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AN ANALYSIS OF CODIFIED CORPORATE GOVERNANCE PRACTICES IN THE BANKING INDUSTRY: THE CASE STUDY OF BANGLADESH

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[3]**Abstract**

Introducing a well-designed system of corporate governance is considered an effective tool to ensure the stability and resilience of a banking system. It was in 2006 when Bangladesh initiated its first corporate governance code (CG code). Despite trying to meet the code of enhancing the internal monitoring mechanisms and transparency in governance, it is apparent that the quality in bank credit portfolios continuously deteriorated. This paper aims to empirically analyze the impact of adopting the CG code on performance for eight years (2010–2017) of 21 major commercial banks of Bangladesh. In this case study, we suggest that the CG code may have given the Bangladeshi commercial banks an ill-incentive for the reduction of executive directors under the pressure of meeting a guideline to increase the ratio of independent directors. This incentive structure had a negative impact on bank performance during the period. Another finding is that the fundamental structure of ownership and control by sponsor directors remained unchanged during the period. This structure of maintaining the control of power by a group with its vested interest may have hindered the effectiveness of the CG code in Bangladesh. We suggest that the agenda of CG practices should go together with a policy for mitigating a potential bias under the ownership concentration because any attempt of adopting codified CG practices would be futile under the fundamental structure in Bangladesh.

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Introduction

Monitoring bank performance calls for significant attentions from the public as well as the banking regulators since banks are, in general, critical institutions as financial intermediaries in most economies (Stankeviciene et al., 2012).There is little doubt that any disturbance in the banking sector could severely paralyze the whole economy in Bangladesh, too (Uddin & Bristy, 2014). Bangladesh is a large and heavily densely populated country in South Asia. Economic backwardness in the world's eighth populous country (around 165 million) is attributable to its poor performance – low level of financial deepening and high rate of non-performing loans (table 1-1) - in the banking industry. Some surveys suggest that there is a significant relationship between corporate accrual and behavior of corporate managers. Information asymmetry often leads to managerial opportunism, therefore the effectiveness of governance depends on how to mitigate opportunistic behavior through monitoring the mindset of corporate management (Hasan et al., 2014). Some argue that ensuring the independence of banking supervisors, the independence from political influences and the strong legal endorsement for the authority of the supervisors is the key challenge in good governance in the banking industry in Bangladesh (Kamal et al., 2007).

The corporate governance code (CG code) has been developed to protect shareholders' interest through a system of governance for mitigating managerial opportunism. Ultimately, a better system of governance is expected to improve corporate performance. In the same way, it is believed that the practices of corporate governance in Bangladeshi banks have been contributing to the bank performance. However, some studies find that there is no significant impact in the banking sector of Bangladesh. For example, Islam et al. (2015) analyze the impact of adopting a CG code on bank performance and conclude that a codified corporate governance does not always lead to better financial performance in Bangladeshi banks. In fact, we can see the increasing trend of non-performing loans (NPL) accumulated by Bangladeshi banks for the last eight years (Table 1).

The banking industry in Bangladesh was formed by the Banking Companies Act 1991 (amended in 2013) and regulated by the Bangladesh Bank as the central bank. Still, State owned commercial banks (SOCBs) and Specialized Development Banks (SDBs) are dually supervised by the Ministry of Finance (MoF) and Bangladesh Bank. On the other hand, we should note the role and scope of the Bangladesh Securities and Exchange Commission (BSEC) by which all the listed companies in the exchange are monitored and supervised, because BSEC is responsible for issuing the corporate governance guidelines for the listed companies including the banks that are listed in the stock exchange. As a result, we can see plural supervisory authorities which are engaged in corporate governance in the banking industry of Bangladesh.

As Asian Development Bank (2003) points out, the listed companies in Bangladesh are not free from the prototype of family business governance. There is a loophole in the appointment of independent directors in the board. It is observed that most of the independent directors in the private commercial banks are from the relatives or the peers circle of the sponsor directors and the executive directors. Independent directors in the SOCBs are nominated by MoF. Seemingly, this practice may have caused a serious conflict of interest which undermines the objectives of appointing independent directors for the sake of the interest of general shareholders and investors. This conflict of interest may lead to weak management in credit risk, resulting in the drain of financial resources from the productive investments. In the case of SOCBs, this can lead to the cost of fiscal recapitalization (IMF, 2015).

Table 1: Gross Non-Performing Loans (NPL) Ratio (Gross NPL as a percentage of Total loans outstanding)

Banks Type	Dec 2010	Dec 2011	Dec 2012	Dec 2013	Dec 2014	Dec 2015	Dec 2016	Dec 2017
State Owned Commercial Banks	15.7	11.3	23.9	18.8	22.4	21.5	25.1	26.5
Private Commercial Banks	3.2	2.9	4.6	4.5	5	4.8	4.6	4.9
Foreign Commercial Banks	3	3	3.5	5.5	7.3	7.8	9.6	7.0
Specialized Development Banks	24.2	24.6	26.8	34.7	32.8	23.2	26.0	23.4
Overall	**7.1**	**6.2**	**10**	**8.9**	**9.7**	**8.8**	**9.2**	**9.3**

Source: Bangladesh Bank Annual Report 2014-15, Financial Stability Report 2017

This paper aims to review the relationship between codified corporate governance practices in the banking sector of Bangladesh and its impact on bank performance. It also aims to propose a policy option towards the improvement in the newly revised code in 2018. The discussion in the paper is structured as follows. We overview the theoretical discussion on corporate governance and the evolution of its code in the next section. Research questions and hypotheses are explained in section three. Section four briefly describes the data and methods, then analyses the empirical results. Concluding remarks are in the last section.

