AIUB Journal of Business and Economics
Volume 13, Number 1
ISSN 1683-8742
November 2016 pp. 19-43

The Relationship between CEO Compensation and Firm Performance in the Banking Sector of Bangladesh

Md. Yousuf Harun*
Department of Finance & Banking
Jahangirnagar University

Md. Kaysher Hamid†
Department of Finance & Banking
Jahangirnagar University

The Relationship between CEO Compensation and Firm Performance in the Banking Sector of Bangladesh

Abstract

To study the pay-performance relationship, 24 commercial banks listed with DSE have been selected for 2004-15. Total annual compensation paid to CEO represents the CEO compensation (CEOCOM) and return on assets (ROA), net interest margin (NIM), capital adequacy ratio (CAR), loan-deposit ratio (LDR), classified loan ratio (CLR), and price per share (PPS) are used as the performance indicators. CEOCOM has shown an increasing trend over the years with average YOY growth of 12.92% and CAGR of 12.73%. A strong positive correlation of CAR and a strong negative correlation of PPS are observed with CEOCOM. Besides, ROA, NIM, and LDR have a weak positive and CLR have a weak negative correlation with CEOCOM. Regression result shows a strong correlation and high explanatory power of the independent variables against CEOCOM. The model is also found statistically significant and free of multicollinearity. In addition, ROA, CLR, and PPS have shown negative and NIM, CAR and LDR have illustrated positive coefficients with CEOCOM. Except LDR (significant at 86.1%), all the variables are significant at 95% confidence level. Therefore, this research concludes a significant relationship between CEO compensation and firm performance.

Key Words: Banking sector, Remuneration, Financial Performance.

1. Introduction

Compensation of Chief Executive Officer (CEO) is one of the fundamental issues in agency relationship as, theoretically, CEO acts as an agent of the shareholders (the principal) and the way a CEO is compensated has a major role to play in making him/her responsible for respective duties as an agent. Ideally, compensation of a CEO should be aligned with the performance of the firm as good performance reflects the fact that a CEO is successfully performing his/her responsibility. But, as it isn't always guaranteed that reality will equal the ideal setting, it can't be claimed with full conviction that presently CEOs are compensated based on their performances measured by the success of the firm rather corporations are blamed for making excessive pay to the CEOs and statistics also proves this fact. In 2015, yearly median payment to CEO of 200 large US firms was almost 20 million dollars which was about 400 times of the payment made to a typical worker (Board, 2016).

Survey by Stanford Rock Center for Corporate Governance (2016) has found that most Americans believe CEOs are hugely overpaid and support radical reductions of CEO compensation. CEO compensation has also received media attention in UK (Ozkan, 2009) and many other developed countries. But, in developing countries, CEO compensation is not much celebrated issue as in the developed one; therefore, the figures and facts involving various areas related to CEO compensation are also limited in numbers. This study tries to put some light on this issue by studying the pay-performance relationship in context of a developing country.

2. Statement of the Problem

Theoretically, compensation structure is considered as a primary factor in motivating CEO to make decision that serves the best interest of the shareholders. But, how this structure is designed has a major role to play in making the prior statement a true. If CEO compensation has no relation with the performance of the firm, then, the incentive of the CEO to maximize the shareholders' wealth may not be adequate. In this respect, accounting and/or market based firm performance measures can be used in evaluating the effectiveness of a CEO and compensation scheme of CEO can be developed reflecting the firm's performance in these measures. Numbers of studies have been conducted to investigate the pay-performance relationship (Ozkan, 2009; Aduda, 2011; Fernandez, 2005) but, no conclusive decision is found yet. Therefore, the search for optimal compensation structure that

meets the interest of both the agent and principal is continuing and the room for more comprehensive study in this area is open. Very few academicians and practitioners have shown their interest in studying the pay-performance relationship in Bangladesh perspective. So, there is a research gap here and this study responds to this necessity by examining the relationship of CEO pay with firm performance in banking sector of Bangladesh.

3. Objective and Research Questions

The objective of the study is:

- To identify the relationship between CEO compensation and firm performance in the banking sector of Bangladesh

And, to fulfill the objective, based on empirical evidences, this research tries to answer the question of

- What is the trend of CEO compensation in the banking sector of Bangladesh?
- Does the CEO compensation reflect the banks performance in the banking sector of Bangladesh?
- What is the direction and magnitude of CEO pay-performance relationship in the banking sector of Bangladesh?

4. Limitations

The limitations of this study can be listed as:

- There is no centrally managed database in Bangladesh that systematically collects compensation information of Bangladeshi firms. So, all data used in this study were hand-picked from the annual report and the possibility of minor error can't be ignored.
- Few banks have mentioned the components of CEO compensation in their annual reports. Most of the banks have only mentioned the total cash compensation without any related notes. It would have been possible to do more comprehensive study if the components information were made available.

- Very few researchers have touched the pay-performance relationship in Bangladesh perspective. So, there was a lack of relevant literatures in developing the conceptual framework in context of Bangladesh.

