International Review of Business Research Papers
Vol. 14. No. 2. September 2018 Issue. Pp. 24 – 44

Reforms in Internal Corporate Governance Mechanisms and Its Effects on Firm Performance in Bangladesh

Md. Faruk Hossain*

This study aims to explore the effects of reform in internal corporate governance mechanisms issued by Bangladesh Securities and Exchange Commission in 2012 (specially changes made in appointments of independent directors to the board) on firm performance for a sample of 45 non-financial listed firms on Dhaka Stock Exchange (DSE) during 2010-2015, splitting into two periods (pre-reform periods: 2010-2012; and post-reform periods: 2013-2015). This study is highly concerned to control for any possible endogeneity problem inherent in OLS regression model. Therefore, satisfying endogeneity and over-identification tests collected data are finally analyzed by OLS regression model rather than 2SLS regression model since no statistical evidence of using 2SLS regression model was found in Hausman test results. In this study, after controlling for firm specific factors, internal corporate governance mechanisms such as board size, board independence, and CEO duality are found to have significant effects on both accounting based performance measures and market based performance measure of firm during the post-reform periods; larger boards are negatively associated with firm performance; board independence is strongly and positively associated with all measures of firm performance; and CEO duality is significantly and negatively related to the accounting based performance measures.

1. Introduction

The path of maximizing shareholders' wealth is likely to be encountered with agency problem between principals (owners) and agents (managers). A good corporate governance can provide a firm with adequate mechanisms to safeguard the interests of the shareholders and other stakeholders, controlling for agency problem. But, there is no universally accepted model of corporate governance. Corporate governance mechanisms may be internal or external to the firm (Jensen & Meckling 1976; Fama 1980; Agrawal & Koneber 1996; World Bank 1996) and they are not equally applicable to all countries due to the law and regulatory differences (Prowse 1996) and cultural settings (Bhasa 2004). External mechanisms, such as mergers and takeovers (Asian Development Bank 2000; Denis & McConnell 2003), that work well outside the firms in the developed capital market with low ownership concentration (Aoki 1995). On the other hand, internal mechanisms work inside the firms, which include ownership structure, board structure, managerial incentives and debt policy (Denis & McConnell 2003). Rashid et al. (2010) argued that internal mechanisms may be the most powerful tools of mitigating the agency problems in the public limited companies in Bangladesh since they are not widely held and are controlled by the dominant shareholder groups.

*Associate Professor of Finance, Faculty of Business Administration, Hamdard University Bangladesh
E-mail: faruk.par.fin@gmail.com

One of the fundamental nerves of internal corporate governance is the corporate board, which is primarily responsible to monitor or supervise the management, to give strategic guidelines to the management and to review and ratify the management proposal (Jonson 2005). But, how properly a board is working for the interest of shareholders mostly depends on the board attributes; such as composition, characteristics, structure and process (Denis & McConnell 2003). This study focused on the board composition which mainly concerns about board size, board independence, and CEO duality. Therefore, to find the best composition of board best fitting with shareholders' interests is still on the stage of debate concerning to some fundamental questions. Firstly, what would be optimal size of a board? Secondly, how many outside independent directors are to be appointed into a board along with inside directors to make it much more independence? Finally, whether the CEO duality, which refers to the situation in which the Chief Executive Officer (CEO) holds the position of Chair of the board, is desirable to the firms.

To enhance corporate governance in the interest of investors and capital markets, Bangladesh Securities and Exchange Commission (BSEC) introduced a hybrid regulation named as Corporate Governance Notification 2006 (CGN 2006) that requires all listed companies must have a board consisting of a size ranging from 5 to 20 members and to appoint at least one tenth of the total number of company's board of directors, subject to a minimum of one, as independent director to a board. In addition, it suggests the firms to fill the positions of the Chairman of the Board and the CEO with different individuals. Rashid et al. (2010) documented that outside directors failed to add potential value to the firm's economic performance in Bangladesh as they do not have any supervisory position in the board. But, a remarkable reform in CGN has been made in 2012; where CGN 2006 has been superseded by CGN in 2012 requiring at least one fifth of the total number of directors as independent directors. These reforms drive the firms to the development of balanced board and lower agency problems .And, nowadays, the scenario of corporate governance in Bangladesh is moving towards the best performance.

To the best of knowledge of author, most of the studies attempting to examine the impact of internal corporate governance mechanisms on firm performance in Bangladesh are based on CGN 2006.Therefore, there is a lack of empirical evidence to justify how reform in CGN 2012 through increasing proportion of independent directors on board is becoming expedient to the firms. Thus, the main purpose of this study is to examine the influence of internal corporate governance mechanism (such as board size, board independence, and CEO duality) on financial performance of listed firms in Bangladesh over the pre-reform periods (2010-1012) and post-reform periods (2013-2015). Moreover, this research is clearly different from others as it is providing an opportunity for the comparison of the effectiveness of changes in board structure.

The remaining part of this paper is presented as follows. In section 2, literature is reviewed in identifying independent and dependent variables and developing the hypothesis. Section 3 addresses the methods and methodology of the research. Data analysis and interpretation of results are presented in section 4. Conclusions and recommendations for further analysis are discussed in section 5 followed by references.

2. Literature Review

2.1 Independent Variables and Hypothesis Development

Board Size: A board is a collection of individuals who must believe in a group and is responsible to develop a policy based governance system to guide, supervise, and monitor the activities of the management for protecting the investors' interests. To attain this goal shall be subject to the board size as there is a fear of getting divergent outcomes or decisions from a large board.

Stewardship theory believes that the managers are not necessarily motivated by individual goals, rather they are motivated to work in the interest of their principal, which can be fostered by the quality of the relationship between the principal and steward (Davis, Schoorman & Donaldson 1997) and that is why a smaller board is enough to review the management's actions and therefore leads to better firm performance. Yermack (1996) confirmed a negative association between board size and firm value providing an argument that large board suffers lack of communication, coordination, and symmetric information as a result the benefits of monitoring from large board far outweigh these problems. Cheng (2008) also found a negative impact of board size on both the accounting base measure and market base measure of firm performance.

Agency theory (Jensen & Meckling 1976) suggests a firm to have a larger board as it is expected that a greater number of people can precisely review the management actions. According to Dalton et al. (1999), a larger board is the greater collective information of non-executive and executive directors that is valuable for monitoring and hence larger boards will lead to higher performance. To re-examine the ideal number for a board by classifying firms into complex or simple firm, Coles et al. (2008) found that the impact of board size on firm value is positive for large firms. Forbes and Milliken (1999) documented that large boards may increase the quality of decision-making offering a broader array of perspectives if they are able to reach a consensus. Given these two contrasting theories and the empirical findings we adopt the following null hypothesis:

Hypothesis 1: Larger board is negatively associated with firm performance.

Board Independence

Board independence measured by the percentage of independent directors in the board who have no direct financial, family or interlock ties with management is considered to be more effective tool of management (Hermalin & Weisbach 2003). They bring advance qualifications, expertise and experience and, thereby, they can effectively influence the board's decisions and ultimately can add value to the firm (Fields & Keys 2003). Agency theory argues that a board featuring a greater proportion of independent directors will be able to monitor any self-interested actions by managers and so will minimize the agency costs resulting in efficient decision making and organization prosper quickly (Fama & Jensen 1983; Fama 1980). Daily and Dalton (1992) find a positive relationship between board independence and firm performance. Evidence from

Australia suggests that proportion of inside directors has significant positive impact on market-based measure of firm performance (Kiel & Nicholson 2003).

