

Executive Compensation, Performance, and Size: Empirical Investigation on Banking Sector in Bangladesh

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This study investigates whether performance indicators and size have any impact on executive compensation of commercial banks listed in the Dhaka Stock Exchange (DSE) Limited, Bangladesh. Several statistical models are deployed to test the influence of organization performance & size on the compensation of the executives. The results of this study show that there exists significant relationship between the executive compensation with organization performance and size. However, the outcome(s) of this study provides a general outlook to reduce the agency problem between the investors and managers of the banks listed at Dhaka Stock Exchange Limited, Bangladesh.

JEL Codes: G21, G35, F23, and G39

1. Introduction

Executive compensation and corporate performance has been an extensive debatable issue among management, shareholders, regulators, and academicians among others. This continued debate has generated a lot of interests to generate evidence from the reality and forecast its implications going forward. In practice, firms' performance and executive compensation has been under extensive scrutiny of stockholder, debt holders, analysts, and regulatory agencies, such as Securities and Exchange Commission. In the Anglo-Saxon model of corporate governance, the widely acclaimed principle-agent theory asserts that the (self-interested) managers may not always perform their tasks solely in the interest of shareholders. A firm with an aggressive diversification strategy whose environment is complex and yet rapidly changing is expected to provide its executives with a high level of managerial discretion. It is thus expected that performance based compensation plans (e.g., bonus and stock option) would be implemented in such an environment which is expected to minimize the monitoring costs for the firm. While reduction in monitoring costs, preventing management's shirking of duties thus to serve the best interest of the shareholders are targeted through pay- for performance system, it is yet to be determined whether pay for performance has achieved its goals or not. The literature is divided with both positive and negative findings and hence merits a further investigation on this issue. Even though the literature on executive compensation and firm's performance based on companies in developed nations are quite extensive, there is a very little literature on this issue on companies from developing nations and or emerging markets from around the world. We attempt to fill in that gap by bringing some

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evidence from Bangladesh-one of the emerging markets from South East Asia. That merits the purpose of our research to add to the literature on this issue related to emerging markets. We would address few questions related to this topic in the context of Bangladesh: (1) What are the determining factors behind the level of the executive compensation? (2) Is there any relationship between executive compensation and company performance? Finally, (3) Is there any relationship between executive compensation reporting and banks' performance in Bangladesh? Is the relationship causal? To investigate these questions, we conduct the following analysis: (1) Conduct a survey in the published annual report about the disclosure of executive compensation. (2) Find out the determining factors of the executive compensation in banking sector. (3) Determine whether some factors are more influential than others. (4) Investigate whether there is any relationship between executive compensation and companies' performances. (5) Find out whether there is any relationship between executive compensation and companies' size. Finally, (6) develop a model for pay-performance relationship.

After the recent financial collapse in the US, many pundits, scholars, regulators, and government bodies are questioning about the possible mal practice of executive compensation based on performance. It is now a serious concern in their eyes, whether moral hazard practice exists in the Wall street financial institutions where executives engage in dangerous and risky corporate practice for higher bonus that boost short term performance while endangering the financial prospect of the firm in the long run. US regulators are currently pondering about restricting the pay for performance practice so that what happen during the sub-prime loan practices in early 2000s causing the housing bubble and ultimately shaking the entire financial system never repeats. Even though the loan practice in Bangladesh in real estate is very conservative, and bankers have not been enticed by the Wall Street's practice of sub-prime loan, the issue of performance and executive compensation practice remains as an open question to academics and practitioners in Bangladesh just like the developed countries. Current literature is abundant in producing pay for performance in developed and many emerging markets. However, the issue has not been explored in case of Bangladesh-one of the rising emerging markets in South East Asia. Our research, therefore, contributes to the literature by providing evidence from emerging market of Bangladesh regarding this widely researched issue.

The rest of the paper is laid out as follows. Section two provides a survey of literature on executive compensation and corporate performance and relates our research question and motives to contribute to the literature. Section three entails the data and methodology. Section 4 describes the details of executive compensations for a variety of banking institutions. Section five offers the detailed results of econometric analysis. Finally, Section six concludes our research.