5. Literature Review

5.1. Theoretical Literatures

Agency theory is the building block of theoretical development on the subject of CEO compensation. This theory states that an agency relationship develops between two (or more) parties when one (the agent) acts for, on behalf of, or as representative of, the other (the principal(s)) in a particular domain of decision problems (Ross, 1973). In a firm, the relationship between shareholders (the principal) and manager (the agent) can be termed as agency relationship and agency problem arises when there is a conflict of interest among managers and shareholders (Jensen and Meckling, 1976). And, executive compensation acts as a tool in mitigating this conflict (Bebchuk and Fried, 2003) by improving the alignment of management incentives with stockholders' interest (Erick, Kefah, and Nyaoga, 2014). Designing compensation scheme based on firm performance can be a motivator for CEO in enhancing the firm performance (Olalekan and Bodunde, 2015).

Typically, Compensation plan of a CEO may include salary, bonus payments, stock options, payments from long-term compensation plans, restricted stock awards, thrift-plan contributions, company-paid health and insurance plans, auto allowances and other executive perks (Barb, 1994).

Various compensation components also have potential pitfalls. Cash incentives based on accounting performance measures may motivate the executive to engage in accounting manipulation and the short-term performance focus of the executive may sacrifice the long-term health of the firm (Sigler, 2011). On the other hand, there is also problem with using stock compensation as stock price may go up or down because of the factors those are not in the control of the firm (Sigler, 2011). Therefore, a mixture of various compensation components may be an effective strategy.

5.2. Empirical Literatures

A number of studies on the relationship between CEO compensation and firm performance have been carried out. Vittaniemi (1997) examined the

pay-performance relationship in perspective of Finland and incorporated 48 listed and 70 private companies in the study for the period of 1989-93. Return on equity (ROE), return on sales (ROS), return on investment (ROI) and share return index (SRI) were used to measure company performance. He found a significant pay-performance relationship for listed companies but insignificant relationship for private companies.

Lau and Vos (2004) studied the relationship for 104 New Zealand firms from 1998 to 2002. They have used total assets as a representative of firm size and sales growth, share price changes, and growth in dividend payout, represented firm performance. They found a strong positive relation between firm size and CEO compensation but a weak relation between firm performance and CEO compensation. In 2005, Kato, Kim, and Lee investigated this relationship for Korean firms with and without Chaebol affiliation. They considered 246 firms included in KOSPI200 for 1998 to 2001 and used growth of sales, net income, return on asset, and stock returns, as performance measures. They found that cash compensation of Korean executives was statistically significant to stock market performance. But, this relationship was mainly driven by non-Chaebol firms rather Chaebol firms.

Executive pay and firm performance relationship was also checked by Duffhues and Kabir (2008) for 135 Euronext Amsterdam listed Dutch companies by using accounting-based and capital market-based performance measures i.e. return on assets (ROA), return on sales (ROS), annual stock return (RET), and Tobin's Q for 1998-2001. But, they failed to identify any positive pay-performance relationship and stated that powerful managers could influence their own pay in Dutch companies.

Jeppson, Smith, and Stone (2009) considered 200 large public companies for 2007 and examined the relationship of compensation components i.e. base salary, cash bonuses, perks, stock awards, option awards, and total compensation with performance measures i.e. company revenue, year-to-year change in net income, and year-to-year change in total shareholder return (TSR). Correlation analysis found a significant correlation of total revenue with total compensation, base salary, and cash bonuses. Cash bonuses were also significant to change in net income and change in TSR. Other correlations among the variables were found insignificant. From regression, company revenue was identified as the only statistically significant predictor of all individual CEO compensation components except perks.

Tariq (2010) examined the pay-performance relationship along with the influence of board size on pay of CEO. His sample included 30 companies of Sweden for 2004-2008. By controlling for firm size and growth opportunities, he found a negative and insignificant relationship between pay and performance. But, board size and CEO pay showed no correlation. Gregg, Jewell, and Tonks (2011) studied the relationship for 415 UK firms including 59 financial services from 1994 to 2006. They found that executive pay in the financial services sector was high but the cash-plus-bonus pay-performance sensitivity of this sector was not significantly higher than in other sectors.

Gorré (2011) explored this relationship for Dutch listed firms by studying 25 firms for 2005-09. He conducted ordinary least square (OLS) regression by using total compensation including fixed salary, bonuses and value of stock options as dependent variable and performance measures i.e. return on asset, revenues, shareholders equity and earnings per share as dependent. He concluded a positive relationship as shareholders' equity had a strong and positive relationship with CEO compensation.

By incorporating 56 listed private SMEs of China, Liu (2011) studied the pay-performance relationship for 2008-09. She used the change in ROA, negative net income, change in number of meetings and growth of net income as performance measures and found no significant evidences of pay-performance relationship. In another study, Aduda (2011) investigated this relationship among 9 commercial banks listed at Nairobi Stock Exchange over 2004-08. Performance measures i.e. log of deposits, ROA, and capital adequacy were regressed against executive compensation and a negative but non-significant relationship was found between executive compensation and performance of commercial banks in Kenya.

Sigler (2011) investigated the dynamics of executive compensation and firm performance for 280 listed firms of New York Stock Exchange for 2006-09 and concluded a positive and significant relationship between total CEO compensation and firm performance measured by ROE. Eric, Kefah, and Nyaoga (2014) examined this relationship for 46 insurance companies of Kenya throughout 2006-10. Capital adequacy ratio, solvency ratio, incurred claims ratio, and expense ratio were regressed against CEO remuneration. But, the study didn't find any significant relationship between pay and performance and concluded that key performance ratios were not key considerations in determining executive compensation among the insurance companies in Kenya.