On the other hand, advocates of stewardship theory argued that superior corporate performance is linked to a majority of inside directors since they can bring superior information to the board on decisions (Donaldson & Davis 1991; Donaldson 1990). There is a potential barrier between outside directors and firm performance that they may lack relevant firm inside information (Adams & Ferreira 2007), which is likely to be problematic for small growth firms. Agrawal and Knoeber (1996), Bhagat and Black (2002), and Rashid et al. (2010) find a negative relationship between board independence and firm performance, while Hermalin and Weisbach (1991) do not find any relationship between board independence and performance. As it is stated earlier, in Bangladesh the revised CGN-2012 requires the appointment of at least one fifth instead of one tenth of the total directors as independent directors to improve the corporate governance practice for the listed firms. Following this reform in CGN in Bangladesh, we adopt the null hypothesis:

Hypothesis 2: Board independence is positively related to the firm performance.

CEO Duality

It refers to the situation in which the Chief Executive Officer (CEO) holds the additional responsibility of heading the Board of Directors. CEO is the most important person of a company, who is ultimately responsible for developing and executing the long term strategies with a view to creating shareholders' value. The chairman of a board is also responsible for protecting investors' interests. But how robustly investors' interests are being attained mostly depend on the leadership skill of the Chairperson (Leblanc 2004). Stewardship theory argues that one person in both roles may improve firm performance as such a structure ensures unity of command and removes any internal and external ambiguity (Donaldson 1990). Donaldson and Davis (1991) found that firms with duality actually enhanced shareholder wealth and increased ROE when compared to firms with independent board chair.

On the other hand, in the context of agency theory (Fama & Jensen 1983), CEO duality may give enormous power and authority to the CEO and often tempted to pursue their own interest, which reduces the checks and balances, threatens independence, and permits conflicts of interest (Tricker 1994). As the CEO duality board is usually dominated by the management, it may reduce the board's ability to exercise the functions of good governance and creates a conflict between management and board (Tricker 1994; Yermack 1996).Therefore, separating the position of CEO and board Chairperson can be a remedial measure to reducing the opportunistic behavior by the CEO and inside directors, which will in turn allow the board to better exercise its control (Daily & Dalton 1994). The recent evidence suggests that a firm's market value declines under CEO duality (Carter, Simkins & Simpson 2003). Following the agency theory, this study holds the following hypothesis:

Hypothesis 3: CEO duality is negatively related to the firm performance.

2.2 Control Variables and Hypothesis Development

To avoid any spurious relation between firm performance and board composition, this study considered, following earlier studies, four control variables such as director ownership, firm age, firm leverage and firm growth.

Director Ownership

The spread of share ownership in public limited companies in Bangladesh is not wide and the control of business is concentrated in dominant shareholder groups mainly constructed by founding sponsors/directors who are also family members (Rashid & Lodh 2008). Dhaka Stock Exchange (DSE) had followed an astonishing movement in its activity as its benchmark index crossed 8500 points from 4000 points for the first time in 2010, while founding sponsors/directors were claimed to selling their shares. Thereafter, DSE experienced a dramatic collapse in 2010-11 and Bangladesh Securities and Exchange Commission (BSEC) made a directive mandatory for sponsors, directors and promoters to jointly hold at least 30 per cent stake in the firm with a view to increasing sponsor-directors' ownership for protecting market from further fall (Murtuza 2016). This directive upholds a presumption that holding a certain percentage of shares of entity of a firm by sponsors, directors, and promoters can drive them into a corner of ownership concentration and make them more sensitive to the firm financial outcomes and more responsible to practice corporate governance into the firm. Han and Suk (1998) documented that increase in director ownership led to better corporate performance. Pondering the directives of BSEC, we expect the following:

Hypothesis 4: There is a positive relationship between director ownership and firm performance.

Leverage

Jensen (1986) argues that firm having a chance of falling into agency problem should use more debt to reduce the availability of free cash flows at manager's hand since it lowers the scope of ill investment decisions by managers. In addition, creditors play a role of monitoring, controlling, and governing the firms, which may increase firm performance apart from the need for additional monitoring provided by concentrated ownership. Two measures of leverage are used in this study. Consistent with Wang and Ong (2005) and Rashid (2009) leverage is measured by the ratio of total liabilities to total equity and long-term liabilities to total equity.

Hypothesis 5: Leverage can significantly influence firm performance.

Growth

An increase in total assets means high growth and it tends to be more profitable. Frank (1988) found that growth is a good signal of the firm's performance expectations and hence implies a positive correlation between firm's performance and growth. Thus a positive relationship between growth rate and profitability of firm is conjectured.

Hypothesis 6: Growth of the firm positively influences firm performance.

Size

Large firms may turn out to be more efficient as they are likely to exploit economies of scale, employ more skilled managers, mobilize cheap funds, and the formalization of procedures that may lead to better performance. Thus the size of the company can have a positive effect on financial performance. This study uses the natural log of total sales to measure firm size.

Hypothesis 7: Size of the firm can positively or negatively influence firm performance.

Age

It is assumed that an older firm has a good reputation in the market and enjoys economies of scale and superior possession compared to new comers, which will positively affect firm performance. This study uses total years since firms were listed to proxy for age.

Hypothesis 8: There is significant relationship between firm age and firm performance.

Industry Dummy

To identify the impact of industry classification on firm performance, total number of sample firms were categorized into eight industries namely Cement, Ceramics, Engineering, Food & Allied, Fuel & Power, Information Technology (IT), Pharmaceuticals & Chemicals, and Textile in accordance with the category read by DSE. Wenerfelt and Montgomery (1988) find that industry effects account for majority of explained variance in firm performance measured in Tobin's Q.

Hypothesis 9: Firm performance significantly differs across industries.

2.3 Dependent Variables

The dependent variables, firm financial performance, of this study are measured by the common accounting based ratios namely return on assets (ROA) and return on equity (ROE). Consistent with Yammeesri and Lodh (2004), ROA is calculated by using a ratio of Earnings before Interest and Taxes (EBIT) to book value of total assets and ROE is calculated by Earnings before Interest and Taxes (EBIT) to shareholders' equity. But, it is claimed in literature that accounting based measures don't reflect the future prospects of firm performance, whereas market based measure reflects the information of market agents as well as their judgment about the firm's future prospects if the market is efficient. In Bangladesh, the performance of Dhaka Stock Exchange (DSE) is not consistent with the conditions of 'weak form efficiency' and 'strong form efficiency', but 'semi strong' form of efficiency (Bose, Uddin & Islam 2014). Nevertheless, consistent with Agrawal and Knoeber (1999), Kumar (2003), and Rashid et al. (2010) this study uses proxy for Tobin's Q ratio (TQ) in measuring the effects of internal corporate governance on market base measure of firm performance.

3. Methods and Methodology of the Study

3.1 Sample Selection and Data Collection

This study is based on secondary data of a sample of 45 nonfinancial companies which have been extracted from a population of 198 nonfinancial companies listed on Dhaka Stock Exchange (DSE) in 2017. The banks, non-bank financial institutions, and insurance companies were kept out of this study because of their specific financial activities and their supervision either under the Central Bank or Insurance Development and Regulatory Authority of Bangladesh. The frequency distribution of industry classification of sample companies is shown in table 1. In this study, most of data have been collected from the annual report of selected listed companies over 2010 to 2015; companies maintaining annual reports in e-format during 2010-2015 for its investors were chosen as sample of this study. Market base data like year-end market prices of stock for TQ have been collected from a website of Stock Bangladesh Limited.