Theoretical discussion on corporate governance and evolution of its code

Corporate governance

One of the ingredients in the survival of modern corporations is to separate ownership and managerial control (Fama, 1980). Survival of organizational forms largely depends on the controlling of 'agency problem' (Fama & Jensen, 1983a). Basically, corporate governance deals with the agency problem to legally protect the investors' rights under the separation of management and finance (Shleifer & Vishny, 1997). Many scholars point out the importance of designing a good structure of governance on corporations. Chen et al. (2012) suggest that a well-designed structure of corporate governance would help mitigate the ill-influence of the agency problem on potential shirking by managers. Halburd (2014) insists that corporate governance is beyond mere code compliance and box ticking. Bicksler (2003) points out that good corporate governance ensuring an effective level of corporate transparency would improve the function of the real economy, corporate resource allocation and security market efficiency. Garratt (2015) explains that the building blocks of corporate governance are considered accountability, probity and transparency, and four parties such as owners, directors, legislators and regulators are jointly responsible for effective corporate governance. Bebchuk et al. (2009) point out that corporate governance largely influences the factors that affect a firm's value. William (2014) argues that good governance policies would contribute to effective operations in corporations.

Corporate governance theories

Conventional corporate governance theories, which can be broadly classified into three categories; agency theory, stewardship theory and stakeholder theory (Sheila et. al, 2013), have greatly contributed to the academic debate on the design of corporate governance.

Agency theory

Scholars in agency theory are basically concerned about the principal-agent structure between owners and managers (Alchian & Demsetz, 1972), and about the agency cost that arises with separation of ownership and control (Jensen & Meckling, 1976). Several methods such as the installation of a code of corporate practices (Jensen & Meckling, 1976), an executive compensation system (Conyon & Schwalbach, 2000), and the appointment of independent directors to the board (Rashid, 2015) are argued to minimize the agency cost.

Transaction cost theory

The work of Williamson (1984) largely contributes to identify the concept of 'transaction cost' as a driver of the agency problem. Williamson (1984) advocates that it is intrinsically difficult and costly to monitor all the activities by managers. In order to reduce the transaction cost of monitoring managers, one option is that they should be invited to the board, such as a two-tier board system which would contribute to reducing the managers' opportunistic behavior (Williamson,1984).

Stewardship theory

Stewardship theory emphasizes the collectiveness in corporations to achieve the organizational goals, and proposes that managerial incentives be aligned with the long term performance of firms such as offering managers stock options. Stakeholder theory is concerned about the parties as stakeholders that are involved directly or indirectly with a firm's operation, such as creditors, clients, governmental and local community groups. The stakeholders are considered a value creating factor for corporations and hence their participation in the governance is expected in the theory. According to Jensen (2002), the stakeholder theory of governance would maximize the long-term value of the firm by combining the

interest of stakeholder groups in the board to achieve the firm's objectives. In this paper, we are mainly concerned with the agency cost of delegating the management of a firm's operations to the directors or managers as well as the transaction cost of monitoring them to mitigate their opportunistic behavior.

Evolution of the corporate governance code in Bangladesh

Introduction and adoption of a corporate governance 'code' is an instrument for designing a good system of corporate governance. Many empirical studies including Geis (2016), Aras (2015), Okaro et al., (2015), Haji (2014), Chen & Zhang (2014) find a positive impact on a firm's earning by introducing the CG code.

The Asian financial crisis of 1997 was an alarming call to the major Asian economies to develop corporate governance guidelines, enact required laws and regulations. Those countries tailored their CG code in line with OECD principles. In Bangladesh, the issue of corporate governance was raised in the early 2000s after the capital market collapse in 1996. In 2004, the Bangladesh Enterprise Institute (BEI) announced the first governance code as a prescription. But as this institute had no regulatory authority, there was no obligation for the listed companies to comply with the BEI code. Subsequently BSEC issued the governance code in 2006. This was the first step to standardize the listed companies' corporate governance system on a 'comply or explain' basis. Dhaka Stock Exchange general index (DGEN) fell sharply to 7,118 on January 11, 2011 from 8,912 on December 05, 2010 and consequently thousands of investors suffered capital losses within one month. After the continuous outcry from various stakeholders in the market, BSEC revised the corporate governance code and made it work on a 'comply' basis. The evolution of the corporate governance code in Bangladesh is shown in Table 2.

Research question and hypothesis development

More than one decade has passed since the CG code was introduced and adopted in the banking industry. All the banking companies in Bangladesh have a unitary board (one tier board comprised of shareholder directors[1] and independent directors) and all the private commercial banks (except fourth generation banks, which got licensed in 2013) are listed in the stock exchanges. Boards of directors are to be elected in the annual general meeting by the shareholders for their assignment term of three years. Meanwhile, banking sector performance was not rosy in the last several years (2010-2017). Table 3 shows the NPL, ROA and ROE of various types of Bangladeshi banks.

The above mentioned realities led us to ask; how poorly did the code of corporate governance contribute to the bank performance in the case of Bangladesh? We hypothesize here that;

H_0: There was no relationship between the adoption of the CG code and the bank performance.

In principle, we hypothesize that there existed no statistically significant correlation between them. The rejection of the null hypothesis would suggest that the

1 Shareholder directors' are the directors who are elected by the shareholders in the AGM. Generally, in the Bangladeshi banking industry only the CEO acts as an executive director and the other directors are either shareholder or independent directors.