In 2015, Fallatah investigated the pay-performance relationship along with the influence of corporate governance on pay for Saudi Arabian Companies. He considered 455 companies listed with Saudi Stock Market (Tadawul) for 2008-2012 and used stock price returns (RT), return on assets (ROA) and return on equity (ROE) as firm performance measures and board size, board independence, government ownership, large shareholder ownership, and CEO duality as corporate governance measures. He found a positive significant relationship between CEO compensation and firm performance and a negative significant relationship between CEO compensation and corporate governance structure.

Olalekan and Bodunde (2015) examined the impact of CEO compensation on the performance of 11 selected Nigerian banks over 2005-12 using a generalized method of moments (GMM) and reported that CEO compensation had a negative and significant impact on the bank performance. Another study by Olaniyan (2015) also found a negative relationship. He studied 72 non-financial firms in Nigerian Stock Exchange for 1996-2012 and used ROA, ROE and Tobin's Q as performance measures. Each performance measure was individually regressed against executive compensations and a negative significant relationship was found in all the cases.

In the context of Bangladesh, Chowdhury et al. (2012) explored the effect of performance measures and company size on the executive compensation for 23 banks listed with Dhaka Stock Exchange (DSE) for the period of 2000-07. They incorporated key performance indicators i.e. return on assets, return on equity, net interest margin, earnings per share, price-earnings ratio, loan to deposit ratio, classified loan to total loan ratio, capital adequacy ratio, cash dividend and stock dividend and bank size against executive compensation measured by cash compensation. The study reported a significant relationship of executive compensation with firm performance and size.

From the empirical literatures, it can be identified that a number of studies on the CEO compensation and firm performance relationship have been conducted from the perspective of different countries, sectors, time frames, and conceptual frameworks. As this relationship dynamics differs on situation, no conclusive statement regarding this relationship can be made. To talk about this relationship from Bangladesh perspective, the words are very limited as this issue has received little focus from the academicians and

practitioners in Bangladesh. So, there exists a knowledge gap and this study tries to minimize this gap to some extent.

6. Research Methodology

6.1. Sources and Collections of Data

This research highly depends on secondary data. As of December 31, 2015, 30 commercial banks were listed with Dhaka Stock Exchange (DSE) and from those, 24 commercial banks representing 80.00% of population are selected for a study period of 12 years i.e. 2004 to 2015. Annual reports of the selected banks have been collected from the official websites of respective banks and DSE Library and audited financial data are handpicked from those reports to prepare the database used in this research. In addition to annual reports, data from different published sources i.e. journals, newspapers, business magazines, online news portals, have been used in this report.

Table 1.0: Selected Banks for the Study

ABBL	:	AB Bank Limited	**NBL**	:	National Bank Limited
AIBL	:	Al-Arafah Islami Bank Limited	**NCC**	:	NCC Bank Limited
BAL	:	Bank Asia Limited	**OBL**	:	One Bank Limited
DBBL	:	Dutch-Bangla Bank Limited	**PBL**	:	Prime Bank Limited
DBL	:	Dhaka Bank Limited	**PUBL**	:	Pubali Bank Limited
EBL	:	Eastern Bank Limited	**RBL**	:	Rupali Bank Limited
EXIM	:	EXIM Bank Limited	**SBL**	:	Standard Bank Limited
IBBL	:	Islami Bank Bangladesh Limited	**SEBL**	:	Southeast Bank Limited
ICB	:	ICB Islamic Bank Limited	**SIBL**	:	Social Islami Bank Limited
IFIC	:	IFIC Bank Limited	**TCBL**	:	The City Bank Limited
	:			:	United Commercial Bank
MBL		Mercantile Bank Limited	**UCBL**		Limited
MTBL	:	Mutual Trust Bank Limited	**UBL**	:	Uttara Bank Limited

6.2. Hypothesis for the Study

To identify the relationship between CEO compensation and firm performance in the banking sector of Bangladesh following hypothesis are tested in this study.

H_0: There is no significant relationship between CEO compensation and firm performance in the Banking Sector of Bangladesh

H_1: There is significant relationship between CEO compensation and firm performance in the Banking Sector of Bangladesh

6.3. Model and Variable Definitions

The basic model used to test the hypothesis is

$$\mathbf{Y = \alpha_0 + ß_1 X_1 + ß_2 X_2 + ß_3 X_3 + \ldots\ldots\ldots + ß_n X_n + et}$$

Where,

- Y represents the dependent variable;
- α_0 is the intercept;
- $ß_1, ß_2, ß_3 \ldots\ldots\ldots\ldots ß_n$ are regression coefficients;
- $X_1, X_2, X_3 \ldots\ldots\ldots\ldots X_n$ are independent variables;
- et is the estimation error.

Based on previous researches and sector consideration, 7 variables i.e. 1 dependent variable and 6 independent variables are selected to study the pay-performance relationship.