Table 1: Frequency Distribution of Industry Classification

Industry	Frequency
Cement	4
Ceramics	3
Engineering	9
Food & Allied	5
Fuel & Power	6
Information Technology (IT)	3
Pharmaceuticals & Chemicals	6
Textile	9
Total	**45**

3.2 Data Analysis Procedures and Model Specification

In order to examine the influence of the recent reforms in internal corporate governance mechanisms on firm performance in Bangladesh, we divided the panel data collected over six-year periods ranging from 2010 to 2015 into two sub periods of three years each: one is pre-reform period of CGN-2012, during 2010-2012; and another is post-reform period of CGN-2012, during 2013-2015.None of the studies in Bangladesh attempted to compare the differences on firm performance before and after the amendment of CGN, and the effort of this study is to extract new evidence from this gap. According to Baltagi (2005), panel data give “more informative data, more variability, less collinearity among variables, and more efficiency.” Collected data have been analyzed through descriptive and econometric process. In a process of descriptive analysis mean, standard deviation, maximum and minimum value for each variable are presented in this study. It is earlier noted that DSE started correcting its movements in share price after it had experienced a dramatic collapse in 2011, which yields a high fear of outlier effects in the data of market based performance measure of TQ. Therefore, in analyzing the data of TQ, all the observations in 2010 are excluded from the main data stream.

Ina part of econometric analysis, we used the following linear regression model. The model is:

$$Y_{it} = \alpha + \beta_i X_{it} + \varepsilon_{it}$$

Where *i* =1.....N denotes the cross-sectional dimension and *t* =1...T represents the time series dimension. The left-hand variable, Y_{it} represents the dependent variable in the model, which is alternatively ROA_{it}, ROE_{it}, ROS_{it}, and TQ_{it} for i^{th} firm at time t. X_{it} contains the set of explanatory variables in the estimation model, α is the constant, β_i represents the slope coefficient of i^{th} variable, and ε is the random errors. Therefore, the functional form of econometric model is as follows:

$$\text{Performance}_{it} = \alpha + \beta_1(LNBS)_{it} + \beta_2(BIND)_{it} + \beta_3(CEOD)_{it} + \beta_4(DOWN)_{it} + \beta_5(DE)_{it} + \beta_6(TDE)_{it} + \beta_7(GR)_{it} + \beta_8(SIZE)_{it} + \beta_9(AGE)_{it} + \beta_{10}(IND_1)_{it} + \beta_{11}(IND_2)_{it} + \beta_{12}(IND_3)_{it} + \beta_{13}(IND_4)_{it} + \beta_{14}(IND_5)_{it} + \beta_{15}(IND_6)_{it} + \beta_{16}(IND_7)_{it} + \varepsilon_{it}$$

Where:

Variables		Proxies	Symbol	Measures
Dependent Variables	Firm Performance	Return on Assets	ROA	Earnings before interest and taxes ÷ Total Assets
		Return on Equity	ROE	Earnings before interest and taxes ÷ Shareholders' Equity
		Proxy of Tobin's Q	TQ	(Market value of common equity + Total liabilities) ÷ Book value of total Assets
Independent Variables	Board Structure	Board Size	LNBS	Natural logarithm of the total number of members on the board
		Board Independence	BIND	Proportion of independent director on the board
		CEO Duality	CEOD	'1' if CEO duality exists, '0' otherwise
	Control Variables	Director Ownership	DOWN	Proportion of shares held by directors/sponsors
		Leverage-1	DE	Long Term Liabilities ÷ Shareholders' Equity
		Leverage-2	TDE	Total Liabilities ÷ Shareholders' Equity
		Firm Size	SIZE	Natural logarithm of total assets
		Firm Age	AGE	Total no. of years since the firm was listed on the DSE
		Firm Growth	GR	Relative Δ in book value of total assets
		Industry dummy	IND_1	'1' if the observation belongs to Ceramics, '0' otherwise
		Industry dummy	IND_2	'1' if the observation belongs to Engineering, '0' otherwise
		Industry dummy	IND_3	'1' if the observation belongs to Food & Allied, '0' otherwise
		Industry dummy	IND_4	'1' if the observation belongs to Fuel & Power, '0' otherwise.
		Industry dummy	IND_5	'1' if the observation belongs to IT, '0' otherwise
		Industry dummy	IND_6	'1' if the observation belongs to Pharmaceuticals & Chemicals, '0' otherwise
		Industry dummy	IND_7	'1' if the observation belongs to Textile, '0' otherwise

This study primarily intended to regress the above model through Ordinary Least Square (OLS) regression analysis which was also used by Rashid et al. (2010). But there has been increasing concern to control for the endogeneity inherent in any regression of firm performance on board structure (Hermalin & Weisbach 2003; Bhagat & Black 2002). If board structure is endogenous, OLS will yield biased and inconsistent coefficient estimates. Taking instrumental variables in a two-stage least square (2SLS) regression can be a remedial measure for controlling endogeneity problem. But there is no grounded theory in the literature for selecting good instruments for controlling endogeneity because this selection is arbitrary or subject to the availability of variables. Following the methodology of Rashid and Lodh (2008), we used the lagged values of all control variables such as $DOWN_{i(t-1)}$, $DE_{i(t-1)}$, $TDE_{i(t-1)}$, $AGE_{i(t-1)}$,$SIZE_{i(t-1)}$, and $GR_{i(t-1)}$ as instrumental variables. But in dealing with the endogeneity problem through 2SLS, there is a risk to obtain less reliable value of coefficient estimates relative to OLS estimates (Barnhart & Rosenstein 1998). Therefore, over-identification test is applied to investigate whether the instrument variables are valid. Moreover, to justify whether there is any significant evidence of using OLS regression rather than 2SLS regression a Hausman test (Greene 2003) along with endogeneity testis employed. Accordingly, the methods of data analysis are properly justified in this study. The probable effects of multicollinearity among the regressors on the selected model have also been tested. All the analyses are computed using STATA version 10 and version 11 for windows.

