. Literature Review and Hypotheses Development

Corporate governance is a system of management and regulation of a firm. Here, the board of directors is responsible for the management of the company. The role of shareholders is to

appoint directors and auditors, so as to endure an adequate and satisfactory governance structure. In addition, corporate governance aims to support entrepreneurial, effective, and prudent management that can guarantee the long-term success of the company. Agency theory suggests that management behavior is opportunistic, that means they act for their own interest rather than principal interest, which can be restrained by offering better corporate governance practices otherwise it could be detrimental to the economic welfare of the principals (Deegan, 2014; Hasan & Rahman, 2019; Jensen & Meckling, 1976). Literature suggests that Board composition and audit committee characteristics are the main two components of corporate governance (Brown & Caylor, 2004). Board composition refers to the size of the board, the expertise of the board members, board independence or CEO duality (Aggarwal, 2013) and the audit committee characteristics comprise committee size, independence and/or expertise. Previous studies, investigate the relationship between board characteristics and profitability as well as audit committee characteristics and profitability (Alshetwi, 2017; Chemweno, 2016; Johl, Kaur, & Cooper, 2015; Oroud, 2019). However, the outcomes of those studies are not conclusive.

2.1 Board Size and Profitability

It is argued in literature that the size of board has influence on the firm's performance, i.e. the larger board of directors, the more experienced and knowledgeable people will be available which will lead to more careful learning, decision-making process and ultimately better firm performance (Alabdullah, Yahya, Nor, & Majeed, 2016; Anderson, Mansi, & Reeb, 2004). Earlier literature documented that the large board in good for better management and positively associated with profitability (Alabdullah et al., 2016; Anderson et al., 2004; Arora, 2012; Johl et al., 2015). However, few studies suggest that the smaller size of the board is good for management and able to increase the profitability of the firm, i.e. firm size has an inverse relationship with profitability (Chatterjee, 2011; Switzer & Tang, 2009; Yermack, 1996). Based on the above discussion, this study hypothesizes that,

H_1: *Board size has a significant positive association with the profitability of the firm.*

2.2 Board Independence and Profitability

Board comprises both affiliate and non-affiliated members of the company, who are responsible for the policy of the firm and supervise the activities of top management. It is preferable for investors to have a higher number of non-affiliated members on the board (Muniandy & Hillier, 2015). Investors believe that it will help to curtail the undue influence of the affiliated board members, which may minimize the agency cost and ensure better financial performance of the firm (Muniandy & Hillier, 2015). Literature suggests that board independence has a positive relationship with profitability, i.e. the higher number of independent members in the board will increase the profitability of the firm (Jackling & Johl, 2009; Switzer & Tang, 2009). However, few studies documented negative or no relationship between board independence and profitability (Alabdullah et al., 2016; Chatterjee, 2011; Johl et al., 2015). Accordingly, this study assumes that,

H_2: *Board independence has a significant positive relationship with profitability.*

2.3 Board Expertise and Profitability

Board expertise refers to the presence of financial or accounting experts in the board. It is argued that the presence of experts in the board reduces the likelihood of a wrong decision or increases the possibility of taking prudent decisions. The appropriate mix of the board member in terms of expertise and knowledge is required to cope up with a complex business environment (Johl et al., 2015). Earlier studies described that there is a positive relationship between board expertise and profitability (Johl et al., 2015; Kor & Sundaramurthy, 2009; Wan Yusoff & Armstrong, 2012). However, a few studies also documented a negative relationship between board expertise and profitability (Van Ness, Miesing, & Kang, 2010). Based on the inconclusive findings in the literature on accounting/financial expertise of board members, this study intends to further address this issue in the context of Bangladesh, with the following hypothesis:

> H_3: There is a significant positive relationship between board expertise and profitability.