Table 2: Timeline of evolution of corporate governance in Bangladesh

1996	First capital market scam in Bangladesh
2004	BEI published first governance code
2006	BSEC introduced governance code for all listed companies as "comply or explain" basis.
2010	Bangladesh Bank issued new guidelines for banking company's board of directors and other related governance issues.
2011	Massive market crash in Dhaka Stock Exchange
2012	BSEC revised governance code for all listed companies as a "comply" basis.
2012	Bangladesh Bank revised the guidelines for boards of directors and other governance issues.
2013	Banking companies act of 1991 was amended in line with governance code
2018	BSEC published revised corporate governance code

Source: Prepared by authors based on BSEC various directives regarding corporate governance since 2006-2018

Table 3: Bangladeshi banking sector performance

Type of banks	NPL							
	2010	2011	2012	2013	2014	2015	2016	2017
State Owned Commercial Banks	15.66	11.27	23.87	19.76	22.23	21.46	25.05	26.52
Specialised Banks	24.15	24.55	26.77	26.78	32.81	23.24	26.02	23.39
Private Commercial Banks	3.15	2.95	4.58	4.54	4.98	4.85	4.58	4.87
Foreign Commercial Banks	2.99	2.96	3.53	5.46	7.3	7.77	9.56	7.04
All Banks	7.27	6.12	10.03	8.93	9.69	8.79	9.23	9.31
Type of banks	ROA							
	2010	2011	2012	2013	2014	2015	2016	2017
State Owned Commercial Banks	1.11	1.34	-0.56	0.59	-0.55	-0.04	-0.16	0.21
Specialised Banks	0.19	0.03	0.06	-0.82	-0.68	-1.15	-2.8	-3.49
Private Commercial Banks	2.14	1.59	0.92	0.95	0.99	1	1.03	0.89
Foreign Commercial Banks	2.87	3.24	3.27	2.98	3.38	2.92	2.56	2.24
All Banks	1.78	1.54	0.64	0.88	0.64	0.77	0.68	0.67
Type of banks	ROE							
	2010	2011	2012	2013	2014	2015	2016	2017
State Owned Commercial Banks	18.83	19.66	-11.87	10.93	-13.46	-1.47	-6.02	3.45
Specialised Banks	-3.17	-0.92	-1.06	-12.04	-5.97	-5.79	-6.94	-17.19
Private Commercial Banks	20.94	15.69	10.17	9.76	10.26	10.75	11.09	12.01
Foreign Commercial Banks	16.99	16.99	17.29	16.93	17.29	14.59	13.08	11.31
All Banks	17.02	17.02	8.2	10.8	8.09	10.51	9.42	9.6

Source: Prepared by authors based on Bangladesh Bank Quarterly publication

adoption of the corporate governance code might have had a certain impact on bank performance. If the code was properly addressed by the regulatory authority and duly complied with by the banks, taking into consideration the objective of the code, a certain positive impact on the bank performance would be expected. However, in fact, all types of bank performance went down between 2010 and 2017. If our empirical result cannot accept the null hypothesis, we assume that the adoption of the CG code had a certain impact positive or negative. If we find any significant positive impact by a guideline in the code, for instance, the maintenance of the ratio of independent directors in the board, we would assume that the guideline has given the bank management a certain effective incentive for contributing to the improvement of the performance. On the other hand, if we find any significant negative impact, we would assume that the guideline has given the bank management a certain ill-incentive for deteriorating the performance.

Methods, data and result

We take ROA, ROE, NPL and the cost of funds as the bank performance yardstick whereas board size, audit committee size, representation of independent directors on the board and audit committee, and the shareholding percentage of sponsor directors are considered as the attributes of the CG code compliance. Return on assets (ROA) measures the firm's efficiency to asset turnover whereas Return on Equity (ROE) confirms the firm's profitability in terms of investors return. The percentage of non-performing loans (NPL) is a key measurement that is globally used as a measure of commercial bank performance. In addition, Bangladesh Bank (the central bank) has instructed all scheduled bank to disclose the ROA, ROE, NPL of the last five years in the respective bank's annual report for the better understanding of investors. In this paper we attempt to analyze the corporate governance practices along with bank performance. Many studies including Alam et al. (2011), Sayilgan and Yildirim (2009), Swamy (2013), Zhang et al. (2016) look at ROA, ROE and NPL as the yardstick for measuring bank performance. This research also follows the same methodology as taken by Dao and Dao (2014), which found the positive impact by introduction of the corporate governance code in Malaysia and Vietnam on ROE, ROA of banks in both countries. The financial data relevant to the performance yardstick and the corporate governance attributes are taken from the respective banks' annual reports between 2010 and 2017. As independent directors of SOCBs and SDBs are to be nominated by the government, we exclude these type of banks and analyze only private commercial banks. There are 39 private commercial banks in Bangladesh. Out of them nine banks which are categorized into the 4th generation (see table 4.1), had

Table 4: Population and sample size distribution

Bank Categories as per generation	Population	Sample size	Sample represents the % of population	% of total sample
1st generation	9	6	66%	28.57%
2nd generation	18	12	66%	57.15%
3rd generation	3	3	100%	14.28%
4rth generation *	9	-	-	-
Total	39	21	54%	100%

*4th generation banks started operation at the end of 2013

started operation in 2013. As we consider the data base of the sample banks for the year 2010 to 2017, these nine banks are excluded from the sample size. Moreover, taking into consideration the balance of representation in each bank category, out of the remaining thirty banks, we chose 21. Details of our sample of 21 banks is shown in Table 4. The final sample set consists of 168 observations for 21 banks over eight years. All the economic indicator dataset of the Bangladesh economy was retrieved from the World Bank data base (http://data.worldbank.org/country/bangladesh).

Table 4: Definition of variables

Variables	Definitions
Dependent variables :	
Return on Assets (ROA_{it})	Ratio of net profit after tax to total asset .
Return on Equity (ROE_{it})	Ratio of net profit after tax to total equity capital.
Ratio of NPL loan to total loan (NPL_{it})	Percentage of nonperforming loan to total loan and advances
Cost of fund (COF_{it})	Ratio of total cost of deposit (including administrative expenses) to total weighted average deposit*
Independent variables:	
Board Size(BS_{it})	Log of bank's board size. Board size determines the number of directors in bank's board.
Audit committee size (AS_{it})	Log of bank's audit committee size. Audit committee size determines the number of members in the bank's audit committee.
Ratio of independent director on the board(IB_{it})	A percentage of independent director to total number of directors in the board
Ratio of independent director on audit committee(IA_{it})	A percentage of independent director to total number of directors in the audit committee
Ratio of sponsor director shareholdings in the bank(SS_{it})	Ratio of share owned by sponsor director to total outstanding common stocks.**
Consumer price index (CPI_{it})	CPI refers the price level change in consumers good and services consumed by household and it reflects the inflation or deflation effects on goods and services
Broad money growth rate (BM_{it})	Money supply (M2, M3, M4) growth rate in the economy
Risk premium on lending rate (RP_{it})	The interest rate that obtains after deducting the treasury bills rate from lending rate.
Growth rate of gross domestic product (GDP_{it})	Annual growth rate of GDP of the country
Percentage of personal remittance on GDP (PR_{it})	Proportion of Personal remittance received on GDP

* In computation of the cost of funds banks have to follow the guidelines of Bangladesh Bank. According to BB guidelines the "cost of deposit" include the interest rate of deposit, administrative cost, and cost of capital whereas the "total weighted average deposit"is computed after assigning the weight on each deposit product as per maturity.