4. Empirical Results

4.1 Descriptive Statistics

Results of descriptive statistics showing mean, standard deviation, minimum, and maximum of the selected variables for pre-reform (2010-1012) and post-reform (2013-2014), and combined pre- and post- reform (2010-2015) periods are presented in table 2 and 3 respectively. Table 2 also provides the results of mean difference tests between two sample periods- pre-reform and post-reform periods. The mean values of firm financial performance measured in ROA and ROE are 11.1% and 20.5% respectively in post-reform period which are slightly high compared to pre-reform period, though any of this increase in ROA and ROE during post-reform period is not statistically significant at 5% level. The mean value of TQ has increased to2.935 in post-reform period from 2.548 in pre-from period, but this change is not significant at 5% level. Inspection of table 2 also suggests that average size of board of the firms has declined slightly to 7.382 in post reform period from 7.463 in pre-reform period, which is not a significant change at 5% level. But appearance of independent directors in the board has become much stronger after reforms in corporate governance mechanism in Bangladesh since its mean value has climbed to 24.3% in post-reform period, up from 17.4% in the pre-reform period. This increase indicates a statistically significant reform of corporate governance notification in Bangladesh at 1% level of significance. In most listed firms in DSE, chairman of the board does not simultaneously hold the position of CEO as its mean value has declined from 10.4% to 2.2% after reform of corporate governance mechanism, which indicates firms' high level compliance with corporate governance-

Table 2: Summary of Descriptive Statistics of the Samples and Mean Difference Tests

Pre-Reform Period (2010-2012)[1]					Post-Reform Period (2013-2015)				Mean Difference Test	
Variables	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	t-tests	P-value
ROA	0.106	0.079	-0.045	0.459	0.111	0.101	-0.026	0.521	-0.4582	0.6472
ROE	0.204	0.175	-0.066	0.982	0.205	0.21	-0.035	1.067	-0.0668	0.9468
TQ	2.548	3.263	0.721	23.034	2.935	4.466	0.588	31.668	-0.7067	0.4805
LNBS	2.01	0.288	1.61	3	1.988	0.3175	1.61	2.94	0.6145	0.5394
BIND	0.174	0.071	0.05	0.6	0.243	0.064	0.13	0.63	-8.3972***	0.0000
CEOD	0.104	0.306	0	1	0.022	0.147	0	1	2.7853***	0.0057
DOWN	0.478	0.204	0.05	0.9	0.473	0.199	0.047	0.9	0.1950	0.8456
SIZE	22.007	1.561	17.32	25.24	22.25	1.565	17.34	25.53	-1.2931	0.1971
DE	0.247	0.453	0	2.687	0.238	0.421	0	2.41	0.1623	0.8712
TDE	1.023	0.993	0.057	6.364	0.976	0.919	0.031	6.407	0.4041	0.6865
GR	0.224	0.341	-0.147	3.098	0.078	0.118	-0.138	0.528	4.7135***	0.0000

"1" Descriptive statistics of TQ during 2011-2012.

Table 3: Summary of Descriptive Statistics of All Samples Composing of Pre-Reform and Post-Reform Periods (2010-2015)

Variables	Mean	Std. Dev.	Min	Max
ROA	0.108	0.091	-0.045	0.522
ROE	0.204	0.193	-0.066	1.067
TQ[2]	2.781	4.025	0.588	31.668
LNBS	1.999	0.303	1.61	3
BIND	0.208	0.076	0.05	0.60
CEOD	0.063	0.243	0	1
DOWN	0.475	0.201	0.047	0.9
SIZE	22.129	1.565	17.32	25.53
DE	0.242	0.436	0	2.687
TDE	0.999	0.955	0.031	6.407
GR	0.151	0.264	-0.147	3.098
AGE	19.533	11.026	7	41

"2" Descriptive statistics of TQ during 2011-2015 avoiding the outlier effects in the observation of this variable in year 2010.

notifications (CGN) in Bangladesh. And, this decrease in the mean value of CEOD is significant at 1% level during post-reform periods. The mean for the control variable of DOWN has declined slightly from 47.8% to 47.3%. The mean values of two measures of leverage like DE and TDE have decreased to 23.8% and 97.6% from 24.7% and 102.3% respectively, though none of these changes is significant at 5% level. On an average, size of the every firm measured in natural log of total assets has increased to 22.253 in post-reform periods, up from 22.007 in pre-reform periods, but this increase is insignificant at 5% level. A significant change in growth of the firms is found, at 1% level, between pre-reform and post-reform periods. Table 3 shows the results of descriptive statistics of all variables used in this study by taking account of data combining pre- and post-reform periods.

4.2 Collinearity

To examine the existence of multicollinearity among the explanatory variables Pearson correlation coefficients and variance inflation factor (VIF) are performed. In general, independent variables having collinearityat 0.7 or greater would not include in regression analysis due to multicollinearity. The highest correlation coefficients are found between DE and TDE, which are 0.539, 0.601, and 0.567 presented in table 4, 5, and 6 respectively. Thus all of the independent variables are free from serious problems of multicollinearity and more competent for regression analysis. According to The results of VIF in table 4, 5, and 6, there is no severe multicollinearity among regressors since VIF values for all variables are less than 2.09 in any sample period, where a rule of thumb VIF of 10 or more signals a severe multicollinearity (Chaterjee & Price, 1991).

Table 4: Correlation Matrix of the Independent Variables for Pre-Reform Period, 2010-2012

	LBS	INDB	CEOD	DOWN	DE	TDE	SIZE	GR	AGE	VIF
LNBS	1.000									1.54
BIND	-0.396	1.000								1.28
CEOD	-0.153	-0.087	1.000							1.11
DOWN	0.195	0.027	-0.042	1.000						1.38
DE	0.307	-0.191	-0.067	0.347	1.000					1.84
TDE	0.008	-0.118	0.011	0.367	0.539	1.000				1.61
SIZE	0.403	-0.154	-0.148	0.386	0.453	0.215	1.0000			1.51
GR	-0.023	-0.034	-0.099	-0.134	-0.056	0.011	-0.0594	1.000		1.04
AGE	0.012	-0.016	0.169	-0.096	-0.169	-0.091	-0.067	-0.014	1.000	1.07

Table 5: Correlation Matrix of the Independent Variables for Post-Reform Period, 2013-2015

	LBS	INDB	CEOD	DOWN	DE	TDE	SIZE	GR	AGE	VIF
LNBS	1.000									1.77
BIND	0.237	1.000								1.17
CEOD	-0.123	-0.147	1.000							1.09
DOWN	0.308	-0.089	-0.013	1.000						1.40
DE	0.282	0.210	-0.017	0.217	1.000					2.09
TDE	-0.004	0.012	0.110	0.275	0.601	1.000				1.86
SIZE	0.547	0.218	-0.074	0.280	0.424	0.177	1.000			1.73
GR	0.062	0.064	-0.067	-0.192	0.173	0.131	0.208	1.000		1.20
AGE	0.120	-0.109	0.170	-0.052	-0.170	-0.022	-0.074	0.122	1.000	1.19

Table 6: Correlation Matrix of the Independent Variables for All Sample Periods, 2010-2015

	LBS	INDB	CEOD	DOWN	DE	TDE	SIZE	GR	AGE	VIF
LNBS	1.000									1.47
BIND	-0.086	1.000								1.08
CEOD	-0.124	-0.165	1.000							1.09
DOWN	0.254	-0.030	-0.028	1.000						1.29
DE	0.293	-0.011	-0.047	0.285	1.000					1.90
TDE	0.002	-0.063	0.043	0.323	0.567	1.000				1.69
SIZE	0.473	0.057	-0.128	0.331	0.436	0.193	1.000			1.55
GR	0.010	-0.134	-0.042	-0.125	0.002	0.042	-0.013	1.000		1.05
AGE	0.069	-0.054	0.157	-0.074	-0.169	-0.057	-0.070	0.018	1.000	1.09

4.3 Tests of Endogeneity, Over-identification, and Hausman Specification

The results of 2SLS regression, endogeneity test, over-identification test, and Hausman test are shown in table 7.As it is observed in pre-reform periods, post-reform periods, and combined (pre- and post-reform) periods from table 7, both Durbin and Wu-Hausman test results fail to reject the null hypothesis that the board structure, measured in natural log of board size, is exogenous at 5% level of significance, indicating no significant presence of endogeneity problem between any of the dependent variables and board structure in each of the three sample periods. Results of Sargan chi-squared test and Basmann chi-squared test in pre-reform periods, post-reform periods, and combined periods shown in table 7 also confirm that instrumental variables ($DOWN_{i(t-1)}$, $DE_{i(t-1)}$, $TDE_{i(t-1)}$, $AGE_{i(t-1)}$, $SIZE_{i(t-1)}$, and $GR_{i(t-1)}$) of this study are exogenous as the null hypothesis- the instrumental variables are not correlated with the residuals- is not rejected at 5% level of significance; hence instrumental variables are statistically valid.