Table 2.0: Descriptions of Variables

Dependent Variable	
CEO Compensation (CEOCOM)	Log of total annual compensation paid to CEO
Independent Variables	
Return on Assets (ROA)	Net profit after tax as a percentage of total assets
Net Interest Margin (NIM)	Net interest (investment) income as a percentage of total assets
Capital Adequacy Ratio (CAR)	Total eligible capital as a percentage of total risk weighted assets

Loan-Deposit Ratio (LDR)	Total loans (investments) as a percentage of total deposits
Classified Loan Ratio (CLR)	Total classified loans (investments) as a percentage of total loans (investments)
Price per Share (PPS)	Log of the ratio of market capitalization to number of common share outstanding

6.4. Data Analysis

To analyze the data, correlation and multiple regressions are conducted. Correlation analysis is used to identify the strength of associations between the variables individually and multiple regressions are run to recognize the causal relationship between CEO compensation and firm performance. To check the auto-correlation of the variables, Durbin-Watson (DW) test is done. Tolerance value and variance inflation factor (VIF) are considered to identify the multicollinearity problem. SPSS 16 and Microsoft Excel 2013 are used to perform the related analysis of this study.

7. Analysis and Discussions

7.1. CEO Compensation in Banking Sector of Bangladesh

Total CEO Compensation in banking sector of Bangladesh has shown an increasing trend over the study period of 2004-15. In 2004, total compensation paid to the CEOs of all selected banks was Tk. 74,707,980 and in 2015, this amount has reached to Tk. 279,086,794. So, there has been an increase of 273.57% in 12 years. But, this growth was not balanced over the years rather there were ups and downs. Except 2007, CEO compensation has experienced double digits year over year (YOY) growth till 2010 with the highest growth (24.67%) in 2008 but from 2011, there can be seen single digit growth with the lowest (2.39%) in 2014. If the growth of CEO compensation is measured in taka then, in a single year, the highest rise of Tk. 35,434,820 can be recorded for 2010 and the lowest of TK. 6,129,372 for 2014.

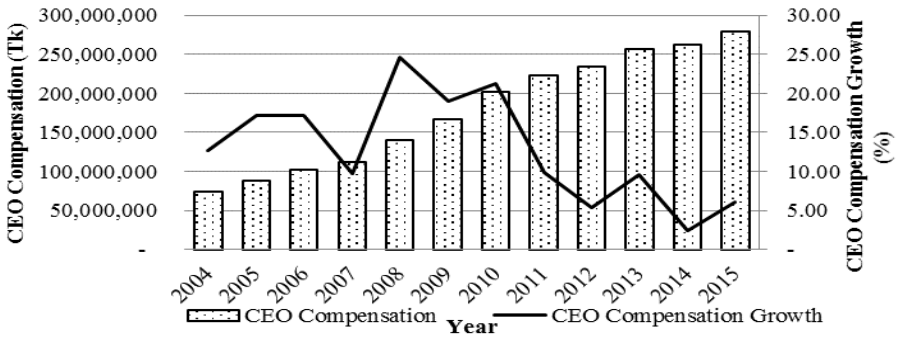

Figure 1.0: Trend of CEO Compensation in Banking Sector of Bangladesh

Table 3.0 shows the year over year (YOY) growth of CEO compensation. The average YOY growth of CEO compensation is 12.92%. But, if the average growth rate is calculated for before and after 2010 than it can be observed that before 2010 average YOY growth was 17.39% but after 2010 the rate has fallen by 10.72% to 6.66%.

Table 3.0: Growth of CEO Compensation

Year	CEO Compensation (Tk)	YOY Growth	Average YOY Growth
2003	66,298,532	-	17.39%
2004	74,707,980	12.68%	
2005	87,504,212	17.13%	
2006	102,530,851	17.17%	
2007	112,537,553	9.76%	
2008	140,303,174	24.67%	
2009	167,056,895	19.07%	
2010	202,491,715	21.21%	
2011	222,497,581	9.88%	6.66%
2012	234,315,613	5.31%	
2013	256,799,166	9.60%	
2014	262,928,538	2.39%	
2015	279,086,794	6.15%	
	Difference		10.72%
	Average	12.92%	

Cumulative annual growth rate (CAGR) of CEO compensation for the sample banks are shown in table 4.0. It can be observed that 11 banks have CAGR higher than the sector CAGR of 12.73% and 13 banks have lower than the sector. Among the selected banks, 17 banks have two digits CAGR with the highest of 22.68% for IFIC. The lowest CAGR (6.29%) is recorded for NBL.

Table 4.0: CAGR of CEO Compensation of Sample Banks

Up Sector				ector	Down Sector			
ank	AGR	ank	AGR	AGR	ank	AGR	ank	AGR
FIC	2.68%	XIM	4.64%		AL	2.68%	IBL	.24%
BL	9.31%	BBL	4.53%		BL	2.45%	CC	.05%
TBL	9.21%	CBL	4.24%		BBL	1.06%	EBL	.55%
CB	8.33%	CBL	3.97%	2.73%	UBL	0.99%	BBL	.92%
BL	7.09%				BL	0.76%	BL	.30%
BL	6.26%				BL	0.18%	BL	.29%
IBL	5.49%				BL	.45%		

7.2. Performance Indicators of Banking Sector of Bangladesh

Table 5.0 shows the CAGR of performance indicators over 2004 to 2015 for the banking sector. It can be observed that CLR and PPS have negative CAGR. Negative value of CLR is a good sign for the sector as it indicates the decrease of classified loans in the banking sector. PPS has the negative CAGR as this indicator has shown lower values in recent years due to the increase in number of shares of the banking sector because of conversion of common share to Tk. 10 each. ROA, NIM, CAR, and LDR have shown positive CAGR which is a positive sign for the banking sector.