2.4 Audit Committee Size and Profitability

The audit committee is an important element of the internal corporate governance mechanism, which ensures transparency and accountability within the organization. It is argued that the agency problem can be reduced by the effective role of the audit committee (Detthamrong, Chancharat, & Vithessonthi, 2017; Dharwadkar, George, & Brandes, 2000; Kipkoech & Rono, 2016). Earlier studies documented that the size of the audit committee has a significant impact on firms' performance in terms of profitability (Aldamen, Duncan, Kelly, McNamara, & Nagel, 2012; Detthamrong et al., 2017). It is perceived that the audit committee size has a positive relationship with firm performance (Kyereboah-Coleman & Biekpe, 2007). Accordingly, the study hypothesizes that,

> H_4: There is a significant positive relationship between audit committee size and profitability

2.5 Audit Committee Independence and Profitability

The audit committee comprises both independent and non-independent members, which ensures better management through transparency and accountability in the operation. Literature suggests that the presence of outside directors in the audit committee may reduce the opportunistic behavior of the manager and reduce the agency cost (Bouaine & Hrichi, 2019; De Vlaminck & Sarens, 2015; Sultana, Singh, & Van der Zahn, 2015). It means the independence of the audit committee has a positive association with profitability (Dinu & Nedelcu, 2015; Kallamu & Saat, 2015). However, a few studies also documented no relationship between audit committee independence and profitability (Oroud, 2019). Based on the above discussion, the study hypothesizes that,

> H_5: There is a significant positive relationship between audit committee independence and profitability.

2.6 Audit Committee Expertise and Profitability

The primary role of the audit committee requires the skilled capability of its members for effective monitoring which leads to better management and transparency in financial reporting. As it requires the members to have financial or accounting expertise, previous literature

suggests that the presence of an expert member in the audit committee offers better management and financial reporting quality (Glover-Akpey & Azembila, 2016; Oroud, 2019). Thus, an audit committee with at least one member with expertise in finance and accounting is likely to increase the relevance of earnings (Qin, 2007). It is also being observed that audit committee expertise has a positive association with firm performance (Amer, Ragab, & Shehata, 2014; DeZoort, 1998; Saseela & Thirunavukkarasu, 2018). However, few studies documented an inverse relationship or an insignificant relationship between audit committee expertise and profitability (Amer et al., 2014; Glover-Akpey & Azembila, 2016). Accordingly, this study hypothesizes that,

> *H_6: There is a significant positive relationship between audit committee expertise and profitability*

3. Methodology and Definition of Variables

3.1 Sample Selection

This study is conducted on all 31 pharmaceutical and Chemical companies listed in the Dhaka Stock Exchange (DSE) under the category of pharmaceutical and chemical sector, which comprises 15.4% share of the market capitalization of DSE (Alam, 2019). This study covers 3 years of data from 2015/16 to 2017/18 as all companies have to set their accounting year from July-June, by 2015/16 as per the directive of Bangladesh Securities Exchange Commission (BSEC, 2016). Accordingly, 31*3=93 firm years observations are considered for the study. All of the relevant information and data are collected from published annual reports of the companies.

3.2 Research Model and Variable definition

To investigate the impact of board characteristics and audit committee characteristics on firm's profitability, this study like previous studies, applied ROA and ROE as the proxies of financial performance (Amer et al., 2014; Ghalib, 2018; Iqbal & Kakakhel, 2016; Oroud, 2019), which are tested against corporate governance elements. The theoretical framework of the study is given below:
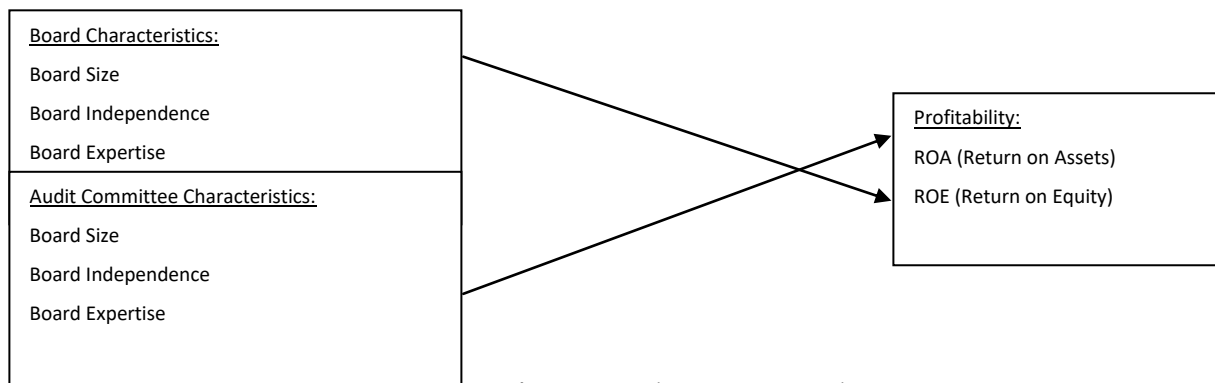
Fig. 1: Study Framework