In table 8, p-value of Hausman chi-squared tests for each of the three sample periods is less than 0.05 which evidence that OLS estimator would be statistically consistent at 5% level of significance. Therefore, we finally run OLS regression rather than 2SLS regression and retain its estimator for further discussion in attaining the objective of this study.

4.4 Discussion of Regression Results

In order to examine the influence of recent reforms in internal corporate governance mechanism on firm performance observed data are split into two periods: pre-reform period (2010-2012) and post-reform period (2013-2015). Thus, obtained results have the capacity to yield a comparative insight into the relationship between board structure and firm performance; it is the ability of this study to justify the amendment to the corporate governance mechanisms, which is almost novel.

The results of regression analysis are presented in table 9 for pre-reform period and for post-reform period; and in table 10 for combined periods (pre- and post-reform periods) after satisfying endogeneity, over-identification, and Hausman tests. The results of F-statistic for all regression models are statistically significant, that prove the validity of all

estimated models. As it is observed from the table 9, the board size has no significant influence on both accounting-based measures of ROA and ROE and market based measure of TQ for the pre-reform period. On the other hand, it is negatively related to all the three measures of firm performance for the post-reform period while significantly associated only with ROA. Therefore, empirical results evidence that larger board does not work dexterously as it failed to bring about a profound improvement on firm performance after reforms in corporate governance mechanism in Bangladesh. It may because that many directors on the board mean many groups in the board, which could result in widespread incoordination and asymmetric information, higher agency cost, and social loafing in the board and finally poor performance of the firm. This result is compliance with the findings of Hossain et al. (2001) for the New Zealand context, Bhagat and Black (2002) and Cheng (2008) for the U.S. context, and Rashid et al. (2010) for the Bangladesh context. However, the predicted first hypothesis of this study, board size is negatively associated with firm financial performance, is moderately accepted for the post reform period.

Table 7: Summary of 2SLS Regression with Endogeneity, and Over-Identification Tests

	2SLS Coefficients								
	Pre-Reform Period: 2010-2012			Post-Reform Period: 2013-2015			Combined Period (Pre-and Post-Reform): 2010-2015		
	ROA	**ROE**	**TQ[3]**	**ROA**	**ROE**	**TQ**	**ROA**	**ROE**	**TQ[4]**
LNBS	-.0502	.0359	-2.4947	.1521	.1648	5.6751	-.1258	-.2514	-1.9241
	(-0.22)	(0.08)	(-0.21)	(0.62)	(0.36)	(0.46)	(-0.90)	(-0.86)	(-0.21)
BIND	-.0682	.0029	-1.4363	.0812	.2645	8.4453	.0212	-.0293	6.752*
	(-0.24)	(0.00)	(-0.12)	(0.21)	(0.37)	(0.43)	(0.30)	(-0.20)	(1.92)
CEOD	-.0832***	-.1438***	.0689	-.1216**	-.273**	-2.3663	-.094***	-.1818***	-.7023
	(-3.75)	(-3.17)	(0.05)	(-2.10)	(-2.50)	(-0.80)	(-4.57)	(-4.27)	(-0.57)
DOWN	.1335***	.2191**	-.1023	.2284***	.5533***	3.7630	.2025***	.4242***	3.922*
	(2.97)	(2.38)	(-0.03)	(2.80)	(3.59)	(0.90)	(6.12)	(6.16)	(1.68)
DE	-.0611***	-.1335***	-.8992	-.0677	-.1403	-.3368	-.069***	-.1482***	-1.0234
	(-2.90)	(-3.10)	(-0.75)	(-1.49)	(-1.64)	(-0.15)	(-4.02)	(-4.13)	(-1.05)
TDE	-.0127	.0564**	-.1809	-.0099	.0198	.0149	-.0185**	.0251	-.2851
	(-1.11)	(2.41)	(-0.26)	(-0.77)	(0.82)	(0.02)	(-2.23)	(1.45)	(-0.55)
GR	-.0241	-.0393	1.0881	.1273*	.2264*	-3.7468	.0011	.0062	.9854
	(-1.50)	(-1.20)	(1.12)	(1.77)	(1.67)	(-1.02)	(0.06)	(0.17)	(1.04)
SIZE	.0041	.0106	.1612	-.0159	-.0240	-.5448	.0089	.0188	.1056
	(0.39)	(0.50)	(0.25)	(-0.75)	(-0.60)	(-0.50)	(0.86)	(0.87)	(0.15)
AGE	.0013	.0022	.0590	-.0017	-.0024	.0290	.0010	.0020	.0734
	(1.56)	(1.33)	(1.13)	(-0.88)	(-0.66)	(0.29)	(1.18)	(1.09)	(0.15)
IND	Included	Included	Included	Included	Included	Included	Included	Included	Included
Const.	.0470	-.3553	5.9126	.0455	.0502	5.3107	.0640	.0222	4.261
	(0.15)	(-0.55)	(0.39)	(0.25)	(0.15)	(0.58)	(0.54)	(0.09)	(0.75)
R^2	0.4822	0.5582	0.2392	0.4535	0.5475	0.2605	0.3929	0.4183	0.2413
Adj. R^2	0.4114	0.4978	0.075	0.3788	0.4856	0.1594	0.3544	0.3814	0.1830
F-stat.	7.23***	9.21***	1.75*	7.79***	9.53***	3.61***	12.82***	13.76***	4.43***
Endogeneity Test (Null hypothesis: Natural log of board size is exogenous)									
Durbin chi^2	.135182 p = 0.7131	.000044 p = 0.9947	.17959 7 p = 0.6717	1.0405 4 p = 0.3077	.36441 3 p = 0.5461	.57998 4 p = 0.4463	1.2212 6 p = 0.2691	1.11286 p = 0.2915	.096104 p = 0.7566
Wu-Hausman F-stat.	.117141 p = 0.7328	.000038 p = 0.9951	.14396 5 p = 0.7055	.90781 4 p = 0.3427	.31632 2 p = 0.5749	.50425 8 p = 0.4791	1.1447 4 p = 0.2857	1.04271 p = 0.3082	.088453 p = 0.7665
Over-identification Test (Null hypothesis: Instrumental variables are uncorrelated with error)									
Sargan chi^2	4.8735 p = 0.4315	5.86354 p = 0.3197	6.0502 p = 0.1954	4.1446 4 p = 0.5288	3.7372 8 p = 0.5878	5.3009 2 p = 0.3803	5.8527 4 p = 0.3208	5.72259 p = 0.3342	6.07827 p = 0.1934
Basman chi^2	4.22711 p = 0.5172	5.12513 p = 0.4008	4.9727 8 p = 0.2901	3.5747 4 p = 0.6121	3.2133 2 p = 0.6671	4.6131 1 p = 0.4649	5.4936 1 p = 0.3586	5.36879 p = 0.3725	5.66397 p = 0.2257

Instrumented: Natural Logarithm of Board Size

"3" represents regression results for the period of 2011-2012, "4" represents regression results for the period of 2011-2015. * Significant at 10% level, ** significant at 5% level, and *** significant at 1% level. Numbers in parentheses are t-statistics.