Table 5.0: CAGR of Performance Indicators of Banking Sector

	ROA	NIM	CAR	LDR	CLR	PPS
CAGR	0.46%	0.41%	1.96%	0.54%	-4.60%	-29.42%

7.3. Descriptive Statistics

Tables 6.0 shows the descriptive statistics of dependent and independent variables. It can be observed that mean log of CEO compensation in banking sector of Bangladesh is 18.91 with standard deviation of 0.46. Negative skewness value is indicating slight extension of tails to left and kurtosis is signifying platykurtic distribution of sector CEO compensation, therefore, a light tailed dataset.

Table 6.0: Descriptive Statistics of Variables

	CEOCOM	ROA	NIM	CAR	LDR	CLR	PPS
Mean	18.91	1.12	2.38	10.25	83.74	6.24	5.07
Standard Deviation	0.46	0.45	0.33	1.62	2.81	1.78	1.70
Kurtosis	-1.35	1.05	(1.50)	(1.55)	0.61	0.06	-2.05
Skewness	-0.46	1.09	0.20	(0.44)	0.84	0.47	-0.27
Range	1.32	1.63	0.94	4.16	10.09	6.07	4.10
Minimum	18.13	0.51	1.94	7.60	79.68	3.28	2.87
Maximum	19.45	2.14	2.88	11.76	89.77	9.36	6.97

Among the independent variables, mean ROA of 1.12% is indicating that the banking sector earns Tk.1.12 net profit after tax against Tk.100 of assets. NIM has a mean value of 2.38% with standard deviation of 0.33% and the lowest range of 0.94% among all the variables. CAR is illustrating a mean value of 10.25% which indicates that the banking sector has maintained eligible capital of Tk. 10.25 against Tk. 100 of risk weighted assets. Average LDR is 83.74% which means that for every Tk. 100 of deposits the banking sector is making TK. 83.74 of loans and among Tk.100 of loans, classified loans are Tk. 6.24. On the other hand, log of PPS is 5.07and is right-skewed with lighter tails.

7.4. Correlation Analysis

The correlation matrix of the variables is presented in table 7.0. It can be seen that CAR has a strong positive correlation of 0.914 with CEOCOM where PPS (-0.902) has strong negative correlation. On the other hand, ROA, NIM, and LDR have a weak positive correlation with correlation coefficient of 0.310, 0.398, and 0.365 respectively where CLR has a weak and negative correlation. Besides, ROA is showing moderate correlation with NIM, LDR and CLR. In addition, moderate correlation is also observed between NIM and LDR and between CAR and PPS. So, there is the possibility of multicollinearity.

Table 7.0: Correlation Matrix

	CEOCOM	ROA	NIM	CAR	LDR	CLR	PPS
CEOCOM	1						
ROA	0.310	1					
NIM	0.398	0.666	1				
CAR	0.914	0.316	0.293	1			
LDR	0.365	0.783	0.779	0.203	1		
CLR	-0.342	-0.546	-0.151	-0.147	-0.469	1	
PPS	-0.902	-0.059	-0.117	-0.881	-0.071	0.068	1

7.5. Regression Analysis

As the objective of this research is to identify any existential relationship between CEO compensation and firm performance, here, 6 independent variables are regressed against CEO compensation. Summary result of the regression is presented in table 8.0. The correlation coefficient is found to be 0.997 which means a strong positive association. Coefficient of determination, R Square, is 99.5% which indicates that 99.5% of the variance of the dependent variable can be explained by the variation of ROA, NIM, CAR, LDR, CLR, and PPS. In addition, significance F value signals that this model is statistically significant. Durbin-Watson value of this model is 2.749 which is higher than 0.2681 (D_L at k = 6, n = 12) but lower than 2.8320 (D_U at k = 6, n = 12), therefore, no conclusive decision can be given regarding the existence of autocorrelation.

Table 8.0: Regression Result of CEO Compensation and Firm

R			0.997				
R Square			0.995				
Adjusted R Square			0.989				
Durbin-Watson			2.749				
F			159.043				
Significance F			0.000				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	16.386	1.004		16.314	0.000		
ROA	- 0.329	0.069	- 0.320	-4.758	0.005	0.230	4.344
NIM	0.391	0.086	0.276	4.552	0.006	0.284	3.520
CAR	0.136	0.025	0.477	5.378	0.003	0.132	7.555
LDR	0.020	0.012	0.124	1.760	0.139	0.209	4.773
CLR	- 0.083	0.011	- 0.317	-7.217	0.001	0.541	1.848
PPS	- 0.119	0.023	- 0.437	-5.258	0.003	0.151	6.638

Among the independent variables, ROA, CLR, and PPS are showing negative coefficients with CEOCOM and NIM, CAR and LDR is showing positive coefficients. So, CEO compensation increases for the unitary increase of NIM, CAR, and LDR and decreases for the decrease in ROA, CLR, and PPS. CEOCOM changes the highest for 1 unit change in NIM and the lowest for LDR. Except LDR (acceptable at 86.1%), all the variables are significant at 95% confidence level. The tolerance values of the independent variables are higher than 0.1 and VIF values are lower than 10, therefore, there is no multicollinearity problem in this model.