**Sponsor directors are the sponsors of the bank who are elected as directors in the AGM.

We consider five well recognized economic indicators like consumer price index (CPI), broad money growth rate, risk premium on lending rate, gross domestic product (GDP) growth rate and personal remittance on GDP in the regression line to check the model's viability in the economic fluctuation of the country. We use Eviews 10 software to run this regression analysis and to conduct a descriptive analysis. We also use SPSS to find the Pearson correlation among the variables.

In this study four variables are considered dependent (i.e. ROA, ROE, the percentage of nonperforming loans to total loans and the cost of funds) whereas the independent variables include the board size, the audit committee size, the ratio of independent director to total board size, the ratio of independent director to audit committee size, the percentage of sponsor directors' shareholding to total shareholding position of the bank, CPI, the broad money growth rate, the risk premium for lending, GDP growth rate and the percentage of personal remittance on the country's GDP. In this study we do not consider any control variables in the model as every bank has to follow the corporate governance guidelines and the sample banks have similarities in the size of assets and the age of maturity. Definition of the variables are listed in Table 4.

The core regression model is specified as follows:

$$Y_{it} = \alpha + x_{it}\ \beta\ + \mu_{it}$$

Where, *i*=1,……126, *t*=1,……8

where *i* denotes the cross-section dimension and *t* indicates the time dimension, is the firm *i*'s performance measures at time *t*, $\mathbf{x}_{it}$ is a 1 x K vector of observations on K, β is a K x 1 vector of parameters explanatory variables for the *i*th firm in the *t*th period, μ_{it} is a disturbance term and is defined as

$$\mu_{it} = \mu_i + V_t$$

Where μ_i denotes the unobservable individual effect and V_t denotes the remainder disturbance.

Pooled least square method was used to estimate the coefficients. The following four regression models are used to analyze the effects of corporate governance attributes on the bank performance.

$$ROA_{it} = \beta_o + \beta_1 BS_{it} + \beta_2 AS_{it} + \beta_3 IB_{it} + \beta_4 IA_{it} + \beta_5 SS_{it} + \beta_6 CPI_{it} + \beta_7 BM_{it} + \beta_8 RP_{it} + \beta_9 GDP_{it} + \beta_{10} PR_{it} + \varepsilon_{it} \quad \text{(i)}$$

$$ROE_{it} = \beta_o + \beta_1 BS_{it} + \beta_2 AS_{it} + \beta_3 IB_{it} + \beta_4 IA_{it} + \beta_5 SS_{it} + \beta_6 CPI_{it} + \beta_7 BM_{it} + \beta_8 RP_{it} + \beta_9 GDP_{it} + \beta_{10} PR_{it} + \varepsilon_{it} \quad \text{(ii)}$$

$$NPL_{it} = \beta_o + \beta_1 BS_{it} + \beta_2 AS_{it} + \beta_3 IB_{it} + \beta_4 IA_{it} + \beta_5 SS_{it} + \beta_6 CPI_{it} + \beta_7 BM_{it} + \beta_8 RP_{it} + \beta_9 GDP_{it} + \beta_{10} PR_{it} + \varepsilon_{it} \quad \text{(iii)}$$

$$COF_{it} = \beta_o + \beta_1 BS_{it} + \beta_2 AS_{it} + \beta_3 IB_{it} + \beta_4 IA_{it} + \beta_5 SS_{it} + \beta_6 CPI_{it} + \beta_7 BM_{it} + \beta_8 RP_{it} + \beta_9 GDP_{it} + \beta_{10} PR_{it} + \varepsilon_{it} \quad \text{(iv)}$$

Where

ROA_{it} = Return on assets of bank *i* at time *t*,

ROE_{it} = Return on equity of bank *i* at time *t*,

NPL_{it} = Percentage of nonperforming loan to total loan and advances of bank *i* at time *t*,

COF_{it} = Ratio of total cost of deposit (including administrative expenses) to total weighted Average deposit of bank *i* at time *t*,

BS_{it} = Board size of bank *i* at time *t*,

AS_{it} = Audit committee size of bank *i* at time *t*,

IB_{it} = Ratio of independent directors to board size of bank *i* at time *t*,

IA_{it} = Ratio of independent directors to audit committee size of bank *i* at time *t*,

SS_{it} = Sponsor director shareholding ratio of bank *i* at time *t*,

CPI_{it} = Consumer price index of the country for bank *i* at time *t*,

BM_{it} = Broad money growth rate of the country for bank *i* at time *t*,

RP_{it} = Risk premium on lending rate of the country for bank *i* at time *t*,

GDP_{it} = GDP growth rate of the country for bank *i* at time *t*,

PR_{it} = Personal remittance as percentage of GDP of the country for bank *i* at time *t*,

$\beta_1 - \beta_{10}$ = coefficients of the related variables,

ε_{it} = error term of firm *i* at time *t*.

One limitation of this research is to estimate the time lag impact. Some indicators such as NPL and other economic indices may have a cumulative effect upon a period longer than five years in 2013-2017 as our target period. On the other hand, we observe that the regulatory

authorities retain the effective power to discipline the regulated banks and to make them comply with the CG code in Bangladesh. The regulators expect an immediate impact on the bank performance. In this study we assume that the relatively immediate impact is expected if there exists any impact.