There is a total of six independent variables that are applied in the research model, namely board size (BSZ), board independence (BIN), board expertise (BEX), audit committee size (ACSZ), audit committee independence (ACID) and audit committee expertise (ACEX). Besides,

this study applies two control variables in line with the previous literature, viz. firm size (FSZ) and Leverage (LVG) (Bronson, Carcello, Hollingsworth, & Neal, 2009; Klein, 2002; Sharma, Naiker, & Lee, 2009). This study applied panel data set in the regression model Using Fixed-Effects with Driscoll and Kraay's Standard Errors to test the hypotheses and the relationship between the dependent and explanatory variables. Statistical analysis is conducted by using STATA 13 software, which is widely used for panel data analysis. The specification of the research model is given below:

$$ROA_{it} = \beta_0 + \beta_1 BDSZ_{it} + \beta_2 BDIND_{it} + \beta_3 BDEX_{it} + \beta_4 ACSZ_{it} + \beta_5 ACEX_{it} + \beta_6 ACIND_{it} + \beta_7 FSZ_{it} + \beta_8 LEV_{it} + \varepsilon_{it} \tag{1}$$

$$ROE_{it} = \beta_0 + \beta_1 BDSZ_{it} + \beta_2 BDIND_{it} + \beta_3 BDEX_{it} + \beta_4 ACSZ_{it} + \beta_5 ACEX_{it} + \beta_6 ACIND_{it} + \beta_7 FSZ_{it} + \beta_8 LEV_{it} + \varepsilon_{it} \tag{2}$$

Table 1: Variable definition and measurement

Name of Variable	Symbol	Explanation
Return on Assets	ROA	Operating income divided by Total Assets
Return on Equity	ROE	Net income divided by shareholders' equity
Size of the board	BDSZ	Number of directors present in the board
Independence of the board	BDIND	The proportion of independent directors who are members of the board
Competence of the board	BDEX	The proportion of finance/accounting experts who are members of the board
Size of the audit committee	ACSZ	Number of members in audit committee
Competence of the audit committee	ACEX	The proportion of finance/accounting experts who are members of the audit committee
Independence of the audit committee	ACIND	The proportion of independent directors who are members of the audit committee
Firm Size	FSZ	Logarithm of total assets
Leverage	LEV	Firm leverage for firm i at time t

4. Findings and Analysis

4.1 Descriptive analysis

All data of the study are taken from the annual report of the company from 2015/16 to 2017/18. This study considers two proxy of profitability namely ROA and ROE along with six corporate governance elements in two categories and two control variables. Table 2 represents the descriptive results of the study variables. Study shows that the mean value of ROA in the pharmaceutical and chemical industries of Bangladesh is 0.08 with standard deviation 0.097 where the minimum value is 0.001 and the maximum value is 0.403, which is similar to the findings of Pervin and Rashid (2019) in Bangladesh and Johl et al. (2015) in Malaysia. In the case of ROE mean value is 0.178, range from 0.002 to 1.101 with a standard deviation of 0.229. It shows that the standard deviation is high in the case of ROE compare to ROA, which means

that few firms are highly debt-financed compared to others. Board characteristics is presented by board size which mean value is 7.075 range from 5 to 11 members, board independence with mean value of 0.268 range from 0.167 to 0.60 and board expertise with mean value of 0.071 range from 0 to 0.333 which are similar to the study of Pervin and Rashid (2019) in Bangladesh, Alshetwi (2017) in Saudi Arabia.