2. Literature Review

There is a vast literature studying the relationship of (1) executive compensation and organizational performance, (2) the role of managerial discretion in executive pay and performance, and (3) relationship between size of the corporation and executive pay on

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developed countries. Magan and St-Onge (1997) investigate how the relationship between bank performance and executive compensation is affected by the degree of an executive's managerial discretion. They find that the executive level of managerial discretion is positively influenced the strength of relationship between the executive compensation and bank performance; this means executive compensation is more related to bank performance in a context of high managerial discretion than low managerial discretion. They also discover that bank size is positively related to executive compensation, but managerial discretion has no impact on the relation between size and executive compensation. Baber, Kang, and Kumar (1999) suggest that earnings levels, earnings changes, and earnings persistence need to be considered when investigating relations between accounting earnings and executive compensation. They demonstrate that executive compensation revisions are greater when earnings innovations are permanent, then when innovations are transitory. Their analysis implies that the weights on earnings changes vary directly with the persistence of earning innovations and that weight on earnings levels vary directly with persistence for low persistence observations and inversely with persistence with high persistence observations. Indjejikian and Nanda (2002) study the determinants of executives' target bonuses and what target bonuses imply about an important component of management control systems- performance standards. They focus on target bonuses because target bonuses reflect firms' design decisions and are unaffected by post events. They find that CEOs' and lower level business units executives target bonuses are negatively associated with a proxy for measurement noise in accounting based performance measures, and positively associated with proxies for firms' growth opportunities and the extent of executives' decision making authority. Non CEO- executives target bonuses are positively associated with their CEO's target bonus. They also find that firms do not adjust standards to fully reflect executive past performance. They suggest discounting the past performance in setting future compensation so that a firm can better motivate their employees. In their study, Conyon and Peck (1998) gather information of publicly traded U.K. companies between 1991 and 1994 to examine the role of board control and remuneration committee in determining the management compensation. They find that board monitoring, measured in terms of the proportion of non executive directors on a board and the presence of remuneration committee and CEO duality has only a limited effect on the level of top management payment. They also reveal an important conclusion that top management pay and corporate performance are more associated with both a company's main board and its compensation committee. Duffhues and Kabir (2008), investigate the pay-performance relationship of Dutch listed companies. Their findings fail to detect the positive relationship between executive compensation and firm performance. They also find that powerful managers can influence their own compensation and managerial entrenchment is more likely to take place when there is less corporate governance pressure. They also observe that many executives received pay for non-performance related reasons. Lambert, Larcker, and Weigelt (1991) test the relationship between the level of executive pay and firm size. They analyze compensation and firm size for executives at several levels of the corporate hierarchy. Their results indicate that the correlation between compensation and size is much smaller, although still statistically significant, in changes than in levels. They also observe that changes in organization size, whether measured at the corporate or business level, do not exhibit a high correlation with changes in compensation. Baber, Daniel, and

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Roberts (2002) investigate the association between accounting based performance measures and the compensation paid to the executives of charitable organizations. They find no evidence whether charitable organization use accounting measures for setting executive compensation, however, they are able to assess that those charitable organizations rewarded managers for the actions which increased the fund directed toward the charitable objective. They suggest that accounting performance measure can play a vital role in non profit organizations whose objectives are typically subjective and non-financial. The literature on pay for performance relationship provides inconclusive results. Murphy (1999) and Core et.al (2003) offer an extensive survey of this literature based on US firms covering variety of issues related to executive compensation and firm's performance where they find positive relationship in the context of pay for performance analysis. However, Core et al (1999) evidence that excess executive compensation is significantly negatively associated with subsequent stock and operating performance of the firm. Brick et al. (2006) also find a negative relationship between excess director compensation and firm performance. Conyon and Murphy (2000) and Buck et. al. (2003) document that pay- performance sensitivity is very low for UK firms, and Haid and Yuroglu (2006) for Germany. Zhou (2000) finds a very weak relationship on Canadian firms. Firth et.al. (2006) and Kato and Kubo (2006) find positive relationship for Chinese and Japanese firms. Finally, Fernandez (2006) find no relationship between pay-performance for Portuguese firms.

3. Data and Methodology

This study is based on secondary data collected through direct assistance of the Security Exchange Commission of Bangladesh. The secondary data is collected from the annual reports of 8 years (2000-2007) of the banking companies listed at Dhaka Stock Exchange (DSE) Limited, Bangladesh. For few cases, because some banks were listed later with the DSE, such as Export Import Bank Limited (listed in 2004), Jamuna Bank Limited (listed in 2006), Trust Bank Limited (listed in 2007), data are available from the day these company become public. There are total 29 listed banking companies in Dhaka Stock Exchange (DSE) Limited, Bangladesh as on 14th August, 2008. Out of 29 banking companies, this study considers 23 companies (79.31%) that contains total equal length of time for all banks for the sake of our study.