Empirical result

The descriptive statistics of all the dependent and independent variables that are used in this study are shown in Table 5. In the descriptive statistics it shows that the mean of return on assets, return on equity, nonperforming loans and cost of funds (COF) were 1.37%, 13.88%, 4.44% and 8.58%, respectively. As shown in Table 6 which calculates the mean of variables before and after the implementation of the CG code, apparently ROA, ROE and asset quality were downgraded after the implementation. More specifically, ROA and ROE decreased in 2013-2017 comparing to 2010-2012 and NPL increased during the same period. In 2010-2012 the mean of ROA, ROE and NPL were 1.70, 17.31 and 3.51, respectively whereas in 2013-2017 it stood at 1.17, 11.82 and 5, respectively (Table 6). The mean of cost of funds in 2011-2012 was 9.27 whereas it was reduced to 8.61 in 2013-2017. The reduction of cost of funds enhanced the profitability by reducing cost although cost of funds depends on several macro-economic and governmental policies including the efficiency of the board of directors. Among CG attributes we found positive correlation with COF and BS, AS and negative with IB, IA, SS (Table 7). While analyzing the annual reports of banks we found during the period 2013-2017 the central bank fixed the spread which led to the reduction of the deposit rate and the administrative cost of banks also was decreased during the period, which led to decreasing the COF. However except COF, we observe that the overall performance of the banks deteriorated after the code was adopted in 2012.

The mean of independent directors on the board size was 16.28% over the period 2010-2017 (Table 6). The 2012 CG code required the banks to meet the ratio of independent directors to the board size which was one-fifth at the minimum. This requirement was not obligatory for the year 2010 - 2011. Upon the dataset including the year 2010 and 2011, the mean ratio of independent directors to the total board size was shown as 16.28% which showed less than the required minimum ratio. On the other hand, the ratio of independent directors in the audit committee was 35.60%. The mean ratio of sponsor directors was 40.22% in 2010-2017, which is assumed that sponsor directors kept a certain stronger voting power in the board.

Table 5 Descriptive statistics

	AS	BM	BS	COF	CPI	GDP	IA	IB	NPL	PR	ROA	ROE	RP	SS
Mean	0.616293	0.163463	1.102984	0.085781	1.31575	0.06445	0.356052	0.162878	0.044419	0.08305	0.013695	0.138758	0.057325	0.413675
Median	0.60206	0.1615	1.113943	0.08415	1.3086	0.0649	0.4	0.151923	0.0439	0.08955	0.0111	0.12915	0.0585	0.4143
Maximum	0.778151	0.2107	1.39794	0.1367	1.6035	0.0728	0.75	0.6	0.0973	0.1059	0.0941	0.3622	0.0944	0.87
Minimum	0.30103	0.1373	0.69897	0.0408	1	0.0557	0	0	0.009453	0.0516	0.0035	0.0013	0.0189	0.1098
Std. Dev.	0.099767	0.020963	0.154784	0.019506	0.205906	0.00533	0.190269	0.112968	0.016703	0.017189	0.010784	0.062498	0.022813	0.152372
Skewness	-0.54531	1.111404	-0.66974	0.037824	0.02739	0.057085	-0.19738	0.814733	0.327398	-0.65496	4.956684	1.119686	-0.13959	0.89354
Kurtosis	2.080329	3.634478	2.806557	2.853706	1.732272	2.077691	2.76028	3.835668	3.155832	2.202084	35.85836	4.793607	2.189578	5.015127
Observations	168	168	168	168	168	168	168	168	168	168	168	168	168	168

Table 6. Year-wise mean of variables

Variables	2010	2011	2012	Mean (2010-2012)	2013	2014	2015	2016	2017	Mean (2013-2017)	Mean (2010-2017)
ROA	2.43	1.64	1.04	1.70	1.09	1.1	1.01	1.35	1.3	1.17	1.37
ROE	24.15	16.14	11.63	17.31	12.32	12.2	11.37	11.83	11.37	11.818	13.88
NPL	2.78	2.9	4.85	3.51	4.89	5.37	4.98	4.8	4.96	5.00	4.44
COF	8.05	9.49	10.28	9.27	9.88	9.05	8.15	7.15	6.84	8.214	8.61
BS	14.71	15.14	13.14	14.33	13	12.9	12.85	13	12.85	12.92	13.45
AS	3.33	4.19	4.38	3.97	4.52	4.47	4.42	4.42	4.19	4.404	4.24
IB	4.9	5.74	13.93	8.19	19.95	21.83	21.88	21.21	20.8	21.134	16.28
IA	18.97	18.57	27.69	21.74	39.52	44.68	44.84	45.08	45.48	43.92	35.60
SS	41	39.32	40.23	40.18	40.24	40.5	39.6	40.86	39.98	40.236	40.22

Results of the Pearson correlation coefficient are presented in Table 7. It is observed here that the cross correlation terms for the dependent variables are relatively small and thus there is no more concern for multi co-linearity among the dependent variables.

Details of empirical results of the four models are provided in Appendixes A, B, C and D. We use the fixed-effect model to interpret the results. Our redundant fixed effect test also accepts the null hypothesis that the fixed-effect model is appropriate for all our models (since cross section F is <0.05). In the fixed-effect model the probability of the f test (prob.>F) of all regression models are less than .005 (<0.05) which validates the model acceptability.

The result reported in Appendix A shows the effect of the independent variables with ROA. Among the attributes of the CG code, the audit committee size and the ratio of independent directors to board size and the sponsor directors shareholding ratio are negatively related with ROA and only the audit committee size is statistically significant whereas the board size and the ratio of independent directors to audit committee are positively correlated and only the board size is statistically significant with ROA. On the other hand, other variables show the relationship either positively or negatively with the dependent variable but all of them are statistically insignificant.