Table 2: Descriptive statistics

Variables	Mean	Std. Deviation	Minimum	Maximum
ROA	0.080	0.097	0.001	0.403
ROE	0.178	0.229	0.002	1.101
BDSZ	7.075	1.895	5	11
BDIND	0.268	0.105	0.167	0.600
BDEX	0.071	0.068	0	0.333
ACSZ	3.935	0.953	3	7
ACIND	0.394	0.152	0.200	0.667
ACEX	0.135	0.130	0	0.333
FSZ	9.725	0.727	8.317	11.089
LEV	0.133	0.091	0.001	0.354

Moreover, audit committee characteristics is presented by audit committee size which mean value is 3.935 with maximum 7 and minimum 3 members, audit committee independence with mean value of 0.394 range from 0.20 to 0.667 and audit committee expertise with mean value of 0.135 range from 0 to 0.333 which are similar to the study of Dinu and Nedelcu (2015) in Romania and Oroud (2019) in Jordan. Besides two control variables are the firm size with the mean value of 9.725 range from 8.317 to 11.089 and leverage with the mean value of 0.133 range from 0.001 to 0.354 as like previous studies (Amer et al., 2014; Pervin & Rashid, 2019).

4.2 Correlation Matrix and VIF

The correlation matrix shows the relationship between two variables, this relationship can be categorized into three parts which are low (0.10-0.29), medium (0.30-0.49) and high (0.50-0.99) correlation (Pallant, 2011). This study presents the correlation matrix in table 3 which represents the correlation between ROA and ROE with other study variables. From table 2, this study documented the highest correlation between ACEX and BDEX which is 60.01%, significant at 1% level. Where the lowest correlation exists between ACIND and ROA, i.e. 2.39% and insignificant. Most of the variables in this study have a medium level of correlation. It is mentioned that there is no correlation between variables which is higher than 90% as a sign of no multi-collinearity. In addition to the correlation matrix, this study also considers VIF and tolerance value to examine the issue of multicollinearity, present in table 4 (Hamilton, 2012). For both models, VIF values of all study variables are below 3 where tolerance value is more than 0.10. Literature suggests that VIF value below should be 10 and in correspondence to the VIF value, tolerance value should be 0.10 (Allison, 2012; Burns & Bush, 2005; Hair, Black, Babin, Anderson, & Tatham, 2006). It means that there is no multicollinearity issue in the study model.

Table 3: Correlation Matrix

Variables	ROA	ROE	BDSZ	BDIND	BDEX	ACSZ	ACIND	ACEX	FSZ	LEV
ROA	1.000	-								
ROE	-	1.000								
BDSZ	0.2129**	0.2124	1.000							
BDIND	0.1264	0.1843	-0.3066*	1.000						
BDEX	0.4343*	0.4215	0.3355*	-0.1732***	1.000					
ACSZ	0.5565*	0.5694	0.1411	0.2318**	0.3168*	1.000				
ACIND	0.0239	0.1006	0.0667	0.3765*	0.0367	-0.2593**	1.000			
ACEX	0.1092	0.1584	0.4442*	-0.1846***	0.6001*	0.1225	0.1180	1.000		
FSZ	-0.1195	-0.1318	0.3183*	-0.1826***	0.0780	-0.0842	0.2114**	0.5079**	1.000	
LEV	0.2490**	0.2243	-0.4227*	0.2616**	-0.2369**	0.2660*	0.1803***	-0.3678*	-0.2579**	1.00
Significant at *1%, **5%, ***10% level of significance										
ROA-Return on assets; BDSZ-Board size; BDIND-Board independence; BDEX-Board expertise; ACSZ-Audit committee size; ACIND-Audit committee independence; ACEX-Audit committee expertise; FSZ-Firm size in terms of total assets; LEV-Leverage refers to total debt/total assets.										