7.6. Hypothesis Testing

The null hypothesis of this study was that there is no significant relationship between CEO compensation and firm performance in the banking sector of Bangladesh and alternative hypothesis assumed the existence of significant relationship. From table 8.0, it can be seen that the model has R value of 0.997 and R square of 0.995 and this model is also statistically valid at 95% confidence level as. On the other hand, among 6 predictors, 5 have significant coefficients with CEOCOM at 95% confidence level and one is significant at 86.1%. Therefore, null hypothesis can be rejected and it can be concluded that there is a significant relationship between CEO compensation and firm performance in the banking sector of Bangladesh.

Table 9.0: Result of Hypothesis Testing

H_0:	There is no significant relationship between CEO compensation and firm performance in the Banking Sector of Bangladesh	Rejected
H_1:	There is significant relationship between CEO compensation and firm performance in the Banking Sector of Bangladesh	Accepted

7.7. Test of the Model

In this section, the regression model is tested in different sector settings i.e. for high value and low value banks based on their market capitalization in the last trading day of 2015, top tier and bottom tier banks based on their average total assets for 2004-15 and high earnings and low earnings banks based on their average net profit after tax for 12 years.

Model Application for High and Low Value Banks

The model is tested here for high value and low value banks as categorized based on the sample banks market capitalization at the last trading day of 2015. By observing the market capitalization, it can be identified that 7 banks representing about 29% of the sample constitute about 48.3% of total capitalization of banking sector and other 17 banks hold 51.7%. In addition, individually, 7 banks represent more than 5% of total capitalization of banking sector where 17 banks have less than 5%. Therefore, here, 7 banks are named as high value banks and others 17 are low value banks.

Table 10: High Value and Low Value Banks

High Value Banks	Low Value Banks	
Islami Bank Bangladesh Limited	National Bank Limited	Uttara Bank Limited
Dutch-Bangla Bank Limited	Southeast Bank Limited	NCC Bank Limited
United Commercial Bank Limited	Al-Arafah Islami Bank Limited	One Bank Limited
Pubali Bank Limited	Bank Asia Limited	Mercantile Bank Limited
Prime Bank Limited	AB Bank Limited	Rupali Bank Limited
The City Bank Limited	Dhaka Bank Limited	Mutual Trust Bank Limited
Eastern Bank Limited	EXIM Bank Limited	Standard Bank Limited
	Social Islami Bank Limited	ICB Islamic Bank Limited
	IFIC Bank Limited	

For the high value banks, correlation coefficient is found to be 0.979 which describes a strong correlation and R square also shows high explanatory power of the independent variables as their variance captures about 95.7% of the variability of CEO compensation. This model also passes the F test with p value of 0.003. Durbin Watson value (2.345) provides an inconclusive decision ($D_{L=}$ 0.2681 D_U = 2.8320 at k = 6, n = 12) regarding autocorrelation. ROA is showing a positive coefficient for high value banks and NIM is showing some negative coefficients for those that are opposite of the results found for total sector. The significance of these coefficients has also changed here as these are now acceptable for confidence level ranging from about 22%-99% where it was about 86%-99% for total sector. However, the tolerance value and VIF of the predictors are in acceptable range here.

Table 11.0: Regression Result for High and Low Value Banks

	High Value Banks	Low Value Banks
R	0.979	0.994
R Square	0.957	0.989
Adjusted R Square	0.906	0.976

Durbin-Watson	2.345				2.685			
F	18.762				74.630			
Significance F	0.003				0.000			
	Unstandardized Coefficients	Sig.	Collinearity Statistics		Unstandardized Coefficients	Sig.	Collinearity Statistics	
	B		Tolerance	VIF	B		Tolerance	VIF
(Constant)	17.882	0.000			16.165	0.000		
ROA	0.099	0.652	0.329	3.036	- 0.343	0.017	0.169	5.921
NIM	- 0.116	0.487	0.461	2.169	0.675	0.010	0.187	5.348
CAR	0.072	0.279	0.224	4.463	0.164	0.009	0.098	10.241
LDR	0.007	0.780	0.317	3.156	0.008	0.729	0.127	7.850
CLR	- 0.071	0.100	0.385	2.595	- 0.048	0.011	0.531	1.885
PPS	- 0.168	0.014	0.210	4.764	- 0.103	0.037	0.144	6.931

For the low value banks, R value (0.994) indicates strong positive correlation between dependent and independent variables which is higher than the value found for high value banks. The coefficient of determination (0.989) is also higher than the one of high value banks (0.957). Durbin-Watson test has given an inconclusive decision and Significance F indicates statistical validity of the model. The coefficients are showing same sign with CEO compensation as of the total sector and except LDR, all are significant at 95% confidence level. The tolerance and VIF of the independent variables are also in acceptable range with slight deviation of CAR from acceptable level.

Model Application for Top and Bottom Tier Banks

24 banks of this study have been categorized into top tier and bottom tier banks based on their average total assets for 2004-15. Top tier category includes 8 banks representing 33.3% of the sample and holds 49.8% of total average assets of this sector where each constitutes more than 5%. In contrast, bottom tier banks include 16 banks comprising 66.7% of the sample and hold 50.2% of total average sector assets.