Table 8: Summary of Hausman Test for Model Selection

Hausman-Test for Model Selection (Null hypothesis: OLS estimator is consistent)									
	Pre-Reform Period (2010-2012)			Post-Reform Period (2013-2015)			Combined Periods (Pre- and Post-Reform): 2010-2015		
	ROA	ROE	TQ[5]	ROA	ROE	TQ	ROA	ROE	TQ[6]
Hausman Chi^2	1.36 (P = 0.2440)	1.57 (P= 0.2106)	0.15 (P = 0.7027)	1.77 (P = 0.1836)	1.28 (P = 0.2588)	3.29 (P = 0.0697)	2.39 (P = 0.1222)	2.66 (P = 0.1030)	0.09 (P = 0.7657)

"5" Results for two-year periods, 2011-2012; "6" Results of five-year periods, 2011-2015.

In table 9, the results of regression analysis also reveal that coefficients of board independence are positive under ROA, ROE, and TQ for the pre-reform period though none is significant, but they are found to be significant and positive for both accounting based performance measures of ROA and ROE and market based measure of TQ at 1 percent level after reforms in corporate governance mechanism in Bangladesh. These findings indicates that compliance with CGN2012, which requires all listed firms to increase proportion of independent directors on the board to 20 percent from 10 percent (CGN2006) with an objective to strengthen the grip of independent directors on the board and to ensure their effective judgmental contributions to firms, lead to improve firm's performance over the post reform period. But, this finding is moderately contrast to the previous findings by Rashid et al. (2010) as they found that board independence has insignificant and positive association with ROA and TQ; it is most probably due to using different time series observations in their study that were prior to the reform in corporate governance mechanism in Bangladesh. However, the positive and significant relationship between board independence and market based measure of firm performance (TQ) is consistent with the empirical findings of Kiel and Nicholson (2003) for the context of Australia, suggesting that investors' assessment to firm performance is optimistic when there are a large number of independent directors on the board. However, the predicted second hypothesis of this study, board independence is positively related to the firm financial performance, is strongly supported by results of post reform period.

As seen in table 9, CEO duality is significantly affecting all accounting based measures of firm performance in a same direction i.e. negatively for both pre-reform and post-reform periods, though it is found insignificant in explaining any change in market based measure of firm performance (TQ) for both pre-reform and post-reform periods. However, this result strongly confirms the agency theory that CEO duality verily brings firm's performance down because it allows a threat to board independence (Dalton & Kesner 1987) and a conflict of interest (Tricker 1994).The result of the study is partially consistent with Rashid et al. (2010), Carter et al. (2003), and Chen et al. (2008). Hence, it is strongly evident that CEO duality is negatively related to the firm financial performance. However, the predicted third hypothesis that board independence is positively related to firm financial performance is moderately accepted for both pre-reform and post-reform periods.

Table 9: Summary of OLS Regression Analysis

This table presents the summary of regression results of different performance measures on board structure and various control variables. Column (a) and (b) represent the regression coefficients using a data ranging from 2010-2012, but (c) shows coefficients for sample data ranging from 2011-2012 due to potential outlier problems of TQ in 2010. Column (d), (e), and (f) represent the regression coefficients using a data ranging from 2013-2015.The t-statistics are presented in parentheses.

	Pre-reform Period, 2010-2012			**Post-reform Period, 2013-2015**		
	(a)	(b)	(c)	(d)	(e)	(f)
Dep. Var.	**ROA**	**ROE**	**TQ**	**ROA**	**ROE**	**TQ**
LNBS	-.0101	.0043	1.7726	-.0436**	-.0237	-1.9472
	(-0.35)	(0.10)	(1.07)	(-2.04)	(-0.62)	(-1.12)
BIND	.0807	.1094	2.7319	.3019***	.4442***	18.7923***
	(0.85)	(0.75)	(0.58)	(3.61)	(2.98)	(2.76)
CEOD	-.0529***	-.089***	.2267	-.1078***	-.2024***	-3.1172
	(-2.63)	(-2.86)	(0.19)	(-3.64)	(-3.82)	(-1.29)
DOWN	.1316***	.2087***	-.7623	.2045***	.3470***	6.6049***
	(3.87)	(3.97)	(-0.40)	(8.14)	(7.73)	(3.23)
DE	-.0517***	-.1158***	-.9964	-.1027***	-.1460***	-1.5224
	(-2.63)	(-3.82)	(-0.87)	(-5.92)	(-4.71)	(-1.08)
TDE	-.0052	.0092	.0297	-.0051	.0034	-.2144
	(-0.65)	(0.75)	(0.07)	(-0.76)	(0.28)	(-0.39)
GR	.0159	.0238	1.1712	.0512	.1559**	-4.2848
	(0.92)	(0.89)	(1.35)	(1.32)	(2.25)	(-1.36)
SIZE	.0139**	.0213**	.016089	.0115***	.0030	.1592
	(2.42)	(2.40)	(0.05)	(2.73)	(0.41)	(0.46)
AGE	.0217*	.0287	1.0972*	-.0023	-.0115	1.5223**
	(1.90)	(1.63)	(1.73)	(-0.28)	(-0.76)	(2.20)
Ceramics	.0332	.0434	2.6319	-.0688***	-.1174***	-5.5929***
	(1.06)	(0.89)	(1.51)	(-2.94)	(-2.81)	(-2.94)
Engineering	.0664***	.1035***	-3.1591**	.0116	-.0094	-6.42***
	(2.65)	(2.68)	(-2.27)	(0.65)	(-0.29)	(-4.39)
Food & Allied	.0706**	.1798***	-3.2141**	.0898***	.1679***	-3.7784**
	(2.49)	(4.10)	(-2.03)	(4.38)	(4.58)	(-2.26)
Fuel & Power	.0636**	.1293***	-2.5544	.0730***	.0686*	-4.9558***
	(2.23)	(2.93)	(-1.57)	(3.27)	(1.72)	(-2.73)
IT	.0661*	.0991*	-3.4228	.0294	-.0075	-5.0037**
	(1.80)	(1.75)	(-1.67)	(1.16)	(-0.17)	(-2.42)
Pharma. &	.0375	.0814**	-2.8479**	.0534***	.0901***	-5.1848***
Chemical	(1.48)	(2.08)	(-2.03)	(2.92)	(2.75)	(-3.47)
Textile	.0144	.0441	-3.2121**	-.0140	-.0402	-6.6448***
	(0.55)	(1.10)	(-2.22)	(-0.78)	(-1.24)	(-4.51)
Constant	-.3666**	-.6066***	-2.2138	-.2516**	-.1305	-2.6514
	(-2.48)	(-2.66)	(-0.27)	(-2.57)	(-0.75)	(-0.33)
F-Statistic	3.71***	4.83***	2.09**	11.65***	10.60***	4.06***
Adjt. R^2	0.2445	0.3137	0.1633	0.5597	0.5340	0.2674

* Significant at 10% level, ** significant at 5% level, and *** significant at 1% level

Table 9 also reveals that control variable (director ownership) has a significant and positive association with all measures of firm performance for both observations taken from the periods of before and after reforming corporate governance mechanism, except for TQ over pre-reform period, implying that any increase in director ownership leads to better performance (Han & Suk 1998) and makes the directors more sensitive to the firm financial outcomes and more responsible to comply with corporate governance guidelines. Overall, the reform of corporate governance restores retail

investors' confidence in directors' role in the management of firms over the post reform periods. In addition, DE is significantly and negatively related to ROA and ROE. TDE is not found to have any significant relation with firm performance. Firm growth has significant positive and negative impact on ROE and TQ respectively for post-reform period. Size of firm is significantly and positively affecting firm performance for both pre-reform and post-reform periods. Firm age is found to be significantly and positively related TQ for both periods. In our study it is also revealed that performance of Engineering, Food & Allied, Fuel & Power, IT, Pharmaceuticals & Chemicals, and Textile industries are statistically and significantly different from Ceramic industry at least at 5% significance level, which is in line with the findings of Wenerfelt and Montgomery (1988), for the post-reform periods. Hence, all hypotheses for control variables are moderately accepted except for TDE.