Table 4: VIF and Tolerance value

Name of Variable	Model 1 (ROA as DV)		Model 1 (ROE as DV)	
	VIF	Tolerance value	VIF	Tolerance value
BDSZ	2.08	0.481	1.91	0.522
BDIND	2.47	0.404	2.18	0.459
BDEX	2.73	0.365	2.26	0.443
ACSZ	2.65	0.377	2.57	0.389
ACIND	2.43	0.411	2.42	0.413
ACEX	2.49	0.400	2.49	0.402
FSZ	2.19	0.455	1.72	0.580
LEV	2.13	0.469	2.13	0.469
Mean VIF	2.33	-	2.21	-

4.3 Test for autocorrelation and Heteroskedasticity

This study also applied Wooldridge test and Breusch-Pagan test to clarify the issue of autocorrelation and heteroskedasticity in the data set. The result of both tests is presented in table 5, where the study documented that data used for the study has heteroskedasticity and autocorrelation issues, as both test results are significant at 1% level.

Table: 5 Test of autocorrelation and heteroskedasticity

Wooldridge test for autocorrelation in panel data	Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity
H0: no first-order autocorrelation	H0: Constant variance
F (1, 30) = 22.895	Chi2 (1) = 25.20
Prob > F = 0.0000	Prob > Chi2 = 0.0000

Therefore, this study corrected the three issues by employing Driscoll and Kraay's standard errors based on Hoechle (2007) which is robust to heteroskedasticity and autocorrelation. The

adjusted Driscoll and Kraay's standard errors by Hoechle (2007) is a nonparametric covariance matrix estimates the fixed-effect model and valid for balanced and unbalanced panel data.

4.4 Regression analysis

Two elements of corporate governance, board characteristics (board size, independence, and expertise) and audit committee characteristics (audit committee size, independence, and expertise) have regressed against two proxy of profitability namely ROA and ROE by model 1 and 2 respectively. Table 6 presents the adjusted R2 value for both models which are 0.483 and 0.487 respectively, significant at 1% level.

Table: 6: Result of regression model Using Fixed-Effects with Driscoll and Kraay's Standard Errors

$ROA_{it} = \beta_0 + \beta_1 BDSZ_{it} + \beta_2 BDIND_{it} + \beta_3 BDEX_{it} + \beta_4 ACSZ_{it} + \beta_5 ACEX_{it} + \beta_6 ACIND_{it} + \beta_7 FSZ_{it} + \beta_8 LEV_{it} + \varepsilon_{it}$ (1)

$ROE_{it} = \beta_0 + \beta_1 BDSZ_{it} + \beta_2 BDIND_{it} + \beta_3 BDEX_{it} + \beta_4 ACSZ_{it} + \beta_5 ACEX_{it} + \beta_6 ACIND_{it} + \beta_7 FSZ_{it} + \beta_8 LEV_{it} + \varepsilon_{it}$ (2)

VARIABLES	Expected Sign	(Model 1_ROA as DV)	(Model 2_ROE as DV)
BDSZ	+	**0.0131***	**0.0226***
		(0.00350)	(0.00779)
BDIND	+	0.0872	0.110
		(0.0602)	(0.130)
BDEX	+	**0.620***	**0.978***
		(0.0236)	(0.0372)
ACSZ	+	**0.0310***	**0.104***
		(0.00367)	(0.00880)
ACIND	+	0.00665	0.265
		(0.0385)	(0.191)
ACEX	+	**-0.122***	-0.0484
		(0.0203)	(0.107)
FSZ		-0.00507	**-0.0471**
		(0.00544)	(0.0201)
LEV		**0.300***	**0.410***
		(0.0723)	(0.128)
Constant		-0.179***	-0.184
		(0.0567)	(0.138)
R-squared		**0.483**	**0.487**
Observations		93	93
No. of Company		31	31
Prob > F		**0.0000**	**0.0000**
Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$			
ROA-Return on assets; ROE-Return on equity; BDSZ-Board size; BDIND-Board independence; BDEX-Board expertise; ACSZ-Audit committee size; ACIND-Audit committee independence; ACEX-Audit committee expertise; FSZ-Firm size in terms of total assets; LEV-Leverage refers to total debt/total assets.			