Table 12.0: Top Tier and Bottom Tier Banks

Top Tier Banks	Bottom Tier Banks	
Islami Bank Bangladesh Limited	EXIM Bank Limited	Uttara Bank Limited
Prime Bank Limited	Dutch-Bangla Bank Limited	IFIC Bank Limited
Rupali Bank Limited	Bank Asia Limited	NCC Bank Limited
Pubali Bank Limited	The City Bank Limited	Social Islami Bank Limited
National Bank Limited	Dhaka Bank Limited	Mutual Trust Bank Limited
United Commercial Bank Limited	Eastern Bank Limited	One Bank Limited
Southeast Bank Limited	Mercantile Bank Limited	Standard Bank Limited
AB Bank Limited	Al-Arafah Islami Bank Limited	ICB Islamic Bank Limited

From table 13.0, it can be seen that, for top tier banks, independent variables i.e. ROA, NIM, CAR, LDR, CLR, and PPS explain 97.7% of variability of the CEO compensation and the relationship is also statistically significant as significance F value is less than .05. But, the tolerance values indicate the presence of multicollinearity for CAR and PPS. On the other hand, for the bottom tiers banks, a positive strong correlation coefficient can be found. Here, the variance of independent variables captures 96.8% of variability of dependent variable and this relationship is also statistically significant (Significance F < 0.05). No conclusive decision can be drawn regarding the autocorrelation. The coefficients of predictors are showing same directional sign as for the total sector and CEO compensation changes the highest for 1 unit of change in NIM for bottom tier banks. Tolerance and VIF values are in acceptable level indicating that predictors are independent of themselves.

Table 13.0: Regression Result for Top and Bottom Tier Banks

	Top Tier Banks	Bottom Tier Banks
R	0.989	0.984
R Square	0.977	0.968
Adjusted R Square	0.950	0.930

Durbin-Watson	1.962				1.519			
F	36.033				25.207			
Significance F	0.001				0.001			
	Unstandardized Coefficients	Sig.	Collinearity Statistics		Unstandardized Coefficients	Sig.	Collinearity Statistics	
	B		Tolerance	VIF	B		Tolerance	VIF
(Constant)	15.391	0.000			17.714	0.000		
ROA	- 0.132	0.097	0.474	2.108	-0.144	0.414	0.333	3.003
NIM	0.283	0.184	0.132	7.600	0.409	0.188	0.200	4.995
CAR	0.171	0.072	0.043	23.436	0.073	0.089	0.481	2.079
LDR	0.010	0.621	0.189	5.301	0.004	0.861	0.424	2.356
CLR	- 0.052	0.012	0.447	2.235	-0.069	0.253	0.249	4.013
PPS	- 0.077	0.381	0.040	25.172	-0.137	0.018	0.337	2.965

8. Conclusions and Recommendations

The economy of Bangladesh is growing at rate of 6.6% (World Bank, 2016) and this growth is mostly driven by different businesses. To ensure that the pie each business is making is distributed among all the related stakeholders of that business based on their relative contributions, the necessity of strong corporate governance arises. A company is trusted with the resources of a society and corporate governance practices must make sure that the interest of different stakeholders like shareholders, management, customers, suppliers, financiers, government, and community, are taken care of.

The fulfillment of all of these interests is linked to the effectiveness of CEO of the concerned company who is selected by the board of directors of that company. CEO with his/her decision shapes the future of a company as we have seen in history, a good CEO like Steven Paul Jobs of Apple can lead a company to the triumph and bad fit like Olli-Pekka Kallasvuo of Nokia can drag a company to ground. To ensure that a CEO is acting for the best interest of the firm, the need of aligning CEO pay with the performance of firm is high. This need is also emphasized if we look at the failure of Enron or Lehman Brothers where CEOs have inflated their bank account

while leaving the stockholders with stocks worth of zero. To prevent such thing from happening in Bangladesh, there is a strong call for designing the compensation package of a CEO keeping the company's performance in the equation. In this regard, following steps are recommended for better design of CEO compensation in line with firm performance in context of Bangladesh, therefore, increasing the effectiveness CEO and contributing to the development of banking sector of Bangladesh.

- To define the pay-performance relationship for varied sector settings different pay-performance models need to be developed. Single model can't capture the varieties of different sector settings. For example, Islamic and Conventional banks may have different variables explaining this relationship, so thus, for private, public, and foreign banks.
- Bangladesh Bank should make it mandatory for each bank to provide more disclosures on CEO compensation. Different components of CEO compensation along with their justification should be provided in separate section of annual report.
- CEO compensation should be linked with standard performance measures of a bank which reflects both the accounting and capital market performance. These measures may differ according to structure and business strategy of a bank. A bank which focuses more on retail banking may have different criterion than the bank which focuses more on corporate banking.
- CEO compensation in Bangladesh is limited to basic salary, allowances, bonus, and bank's contribution to provident fund. Stock option has not introduced yet, therefore, CEO is not tied to stock market performance. Stock option can be introduced to make the CEO more responsible for developing better capital market exposure.
- A central database with all CEOs compensation information should be developed. It would be helpful for further study on this area and would contribute in better corporate governance

practice in Bangladesh. If all sectors are included in that database, then, cross sector comparison would have been possible and different approaches can be developed to address this issue for different sector.