Table 10: Summary of OLS Regression Analysis for All Samples

This table presents the summary of regression results of different performance measures on board structure and various control variables using a data ranging 2010-2015 except column (c) that excludes only data in 2010 due to abnormal behavior of share price. The t-statistics are presented in parentheses.

	Combined Periods (Pre-and Post-Reform Periods)2010-2015		
Dependent Variables	(a) **ROA**	(b) **ROE**	(c) **TQ**
LNBS	.0069(0.36)	.0160(0.40)	.6771(0.59)
BIND	.00087(0.75)	.0016(0.67)	6.4089*(1.87)
CEOD	-.0867***(-4.96)	-.1622***(-4.43)	-.6457206(-0.55)
DOWN	.1814***(7.65)	.3828***(7.71)	3.5104**(2.49)
DE	-.0635***(-4.28)	-.1375***(-4.42)	-1.0243(-1.13)
TDE	-.0144**(-2.38)	.0337***(2.66)	-.18127(-0.51)
GR	-.0017(-0.11)	.0038(0.12)	1.00305(1.08)
SIZE	-.0001(-0.04)	.0003(0.04)	-.0427(-0.18)
AGE	.0039(0.48)	.0054(0.31)	1.2169**(2.49)
Ceramics	-.0261(-1.15)	-.0395(-0.83)	-1.5035(-1.14)
Engineering	.0106(0.60)	.0452(1.21)	-5.0332***(-4.78)
Food & Allied	.1341***(6.71)	.3310***(7.91)	-4.1094***(-3.48)
Fuel & Power	.0364*(1.76)	.0444(1.02)	-4.5381***(-3.66)
IT	-.0271(-1.07)	-.0144(-0.27)	-4.7091***(-3.14)
Pharmaceuticals & Chemicals	.0674***(3.71)	.1406***(3.70)	-4.1257***(-3.85)
Textile	-.0269(-1.48)	-.0291(-0.76)	-5.1475***(-4.80)
Constant	.0138(0.14)	-.0863(-0.43)	.2834(0.05)
F-Statistic	15.18***	16.12***	4.69***
Adjt. R^2	0.4576	0.4735	0.2087

Similarly in table 10, evidence from combined sample observations reveals a significant positive relationship between board independence and TQ. The CEO duality is also found to be significantly and negatively associated with ROA and ROE. Board size is not found to have any significant relation with firm performance.

5. Conclusion

This study attempted to investigate how the acting in compliance with changes in internal corporate governance mechanisms issued by BSEC in 2012 stimulates firm performance in Bangladesh. Data collected from the annual report of 45 listed companies during 2010 to 2015 have been analyzed by OLS regression model after satisfying endogeneity and over-identification tests as well as Hausman test.

Results show that larger number of directors on board is placing a substantial barrier in the road of effective corporate management as it is found to have negative impact on firm performance during the post-reform periods of CGN. The findings also strongly suggest that greater proportion of independent directors on the board significantly assists the firms to improving performance during the post-reform periods, implying that significant proportion of independent directors on the board- 20 percent of board members to be filled up with independent directors (CGN-2012) - empowers them to raise voice against inside directors or managers while they are entertaining agency problems. In addition, it helps the board keep close eyes on management which in turn deter the managers from generating any agency problem. These results suggest that complying with revised CGN 2012 announced by BSEC has been improved firm performance significantly in Bangladesh. Whereas, confirming agency theory, CEO duality is found significant in making a negative influence on all accounting based performance measures for both pre-reform and post-reform periods, except for the market based performance measure of TQ, which implies that it is strongly functioning as a driving force behind the conflict between management and board of listed firms in Bangladesh.

Control variables such as directors' ownership, total liabilities to total equity, long term debt to total equity, firm growth, firm size, and firm age are also found to have significant explanatory power over at least one of the three measures of firm performance during the post-reform period of CGN. Results also reveal that firm performance is significantly different across industries in Bangladesh. Overall, this study produces an insight to the policy makers, researchers, governments, and those who are concerned for further development of corporate governance mechanisms to bring its practices in Bangladesh to international best practices.

Nonetheless, the limitations of this study can open the door of opportunity for further research work in this area. This study used only the three measures of board structure in defining internal corporate governance mechanisms; the other definitions of board composition could be used in future study to examine the impact of internal corporate governance on firm performance. In addition, the companies those are maintaining annual reports in e-format in their respective websites have only been used in this study as sample, hence increasing the sample size by taking into account remaining companies could improve reliability of the findings of further studies.

References

Adams, RB & Ferreira, D 2007, 'A Theory of Friendly Boards', *Journal of Finance, Vol. 62, No. 1, Pp. 217–250.*

Agrawal, A & Knoeber, CR 1996, 'Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders', *Journal of Financial and Quantitative Analysis, Vol. 31, No. 3, Pp. 377–97*.

Aoki, M 1995, 'Controlling Insider Control: Issues of Corporate Governance in Transition Economies', Aoki, M. and Kim, H. K. eds., *Corporate Governance in Transitional Economies: Insider Control and the Role of Banks*, World Bank Economic Development Institute.

Asian Development Bank 2000,*Corporate Governance and Finance in East Asia, A Study of Indonesia, Republic of Korea, Malaysia, Philippines and Thailand, A Consolidated Report,* Vol.1, Manila: The Asian Development Bank.

Baltagi, BH 2005, *Econometric Analysis of Panel Data,* 3rdedn, John Wiley & Sons Inc., New York.

Barnhart, S & Rosenstein, S 1998, 'Board Composition, Managerial Ownership, and Firm Performance: An Empirical Analysis', *The Financial Review*, *Vol.33, No.4, Pp.1-16.*

Bhagat, S & Black, B 2002, 'The Non-correlation between Board Independence and Long-term Firm Performance', *Journal of Corporation Law, Vol. 27, No. 2, Pp. 231–273.*

Bhasa, MP 2004, 'Global Corporate Governance: Debates and Challenges, *Corporate Governance', Vol. 4, No. 2, Pp. 5-17*.

Bose, TK, Uddin, MR & Islam, MW 2014, 'Measuring and Comparing the Efficiency of Dhaka Stock Exchange and Chittagong Stock Exchange'*, International Journal of Scientific and Research Publications, Vol. 4, No. 3, Pp.1-14.*

Carter, DA, Simkins, BJ & Simpson, WG 2003, 'Corporate governance, board diversity, and firm value', *Financial Review'*, *Vol. 38, Pp. 33–53*.