The first model considering ROA as a dependent variable reveals that four out of six independent variables are significant at 1% level which are board size, board expertise, audit committee size, and audit committee expertise. However, audit committee expertise has a significant negative association with ROA at 1% level which is not supported by the hypothesis. A similar result is documented by Bouaine and Hrichi (2019), Cheah, Kuan, Chew, Low, and Poon (2016) and Glover-Akpey and Azembila (2016). Other three variables are supported by the hypothesis i.e. board size, board expertise and audit committee size (Amer et al., 2014; Iqbal & Kakakhel, 2016; Johl et al., 2015; Shukeri, Shin, & Shaari, 2012) have a significant positive relationship with ROA as like previous literature. However, board independence and audit committee independence do not have a significant relationship with ROA (Alshetwi, 2017). The Second model considering ROE as a dependent variable that documented that board size, board expertise and audit committee size (Oroud, 2019), all three have a significant positive relationship with ROE at 1% level. However, board independence, audit committee independence and audit committee expertise (Oroud, 2019) does not have a significant relationship with ROE. Besides, two control variables are used in both model, it shows that leverage has a significant positive relationship with both proxy (ROA and ROE) of profitability as in earlier studies (Alshetwi, 2017). However, firm size has a significant negative relationship with ROE only.

5. Conclusion

The analysis of this study shows that all corporate governance mechanism related to the board and audit committee does not have a significant influence on a firm's profitability in the pharmaceutical and chemical industries of Bangladesh. Rather, there are few variables of board and audit committee characteristics which have direct influences on the firm's profitability. The multiple regression analysis reveals that board size, board expertise, and audit committee size, have significant positive relationships with both the proxies of profitability i.e. ROA and ROE. However, audit committee expertise and ROA have a significant negative relationship where audit committee expertise and ROE have insignificant relation. Besides, board independence and audit committee independence do not have significant relationships with any of the proxy variables. This study may further be extended for all listed firms in DSE which will reveal the overall picture of corporate governance practices and its importance in an emerging economy, like Bangladesh.

Conflicts of Interest: The authors declare no conflict of interest.

Authors' contribution: Mohammad Tariq Hasan and Mohammad Shahansha Molla conceived the idea, Fahim Khan and Mohammad Tariq Hasan collected and analyzed the data; Mohammad Tariq Hasan and Mohammad Shahansha Molla wrote the paper.

REFERENCES

Aggarwal, P. (2013). Impact of corporate governance on corporate financial performance. *IOSR Journal of Business and Management*, *13*(3), 1-5.

Alabdullah, T. T. Y., Yahya, S., Nor, M. I., & Majeed, F. Q. (2016). An investigation of corporate governance from a new perspective: Examining the financial performance of companies and the impact of executive turnover. *Corporate Board: Role, Duties & Composition, 12*(1), 53-67.

Alam, M. Z. (2019). Bangladesh Pharmaceuticals Industry and Global Prospect. *The cost and management, XLVII*(01), 67-69.

Aldamen, H., Duncan, K., Kelly, S., McNamara, R., & Nagel, S. (2012). Audit committee characteristics and firm performance during the global financial crisis. *Accounting & Finance, 52*(4), 971-1000.

Allison, P. (2012). When Can You Safely Ignore Multicollinearity? Retrieved April 25, 2019, from https://statisticalhorizons.com/multicollinearity

Alshetwi, M. (2017). The association between board size, independence and firm performance: Evidence from Saudi Arabia. *Global Journal of Management And Business Research, 17*(1), 17-28.

Amer, M., Ragab, A. A., & Shehata, S. E. (2014). *Audit committee characteristics and firm performance: Evidence from Egyptian listed companies.* Paper presented at the Proceedings of 6th Annual American Business Research Conference.

Anderson, R. C., Mansi, S. A., & Reeb, D. M. (2004). Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics, 37*(3), 315-342.

Arora, A. (2012). Corporate governance and firm performance in Indian pharmaceutical sector. *Arora. A.(2012),'Corporate Governance and Firm Performance of Indian Pharmaceutical Sector', Asian Profile, 40*(6), 537-550.