References

Aduda, J. (2011), "The relationship between executive compensation and firm performance in the Kenyan banking sector", *Journal of Accounting and Taxation*, Volume 3, Number 6, pp. 130-139.

Barb, K. (1994), "CEO compensation and firm performance - are they related?", *The Park Place Economist*, Volume 2, Number 1, pp. 57-71.

Bebchuk, L. A. and Fried, J. M. (2003), "Executive compensation as an agency problem", *The Journal of Economic Perspectives,* Volume 17, Number 3, pp. 71-92.

Board, T. E. (2016), "*How excessive executive pay hurts shareholders",* http://www.nytimes.com/2016/07/14/opinion/how-excessive-executive-pay-hurts-shareholders.html, September 8, 2016.

Chowdhury, S. P., Chowdhury, H. A., Bhuyan, R., Abdullah, S. and Kuhle, J. (2012), "Executive compensation, performance, and size: Empirical investigation on banking sector in Bangladesh", *World Review of Business Research,* Volume 2, Number 3, pp. 62 – 77.

Duffhues, P. and Kabir, R. (2008), "Is the pay–performance relationship always positive? Evidence from the Netherlands", *Journal of multinational financial management*, Volume 18, Number 1, pp. 45-60.

Erick, T. K., Kefah, B. A. and Nyaoga, R. B. (2014), "The relationship between executive compensation and financial performance of insurance companies in Kenya", *Research Journal of Finance and Accounting,* Volume 5, Number 1, pp. 113-122.

Fallatah, Y. (2015), "CEO compensation, firm performance and corporate governance, an empirical investigation of Saudi Arabian companies", *Management Research Report*, Volume 3, Number 16, pp. 43-71.

Fernandes, N. (2005), "Board compensation and firm performance: the role of' "independent" board members", *ECGI-Finance Working Paper*, Number 104, pp. 1-32.

Gorré, E. A. (2011), "Executive compensation and firm performance: Analysis of Dutch listed firms", *MA Dissertation*, University of Amsterdam, Amsterdam, Netherlands.

Gregg, P., Jewell, S. and Tonks, I. (2011), "Executive pay and performance: Did bankers' bonuses cause the crisis?", *International Review of Finance*, Volume 12, Number 1, pp. 89-122.

Jensen, M. C. and Meckling, W. H. (1976), "Theory of the firm: Managerial behavior, agency costs and ownership structure", *Journal of Financial Economics,* Volume 3, Number 4, pp. 305-360.

Jeppson, C. T., Smith, W. W. and Stone, R. S. (2009), "CEO compensation and firm performance: Is there any relationship?", *Journal of Business & Economics Research*, Volume 7, Number 11, pp. 81-94.

Kato, T., Kim, W. and Lee, J. H. (2005), "Executive compensation, firm performance and chaebols in Korea: Evidence from new panel data", *IZA Discussion Paper*, No. 1783, http://dx.doi.org/10.2139/ssrn.548921, November 13, 2016.

Lau, A. and Vos, E. (2004), "Relation between CEO compensation, firm size and firm performance", *New Zealand Journal of Applied Business Research*, Volume 3, Number 1, pp. 51-64.

Liu, Y. (2011), "Executive Compensation and Firm Performance: Evidence from China's listed private SMEs", *MA Dissertation*, University of Amsterdam, Amsterdam, Netherlands.

Olalekan, O. C. and Bodunde, O. O. (2015), "Effect of CEO pay on bank performance in Nigeria: Evidence from a generalized method of moments", *British Journal of Economics, Management & Trade,* Volume 9, Number 2, pp. 1-12.

Olaniyan, S. O. (2015), "Executive compensation and the performance of non-financial firms on Nigerian stock exchange", *Journal of Research in National Development,* Volume 13, Number 2, pp. 1-7.

Ozkan, N. (2009), "CEO compensation and firm performance: An empirical investigation of UK panel data", *European Financial Management*, Volume 17, Number 2, pp. 260–285.

Ross, S. A. (1973), "The economic theory of agency: The principal's problem", *The American Economic Review*, Volume 63, Number 2, pp. 134-139.

Sigler, K. J. (2011), "CEO compensation and company performance", *Business and Economics Journal*, Volume 31, pp. 1-8.

Stanford Rock Center for Corporate Governance. (2016), "Americans and CEO Pay: 2016 Public Perception Survey on CEO Compensation", https://www.gsb.stanford.edu/faculty-research/publications/americans-ceo-pay-2016-public-perception-survey-ceo-compensation, November 10, 2016.

Tariq, U. (2010), "CEO Compensation: Relationship with Performance and Influence of Board of Directors", *MA Dissertation*, Gotland University, Cramérgatan, Sweden.

The World Bank. (WB). (2015), "Bangladesh", http://www.worldbank.org/en/country/bangladesh/, August 01, 2016.

Vittaniemi, J. (1997), "Top executive compensation and company performance in Finland", *Centre for Labour Market and Social Research Working Paper*, Volume 97, Number 10, pp. 1-33, http://pure.au.dk/portal/files/32301049/0001017.pdf, November 14, 2016.