The result presented in Appendix B indicates that the board size, the audit committee size and the independent director ratio on audit committee size are positively related with ROE but only the board size is statistically significant. The Ratio of independent director to board size and the sponsor directors shareholding ratio are negatively related with ROE. We note here that the relation with the sponsor directors shareholding ratio is statistically significant. Economic indicators show both positive and negative relationship with ROE, for instance, the relationship with CPI, GDP have a negative significant relation and BM has a positive significant relation.

Appendix C shows that among the corporate governance attributes, such as the audit committee size and the independent director ratio on audit committee size and the sponsor directors shareholding ratio are positively related with NPL and the relation of IA and SS are significant. BS and IB have a negatively significant relationship with NPL. Among the economic indicators, only GDP, RP and PR have a negative relationship with the dependent variable and CPI has a significant positive relationship.

Finally, as for the relation with COF and CG attributes, only AS and IA have significant positive and negative

Table 7. Pearson correlation coefficient among variables

		ROA	ROE	NPL	COF	CPI	BM	RP	GDP	PR	BS	AS	IB	IA	SS
ROA	Pearson Correlation	1	.573**	-.348**	-.171*	-.231**	.349**	.221**	-.182*	0.052	0.044	-.279**	-.166*	-0.084	0.008
	Sig. (2-tailed)		0.000	0.000	0.027	0.003	0.000	0.004	0.019	0.506	0.572	0.000	0.031	0.279	0.919
ROE	Pearson Correlation	.573**	1	-.478**	-0.102	-.485**	.589**	.373**	-.435**	.234**	0.038	-.319**	-.291**	-.269**	.241**
	Sig. (2-tailed)	0.000		0.000	0.190	0.000	0.000	0.000	0.000	0.002	0.627	0.000	0.000	0.000	0.002
NPL	Pearson Correlation	-.348**	-.478**	1	-.219**	.406**	-.424**	-.389**	.231**	-.195*	-.183*	0.130	.306**	.327**	-0.016
	Sig. (2-tailed)	0.000	0.000		0.004	0.000	0.000	0.000	0.003	0.012	0.018	0.092	0.000	0.000	0.833
COF	Pearson Correlation	-.171*	-0.102	-.219**	1	-.386**	0.051	0.052	-.305**	.533**	.211**	.199**	-.244**	-.188*	-0.037
	Sig. (2-tailed)	0.027	0.190	0.004		0.000	0.513	0.506	0.000	0.000	0.006	0.010	0.001	0.015	0.635
CPI	Pearson Correlation	-.231**	-.485**	.406**	-.386**	1	-.726**	-.464**	.806**	-.880**	-0.139	.225**	.510**	.532**	-0.036
	Sig. (2-tailed)	0.003	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.072	0.003	0.000	0.000	0.643
BM	Pearson Correlation	.349**	.589**	-.424**	0.051	-.726**	1	.558**	-.591**	.481**	0.131	-.325**	-.473**	-.448**	0.033
	Sig. (2-tailed)	0.000	0.000	0.000	0.513	0.000		0.000	0.000	0.000	0.091	0.000	0.000	0.000	0.673
RP	Pearson Correlation	.221**	.373**	-.389**	0.052	-.464**	.558**	1	-.400**	.281**	0.126	-0.135	-.333**	-.298**	0.014
	Sig. (2-tailed)	0.004	0.000	0.000	0.506	0.000	0.000		0.000	0.000	0.103	0.080	0.000	0.000	0.860
GDP	Pearson Correlation	-.182*	-.435**	.231**	-.305**	.806**	-.591**	-.400**	1	-.749**	-0.077	.187*	.282**	.298**	-0.045
	Sig. (2-tailed)	0.019	0.000	0.003	0.000	0.000	0.000	0.000		0.000	0.318	0.015	0.000	0.000	0.559
PR	Pearson Correlation	0.052	.234**	-.195*	.533**	-.880**	.481**	.281**	-.749**	1	0.083	-0.061	-.331**	-.398**	0.038
	Sig. (2-tailed)	0.506	0.002	0.012	0.000	0.000	0.000	0.000	0.000		0.286	0.436	0.000	0.000	0.623
BS	Pearson Correlation	0.044	0.038	-.183*	.211**	-0.139	0.131	0.126	-0.077	0.083	1	.389**	-.548**	-.333**	-0.146
	Sig. (2-tailed)	0.572	0.627	0.018	0.006	0.072	0.091	0.103	0.318	0.286		0.000	0.000	0.000	0.059
AS	Pearson Correlation	-.279**	-.319**	0.130	.199**	.225**	-.325**	-0.135	.187*	-0.061	.389**	1	-0.109	-0.148	-.402**
	Sig. (2-tailed)	0.000	0.000	0.092	0.010	0.003	0.000	0.080	0.015	0.436	0.000		0.160	0.056	0.000
IB	Pearson Correlation	-.166*	-.291**	.306**	-.244**	.510**	-.473**	-.333**	.282**	-.331**	-.548**	-0.109	1	.766**	.257**
	Sig. (2-tailed)	0.031	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.160		0.000	0.001
IA	Pearson Correlation	-0.084	-.269**	.327**	-.188*	.532**	-.448**	-.298**	.298**	-.398**	-.333**	-0.148	.766**	1	.216**
	Sig. (2-tailed)	0.279	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.056	0.000		0.005
SS	Pearson Correlation	0.008	.241**	-0.016	-0.037	-0.036	0.033	0.014	-0.045	0.038	-0.146	-.402**	.257**	.216**	1
	Sig. (2-tailed)	0.919	0.002	0.833	0.635	0.643	0.673	0.860	0.559	0.623	0.059	0.000	0.001	0.005	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

respectively relations with COF. Besides CPI, broad money growth (BM) has a negative relation with COF, while RP, GDP, PR have a positive relationship with COF. However, the relations with CPI, GDP, RP have no significant impact. It tells us that the relation between COF and CG attributes as well as the multiple economic indicators have less statistical significant impact.