Bouaine, W., & Hrichi, Y. (2019). Impact of Audit Committee Adoption and its Characteristics on Financial Performance: Evidence from 100 French Companies. *Accounting and Finance Research, 8*(1), 92-102.

Bronson, S. N., Carcello, J. V., Hollingsworth, C. W., & Neal, T. L. (2009). Are fully independent audit committees really necessary? *Journal of accounting and public policy, 28*(4), 265-280.

Brown, L. D., & Caylor, M. L. (2004). Corporate governance and firm performance. *Available at SSRN 586423*.

BSEC. (2012). Corporate Governance Guidelines For Bangladesh (Vol. SEC/CMRRCD/2006-158/134/Admin/44). Bangladesh: Bangladesh Securities and Exchange Commission.

BSEC. (2016). Directive (Vol. SEC/SRMIC/2011/1240/445): Bangladesh Securities Exchange Commission

Burns, A., & Bush, R. (2005). Marketing Research: online research applications. Person: Prentice-Hall.

Cadbury, A. (1992). Report of the committee on the financial aspects of corporate governance (Vol. 1). London: Gee and Co. Ltd.

Chatterjee, S. D. (2011). Board composition and performance in Indian firms: a comparative analysis empirical. *The International Journal of Management Science and Information Technology (IJMSIT)*(2-(Oct-Dec)), 1-15.

Cheah, S. S., Kuan, T. C., Chew, S. C., Low, X. Y., & Poon, Z. H. (2016). *Audit Committee Characteristics and Firm Performance of Public Listed Companies in Malaysia.* (Bachelor of Commerce (Hons.) Accounting), Universiti Tunku Abdul Rahman.

Chemweno, E. C. (2016). *Board characteristics and firm performance: evidence from Kenya.* (Masters, Business Administration), Strathmore University.

De Vlaminck, N., & Sarens, G. (2015). The relationship between audit committee characteristics and financial statement quality: evidence from Belgium. *Journal of Management & Governance, 19*(1), 145-166.

Deegan, C. (2014). *Financial Accounting Theory* (4 ed.): McGraw-Hill Education (Australia) Pty Ltd.

Detthamrong, U., Chancharat, N., & Vithessonthi, C. (2017). Corporate governance, capital structure and firm performance: evidence from Thailand. *Research in International Business and Finance, 42*, 689-709.

DeZoort, F. T. (1998). An analysis of experience effects on audit committee members' oversight judgments. *Accounting, Organizations and Society, 23*(1), 1-21.

Dharwadkar, B., George, G., & Brandes, P. (2000). Privatization in emerging economies: An agency theory perspective. *Academy of management review, 25*(3), 650-669.

Dinu, V., & Nedelcu, M. (2015). The Relationship between the Audit Committee and the Financial Performance, the Asset Quality and the Solvency of Banks in Romania. *Transformations in Business & Economics, 14*(2), 35.

Ghalib, S. (2018). Good Corporate Governance Rating and Bank Profitability in Indonesia: Evidence from Panel Data. *International Journal of Business & Society, 19*(3).

Glover-Akpey, I., & Azembila, A. B. (2016). The effect of audit committees on the performance of firms listed on the Ghana Stock Exchange. *OSR Journal of Business and Management (IOSR-JBM), 18*(11), 55-62.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis (Vol. 6): Pearson Prentice Hall Upper Saddle River. *NJ.*

Hamilton, L. C. (2012). *Statistics with Stata: version 12*: Cengage Learning.

Hasan, M. T., & Rahman, A. A. (2017). IFRS adoption and Earnings Management: A Review and Justification of Earnings Management Model for Developing Countries. *Elk Asia Pacific Journal of Finance and Risk Management, 8*(3), 43-60. doi: 10.16962/EAPJFRM/issn.

Hasan, M. T., & Rahman, A. A. (2019). Conceptual Framework for IFRS Adoption, Audit Quality and Earnings Management: The Case of Bangladesh. *International Business and Accounting Research Journal, 3*(1), 58-66.

Hoechle, D. (2007). Robust standard errors for panel regressions with cross-sectional dependence. *The Stata Journal, 7*(3), 281-312.