In this study, the key performance indicators (KPIs) and firm-size are considered as independent variables and executive compensation as dependent variable. The executive compensation can be constructed in two proxy measure, i.e. cash compensation (consists salary, bonus, and other cash payments) and total compensation (consisting of the sum of cash compensation and estimated market value of the stock option). This study considered only cash compensation, because it is available in the annual reports. The key performance of banking sector is measured by considering several determinants, such as, return on assets (ROA), return on equity (ROE), net interest margin (NIM), earnings per share (EPS), price-earnings (P/E) ratio, loan to deposit ratio (LDR), classified loan to total loan ratio (Class/TL), capital adequacy ratio (CAR), cash dividend (CDIV) and stock dividend (SDIV). The firm size is measured by the amount of total assets of the organization.

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However, to identify the extent of relationship between executive compensation and firm performance and firm-size, this study has two approaches. In the first phase, simple mathematical tools are used to identify a preliminary tendency in the movement of executive compensation in tandem with key performance indicating variables (KPIs) and firm-size. In the second phase, statistical tools are applied to justify the findings in the first phase. Our hypothesis under question is: "There is no relationship between executive compensation and different firm performance indicators". Both simple and multiple regression models are developed and corresponding F-test are conducted to judge the validity of those models. In case of simple regression analysis, the following general model has been used:

$$EC = c + mx \text{ -----} \quad (1)$$

Where, EC = Executive compensation, c = Intercept/Constant value in the equation, m = Coefficient of the independent variable, x = Independent/Predictor variable. In case of multiple regression analysis, the following general model has been used:

$$EC = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_nX_n \text{ -----} \quad (2)$$

Where, EC = Executive compensation, a = Intercept/constant value in the equation, b_1 , b_2 , b_3 ... b_n = Net regression coefficients, X_1 , X_2 , X_3 ... X_n = Independent/Predictor variables.

The key contribution of this research is to add new finding to the current literature regarding the executive compensation and firm performance in the context of Bangladesh.

4. Analysis on Executive Compensation, KPIS, and Firm Size

We calculated year-wise average executive compensation of the sample banks listed at Dhaka Stock Exchange (DSE) Limited for the period 2000 to 2007. Here, we have taken taken into consideration the following items: salaries & fees, bonus, provident fund, allowances and others. Now, let's observe the variables corresponding to KPIs and firm size:

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Table 1: Year-wise average executive compensation of the banks listed at DSE (in million BDT)

	Salaries & fees	Bonus	PF	Allowances + Others	Executive Compensation
2000	0.85	0.0044	0.0019	0.0188	0.8782
2001	1.24	0.0096	0.0013	0.0111	1.2572
2002	1.44	0.1609	0.0192	0.1346	1.7517
2003	1.58	0.2265	0.0524	0.2733	2.1310
2004	1.90	0.4285	0.0485	0.4329	2.8097
2005	2.21	0.3654	0.0513	0.4711	3.0971
2006	2.13	0.5753	0.0838	0.7475	3.5409
2007	1.88	0.4143	0.0735	0.6604	3.0305

Source: Annual Report

Table 2: Year-wise average KPIs of the banks listed at DSE

	2000	2001	2002	2003	2004	2005	2006	2007
ROA	0.72	0.92%	1.15%	1.24%	4.44%	1.35	1.37%	1.11%
	%					%		
ROE	14.45	20.06	21.81	20.45	19.38	36.11	18.21	13.13%
	%	%	%	%	%	%	%	
NIM	0.41	0.52%	0.80%	0.82%	0.82%	2.13	1.86%	2.23%
	%					%		
EPS (in BDT)	64.6	108.92	121.2	65.93	69.13	79.57	81.56	45.66
			5					
P/E	86.25	166.18	611.2	714.35	783.5	621.9	574.3	867.97%
	%	%	8%	%	4%	0%	9%	
LDR	46.57	50.19	58.61	66.88	67.51	71.32	70.97	45.97%
	%	%	%	%	%	%	%	
Class/TL	8.17	8.11%	8.33%	9.22%	5.87%	4.48	3.13%	2.03%
	%					%		
CAR	4.70	4.69%	6.56%	8.70%	8.72%	8.68	9.33%	7.59%
	%					%		
CDIV	8.96	10.77	9.35%	7.61%	7.20%	5.96	7.83%	2.57%
	%	%				%		
SDIV	1.52	2.78%	8.22%	9.91%	11.39	12.48	8.80%	30.52%
	%				%	%		