Discussion

The summary of the relationship between the corporate governance attributes and the performance measurement variables are presented in Table 8.

Since the COF is more directly influenced by the governmental financial policy, in this regression result, we are more interested in the impact of CG attributes on ROA, ROE and NPL. We hypothesized that there was no relationship between the CG code and the bank performance. In this case study, as for AS, IB and IS attributes, it is difficult to simply reject the null hypothesis (the CG code had no impact on the bank performance) since the correlation between these attributes and the performance is less statistically significant. Rather, we may say that the codified CG practices such as the expansion of audit committee size and the increase in the ratio of independent directors in the board and the audit committee were less meaningful to the improvement of bank performance.

On the other hand, in this case study, as for BS and SS, it is difficult to simply accept the null hypothesis since the correlation between these attributes and the performance is rather statistically significant.

Our research finds that the board size is positively related with ROA, ROE, and negatively related with NPL. At the same time, we should note that most of Bangladeshi commercial banks maintained or reduced the board size in the process of adopting the CG code (see Table 7). Basically, there is no 'a priori' economic theory to determine an optimal board size. Larger size would be associated with the Williamsonian 'opportunism' or free-riding problem (see also Uwuigbe & Fakile, 2012), while smaller size would be exposed to the risk of information loss at the center or biased decision-making upon the voice of particular directors.

The important observation in this study is that in order to meet the guideline for the appointment of independent directors, Bangladeshi commercial banks were forced to increase the ratio of independent directors on the board, but most of them kept the board size down. In other words, during the period, it looks like the banks reduced the number of executive directors so as to newly appoint independent directors.

Our result may support earlier empirical studies such as Isik and Ince (2016), Hsu and Xuesong (2016), Adams and Mehran (2012), Dalton et al. (1998) insisting that a certain effect of the economies of scale in resource, experience and information sharing among the board members is pointed out behind this positive relationship between the board size and the performance. However, we should note that behind our case (a positive relationship) there was a certain pressure for the banks to increase the ratio of independent directors on the board. The pressure may have created an ill-incentive for the banks to reduce the number of executive directors, which may be related to the deterioration of the bank performance during the investigated period. We should look at this ill-incentive structure behind the positive relationship between BS and the performance in general.

As mentioned earlier, the attribute of AS has no or a lesser relationship with the performance during the investigated period. Our result may support Aldamen et al. (2011), Yahya et al. (2012), Ebrahim (2014). However, we should note that the absolute size of the audit committee was still too small during the period (see Table 6). This might be related to the result. Besides, it is worth

Table 8: Summary of regression analysis between corporate governance attributes and bank performance

CG attributes	ROA_{it}	ROE_{it}	NPL_{it}	COF_{it}
BS_{it}	Positive*	Positive*	Negative*	Negative
AS_{it}	Negative*	Positive	Positive	Positive*
IB_{it}	Negative	Negative	Negative*	Positive
IA_{it}	Positive	Positive	Positive*	Negative*
SS_{it}	Negative	Negative*	Positive*	Negative

*= Significant

noting that according to the biography of audit committee members, not all the members seem to have the expected financial literacy and some are retired bureaucrats. This supplemental information may endorse the result.

In contrast to the impact by BS, SS had a negative relation with ROA and ROE, then the positive relation with NPL. We should note that while the ratio of independent directors on the board (as well as the audit committee) increased during the period 2013 to 2017, the sponsor directors shareholding percentage remained at almost the same level (only 0.05% was increased) during the period 2010-2012 and 2013-2017 (Table 6). This suggests that the fundamental structure of ownership and control by sponsor directors remained unchanged during the period. This structure of maintaining the control power by the group with its vested interest may have hindered the effectiveness of the CG code. This finding may partly support Kallamu (2016) and Chen et al. (2015) insisting that the strength of independent directors depends on the ownership structure of the firm.

In our case, we assume that the interest of sponsor directors did not always go together with the bank performance. Furthermore, sponsor directors / shareholders may have given an ill-influence on the credit screening and monitoring process. This result may support Boussaada & Karmani (2015), Wang et al. (2015) and Parichat et al. (2011) insisting that the ownership concentration in banks may lead to credit misallocation. We may conclude that any attempt of adopting codified CG practices would be futile under the fundamental structure of ownership concentration in Bangladesh.

In this paper, we considered five economic indicators that suggested the economic environment surrounding the investigated banks during the period. It helped us to test the viability of this model as to what extent it would work under a different economic environment but we found very little significant impact of these factors on the bank performance. This is partly because this regression model uses a shorter time series of data since 2010 when the codified corporate governance practices were started. It seems that only eight years of economic indicators data might be not enough to judge the economic impact on banking sector performance. This is another limitation of our model.

Conclusion

In this paper we attempted to investigate the relationship between corporate governance attributes and bank performance to explore the effectiveness of the CG code in the banking industry of Bangladesh. Our regression results suggest that the codified CG practices, in general, had no relation with bank performance. At the least, we point out that there was no significant 'positive' correlation between the ratio of independent directors on the board and bank performance as expected by the code. In this case study, the CG code may have given the Bangladeshi commercial banks an ill-incentive for the reduction of executive directors under the pressure of meeting a guideline to increase the ratio of independent directors. This incentive structure had a negative impact on the bank performance during the period. On the other hand, if the banks had newly appointed independent directors in addition to the existing executive directors, consequently increasing the board size, would it have contributed positively to the bank performance? It is difficult to assume the answer from this study. All we could say here is that a naive or ill-planned adoption of the CG code has given an ill-incentive for restructuring the board size and composition, a CG strategy that was, at least, not contributing to the improvement of bank performance during the period.

Another important finding was that the fundamental structure of ownership and control by sponsor directors remained unchanged during the period. This structure of maintaining the control power by a group with its vested interest may hinder the effectiveness of the CG code in the special context of Bangladesh.