Iqbal, K., & Kakakhel, S. J. (2016). Corporate Governance and its Impact on Profitability of the Pharmaceutical Industry in Pakistan. *Journal of Managerial Sciences, 10*(1), 74.

Jackling, B., & Johl, S. (2009). Board structure and firm performance: Evidence from India's top companies. *Corporate Governance: An International Review, 17*(4), 492-509.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of financial economics, 3*(4), 305-360.

Johl, S. K., Kaur, S., & Cooper, B. J. (2015). Board characteristics and firm performance: Evidence from Malaysian public listed firms. *Journal of Economics, Business, and Management, 3*(2), 239-243.

Kallamu, B. S., & Saat, N. A. M. (2015). Audit committee attributes and firm performance: evidence from Malaysian finance companies. *Asian review of accounting, 23*(3), 206-231.

Kipkoech, S. R., & Rono, L. (2016). Audit committee size, experience, and firm financial performance. Evidence Nairobi Securities Exchange, Kenya. *management, 7*(15), 87-95.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics, 33*(3), 375-400.

Kor, Y. Y., & Sundaramurthy, C. (2009). Experience-based human capital and social capital of outside directors. *Journal of Management, 35*(4), 981-1006.

Kyereboah-Coleman, A., & Biekpe, N. (2007). On the determinants of board size and its composition: additional evidence from Ghana. *Journal of Accounting & Organizational Change, 3*(1), 68-77.

Muniandy, B., & Hillier, J. (2015). Board independence, investment opportunity set, and performance of South African firms. *Pacific-Basin Finance Journal, 35*, 108-124.

Oroud, Y. (2019). The Effect of Audit Committee Characteristics on the Profitability: Panel Data Evidence. *International Journal of Economics and Finance, 11*(4), 104-113.

Pallant, J. (2011). Survival manual. *A step by step guide to data analysis using SPSS*.

Pervin, R., & Rashid, M. M. (2019). Board Characteristics and Firm Performance: Evidence from Listed Banking Institutions of Bangladesh. *The cost and management, XLVII*(01), 3-10.

Qin, B. (2007). The Influence of Audit Committee Financial Expertise on Earnings Quality: US Evidence. *ICFAI Journal of Audit Practice, 4*(3), 7-28.

Rashid, M. (2009). Corporate governance in developing countries: a case study of Bangladesh.

Saseela, B., & Thirunavukkarasu, V. (2018). Impact of Audit Committee on Organizational Performance of Listed Hotels and Travels in Sri Lanka. *International Journal of Accounting and Financial Reporting, 8*(4), 352-369.

Sharma, V., Naiker, V., & Lee, B. (2009). Determinants of audit committee meeting frequency: Evidence from a voluntary governance system. *Accounting Horizons, 23*(3), 245-263.

Shukeri, S. N., Shin, O. W., & Shaari, M. S. (2012). Does board of director's characteristics affect firm performance? Evidence from Malaysian public listed companies. *International Business Research, 5*(9), 120.

Sultana, N., Singh, H., & Van der Zahn, J. L. M. (2015). Audit committee characteristics and audit report lag. *International Journal of Auditing, 19*(2), 72-87.

Switzer, L. N., & Tang, M. (2009). The Impact of Corporate Governance on the Performance of US Small-Cap Firms. *International Journal of Business, 14*(4), 341-355.

Van Ness, R. K., Miesing, P., & Kang, J. (2010). Board of director composition and financial performance in a Sarbanes-Oxley world. *Academy of Business and Economics Journal, 10*(5), 56-74.

Wan Yusoff, W. F., & Armstrong, A. (2012). What competencies should directors possess? Malaysia perspective. *International Journal of Business and Management, 7*(2), 142-149.

World Bank Press Release. (July 01, 2015). *WB Update Says 10 Countries Move Up in Income Bracket.* Retrieved February 27, 2017, from http://www.worldbank.org/en/news/press-release/2015/07/01/new-world-bank-update-shows-bangladesh-kenya-myanmar-and-tajikistan-as-middle-income-while-south-sudan-falls-back-to-low-income

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics, 40*(2), 185-211.