Chaterjee, S & Price, B 1991, *Regression Analysis by Example,*2ndedn, John Wiley and Sons, New York.

Chen, CW, Lin, JB & Yi, B 2008,'CEO duality and firm performance: An endogenous issue', *Corporate Ownership and Control*, *Vol. 6, No. 1, Pp. 58-65.*

Cheng, S 2008, 'Board size and the variability of corporate performance', *Journal of Financial Economics*, Vol. 87, No. 1, Pp.157-76.

Coles, JL, Daniel, ND & Naveen, L 2008, 'Boards: Does one size fit all?,' *Journal of Financial Economics*, *Vol. 87, Pp. 329-356*.

Daily, CM & Dalton, DR1992, 'The Relationship between Governance Structure and Corporate Performance in Entrepreneurial Firms', *Journal of Business Venturing*, *Vol. 7, No. 5, Pp. 375–386*.

Daily, CM & Dalton, DR1994, 'Bankruptcy and corporate governance: The impact of board composition and structure', *Academy of Management Journal*, *Vol. 37, Pp. 1603–1617.*

Dalton, D, Daily, C, Johnson, J & Ellstrand, A 1999, 'Number of directors and financial performance: A meta-analysis', *Academy of Management Journal*, *Vol. 42, Pp. 674-686.*

Dalton, DR & Kesner, IF 1987, 'Composition and CEO duality in boards of directors: An inter- national perspective', *Journal of International Business Studies*, Fall, Pp. 33–42.

Davis, JH, Schoorman, FD & Donaldson, L 1997, 'Towards a Stewardship Theory of Management', *Academy of Management Review, Vol. 22, No. 1, Pp. 20-47.*

Denis, DK& McConnell, JK 2003, 'International Corporate Governance', *Journal of Financial and Quantitative Analysis, Vol.* 38, *No. 1, Pp. 1-36*.

Donaldson, L1990, 'The Ethereal Hand: Organizational Economics and Management Theory', *Academy of Management Review*, *Vol. 15, No. 3, Pp. 369–381.*

Donaldson, L & Davis, JH 1991, 'Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns', *Australian Journal of Management*, *Vol. 16, No. 1, Pp. 49–64.*

Fama, EF 1980, 'Agency Problems and the Theory of the Firm', *Journal of Political Economy*, *Vol. 88, Pp. 288–307*.

Fama, EF & Jensen, MC 1983, 'Separation of Ownership and Control', *Journal of Law and Economics*, *Vol. 26, Pp. 301–325*.

Fields, MA & Keys, PY 2003, 'The Emergence of Corporate Governance from Wall St. to Main St.: Outside Directors, Board Diversity and Earnings Management, and Managerial Incentive to Bear Risk', *The Financial Review, Vol. 38, No. 1, Pp. 1-24*.

Forbes, D & Milliken, F 1999, 'Cognition and corporate governance: Understanding boards of directors as strategic decision making groups', *Academy of Management Review, Vol. 24, Pp. 489- 505*.

Greene, WH 2003, '*Econometric Analysis'*, 5thedn, Pearson Education Inc.

Han, KC & Suk, DY 1998, 'The effect of ownership structure on firm performance: additional evidence', *Review of Financial Economics, Vol. 7, No. 2, Pp. 143-55*.

Hermalin, BE & Weisbach, MS 1991,'The Effects of Board Composition and Direct Incentives on Firm Performance', *Financial Management*, *Vol. 20, No. 4, Pp. 101-12.*

Hermalin, BE & Weisbach, MS 2003, 'Board of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature', *Economic Policy Review, Vol. 9,No.1, Pp. 7-26*.

Hossain, M, Prevost, AK, & Rao, RP 2001, 'Corporate governance in New Zealand: The effect of the 1993 Companies Act on the relation between board composition and firm performance' *Pacific-Basin Finance Journal, Vol. 9, Pp. 119–145*.

Jensen, MC 1986, 'Agency Costs of Free Cash Flow, Corporate Finance and Takeovers', *American Economic Review, Vol. 76, No.2, Pp. 323-329*.

Jensen, MC 1993, 'The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems', *Journal of Finance*, *Vol. 48, No.3, Pp. 831–880*.

Jensen, MC & Meckling, WH 1976, 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics*, *Vol. 3, Pp. 305–360.*

Jonsson, EI 2005, 'The Role Model of the Board: A Preliminary Study of the Roles of Icelandic Boards', Corporate *Governance: An International Review*, *Vol. 13, No.5, Pp. 710-717.*

Kiel, GC & Nicholson, GJ 2003, 'Board Composition and Corporate Performance: How the Australian Experience informs contrasting Theories of Corporate Governance', *Corporate Governance: An International Review*, *Vol. 11, No.3, Pp. 189 - 205.*

Kumar, J 2003, 'Does Ownership Structure Influence Firm Value? Evidence from India', EFMA 2004 Basel Meeting Paper, viewed 16 July 2016,
<http://econwpa.repec.org/eps/fin/papers/0406/0406008.pdf>.

Leblanc, RW 2004, 'What's wrong with corporate governance: a note', *Corporate Governance, Vol. 12, No.4, Pp. 436- 441*.

Murtuza, HM 2016, 'Sponsor-directors' minimum shareholding: BSEC order remains on paper since Nov 2011', The New Age, viewed 5 August 2016,
<http://archive.newagebd.net/236312/sponsor-directors-minimum-shareholding/>.

Prowse, SD 1996, 'Corporate Finance in International Perspective: Legal and Regulatory Influences on Financial System Development', *Economic Review*, *Vol. 3, Pp.2-15.*

Rashid, A 2009, 'Board Composition, Board Leadership Structure and Firm Performance: Evidence from Bangladesh', *The Accounting and Finance Association of Australia and New Zealand (AFAANZ) Annual Conference*, 5-7th July, Adelaide, South Australia.

Rashid, A & Lodh, SC 2008, 'The Influence of Ownership Structures and Board Practices on Corporate Social Disclosures in Bangladesh', *Research in Accounting in Emerging Economies*, *Vol. 8, Pp. 211-237*.

Rashid, A, Zoysa, AD, Lodh, S & Rudkin, K 2010, 'Board Composition and Firm Performance: Evidence from Bangladesh', *Australasian Accounting Business and Finance Journal, Vol.4, No.1, Pp. 76-95.*

Tricker, R 1994, '*International Corporate Governance',* Singapore: Prentice-Hall.

Wang, D & Ong, CH 2005, 'Board structure, process and performance: Evidence from public listed companies in Singapore', *Corporate Governance, Vol. 13, No.2, Pp. 277–290.*

Wenerfelt, B & Montgomery, CA 1988, 'Tobin's q and the importance of focus in firm performance', *American Economic Review*, *Vol. 78, Pp. 246–250*.

World Bank, 1999, 'Corporate Governance: A Framework for Implementation-Overview', The World Bank, Washington D.C.

Yammeesri, J & Lodh, SC 2004, 'Is Family Ownership a Pain or Gain to Firm Performance?, '*Journal of American Academy of Business, Vol. 4, No.1-2, Pp. 263- 270.*

Yermack, D 1996, 'Higher Market Valuation of Companies with a Small Board of Directors', *Journal of Financial Economics*, *Vol. 40, No.2, Pp. 185–211*.