On June 3, 2018 the Bangladesh Securities and Exchange Commission revised the CG code and asked companies to comply with the new code. The new code will be effective from January 1, 2019. Two major changes are scheduled in the revised 2018 code. One is the specification of the appointment and role of independent directors and the other is the adoption of a Nomination and Remuneration committee (NRC) in the board / sub-committee structure.

Since the corporate governance code in Bangladesh was introduced in 2006, banking industry performance has been deteriorating. As mentioned earlier, we point out that any attempt of adopting codified CG practices would be futile under the fundamental structure of

ownership concentration in Bangladesh. This is a difficult challenge for Bangladesh. However, the agenda of CG practices should go together with a policy for mitigating the potential bias under the ownership concentration.

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APPENDIX

A. The effect of independent/explanatory variables on dependent variable return on assets (ROA)

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample: 2010 2017				
Periods included: 8				
Cross-sections included: 21				
Total panel (balanced) observations: 168				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.017292	0.031189	-0.554423	0.5802
AS	-0.027175	0.010723	-2.534216	0.0124
BS	0.067565	0.011308	5.975158	0
IB	-0.020058	0.014704	-1.364136	0.1748
IA	0.004535	0.008072	0.56188	0.5751
SS	-0.022998	0.015061	-1.526994	0.1291
CPI	0.003162	0.013177	0.23998	0.8107
BM	0.080901	0.052552	1.539446	0.126
RP	-0.021455	0.034033	-0.630423	0.5295
GDP	-0.330376	0.22755	-1.451886	0.1488
PR	-0.126243	0.101292	-1.246322	0.2148
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.546367	Mean dependent var		0.013695
Adjusted R-squared	0.447032	S.D. dependent var		0.010784
S.E. of regression	0.008019	Akaike info criterion		-6.648914
Sum squared resid	0.00881	Schwarz criterion		-6.072468
Log likelihood	589.5087	Hannan-Quinn criter.		-6.414964
F-statistic	5.500216	Durbin-Watson stat		1.132976
Prob(F-statistic)	0			

B. The effect of independent/explanatory variables on dependent variable return on equity (ROE)

Dependent Variable: ROE				
Method: Panel Least Squares				
Sample: 2010 2017				
Periods included: 8				
Cross-sections included: 21				
Total panel (balanced) observations: 168				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.560912	0.163772	3.424967	0.0008
AS	0.044954	0.056308	0.798372	0.426
BS	0.136276	0.059376	2.295135	0.0232
IB	-0.027935	0.077209	-0.361804	0.7181
IA	0.02928	0.042386	0.690801	0.4909
SS	-0.200794	0.079086	-2.538926	0.0122
CPI	-0.209796	0.069194	-3.031997	0.0029
BM	0.905759	0.275949	3.282339	0.0013
RP	-0.1131	0.178708	-0.632876	0.5279
GDP	-2.856295	1.194854	-2.390498	0.0182
PR	-2.461505	0.531882	-4.627914	0
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.627612	Mean dependent var		0.138758
Adjusted R-squared	0.546067	S.D. dependent var		0.062498
S.E. of regression	0.042108	Akaike info criterion		-3.332093
Sum squared resid	0.242913	Schwarz criterion		-2.755647
Log likelihood	310.8958	Hannan-Quinn criter.		-3.098143
F-statistic	7.696521	Durbin-Watson stat		1.806456
Prob(F-statistic)	0			

C. The effect of independent/explanatory variables on dependent variable non performing loan (NPL)

Dependent Variable: NPL				
Method: Panel Least Squares				
Sample: 2010 2017				
Periods included: 8				
Cross-sections included: 21				
Total panel (balanced) observations: 168				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.02584	0.043563	-0.593175	0.554
AS	0.015891	0.014978	1.06096	0.2906
BS	-0.054827	0.015794	-3.471415	0.0007
IB	-0.053184	0.020538	-2.589589	0.0106
IA	0.024154	0.011274	2.142358	0.0339
SS	0.063106	0.021037	2.99978	0.0032
CPI	0.073362	0.018405	3.985851	0.0001
BM	-0.011525	0.073402	-0.157013	0.8755
RP	-0.110504	0.047536	-2.324649	0.0216
GDP	-0.563845	0.317829	-1.774052	0.0783
PR	0.516911	0.14148	3.653606	0.0004
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.631113	Mean dependent var		0.044419
Adjusted R-squared	0.550335	S.D. dependent var		0.016703
S.E. of regression	0.011201	Akaike info criterion		-5.980624
Sum squared resid	0.017187	Schwarz criterion		-5.404179
Log likelihood	533.3724	Hannan-Quinn criter.		-5.746674
F-statistic	7.812918	Durbin-Watson stat		1.444959
Prob(F-statistic)	0			

D. The effect of independent/explanatory variables on dependent variable cost of funds (COF)

Dependent Variable: COF				
Method: Panel Least Squares				
Sample: 2010 2017				
Periods included: 8				
Cross-sections included: 21				
Total panel (balanced) observations: 168				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.060053	0.030986	1.938079	0.0547
AS	0.023937	0.010653	2.246829	0.0263
BS	-0.005661	0.011234	-0.503912	0.6151
IB	0.024391	0.014608	1.669671	0.0973
IA	-0.017883	0.008019	-2.229974	0.0274
SS	-0.028199	0.014963	-1.884526	0.0616
CPI	-0.006833	0.013092	-0.521972	0.6025
BM	-0.214547	0.05221	-4.109304	0.0001
RP	0.016541	0.033812	0.489205	0.6255
GDP	0.244434	0.226068	1.08124	0.2815
PR	0.706069	0.100633	7.016276	0
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.863154	Mean dependent var		0.085781
Adjusted R-squared	0.833187	S.D. dependent var		0.019506
S.E. of regression	0.007967	Akaike info criterion		-6.661975
Sum squared resid	0.008696	Schwarz criterion		-6.085529
Log likelihood	590.6059	Hannan-Quinn criter.		-6.428025
F-statistic	28.80409	Durbin-Watson stat		1.149677
Prob(F-statistic)	0			