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Table 3: Year-wise average size of the banks listed at DSE (measured by total assets)

Year	Amount of aggregate total assets of the banks (in million BDT)
2000	12099.578
2001	16232.457
2002	20416.147
2003	23971.209
2004	27499.816
2005	32612.087
2006	38042.672
2007	28287.925

By analyzing the above tables, it is deducible that both executive compensation and firm size increases year to year before 2007. In 2007, both executive compensation and firm size decreased for the banks listed at DSE. However, out of 10 KPIs, ROA, ROE, EPS, LDR, Class/TL, CAR, CDIV decreased in 2007 in comparison with the previous year. From this finding, we can observe a relationship between these variables. Now, we will try to find out a pattern of relationship between executive compensation, KPIs and firm-size in two phases. The first phase will focus on general analysis, which will be followed by a statistical analysis. Here, year-wise growth rate of executive compensation, KPIs, and total assets (firm-size) of the banks are calculated. Here, average growth rate of all the KPIs in an individual year is taken in aggregate.

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Table 4: Growth rate of executive compensation & Average KPIs

Year	Growth rate in Executive Compensation	Average growth rate before and after 2003	Growth rate in Average KPIs	Average growth rate before and after 2003
2000	-	34.72%	-	28.85%
2001	43.16%		32.23%	
2002	39.33%		50.74%	
2003	21.65%		3.59%	
2004	31.85%	10.50%	26.49%	7.84%
2005	10.23%		16.94%	
2006	14.33%		11.01%	
2007	14.41%		1.06%	
Average	20.88%		16.85%	
Difference		24.22%		21.01%

From table 4 and 5, it can be observed that executive compensation of the banks grows more than the growth in KPIs and firm-size during our period of analysis. That is a positive sign from the perspective of agency issues. After 2003, three of the variables experienced fall in growth rate but executive compensation falls very rapidly than KPIs and firm-size. This indicates that for a given decrease in performance and firm-size, executive compensation decreased more after 2003. If this situation continues to exist in the coming years, the agency problem may arise. Above all, the finding is executive compensation moves in tandem with change in KPIs and firm-size to the same direction.

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Table 5: Growth rate of firm-size

Year	Growth rate in Firm Size (Total Assets)	Average growth rate before and after 2003
2000	-	25.78%
2001	34.16 %	
2002	25.77 %	
2003	17.41 %	
2004	14.72 %	6.08%
2005	18.59 %	
2006	16.65 %	
2007	- 25.64 %	
Average	14.52 %	
Difference		19.70%

We conducted simple regression analysis between total executive compensation and KPIs & firm-size to get the idea about individual influence of the KPIs on executive compensation. The key findings are reported in Table 6.

From Table 6, we can easily observe that net interest margin (NIM) ratio, classified loans as percentage of total loans (Class/TL), capital adequacy ratio (CAR) had strong influence on executive compensation, which is also supported by the corresponding p-value of F-test. However, other KPIs individually didn't show significant influence on executive compensation. Executive compensation and firm size have an obvious positive relationship. The extent of dependency of executive compensation on firm-size is very much higher. However, p-value of F-test confirms the validity of the model.

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Table 6: Simple regression analysis

Simple regression equation	r^2	F-test value	p-value of F-test
EC = 1.97 + 27.4 ROA	9.1%	0.60	0.468
EC = 1.86 + 2.61 ROE	2.8%	0.18	0.690
EC = 0.892 + 125 NIM	74.3%	17.31	0.006
EC = 3.67 - 0.0160 EPS	13.4%	0.93	0.372
EC = 0.820 + 0.284 P/E	54.6%	7.22	0.036
EC = 0.92 + 5.54 LDR	30.9%	2.69	0.152
EC = 4.51 - 34.3 Class/TL	73.3%	16.47	0.007
EC = 1.31 + 50.3 CAR	74.5%	17.54	0.006
EC = 4.62 - 29.6 CDIV	46.1%	5.13	0.064
EC = 1.56 + 7.76 SDIV	40.6%	4.11	0.089
EC = 0.682 + 0.000123 TA	94.9%	112.35	0.000

We also conduct multiple regression analysis in two parts. In the first part, we have checked the relationship between executive compensation and KPIs. In the second part we have checked the significance of relationship of executive compensation with total assets. However, we have applied step-wise multiple regression analysis in order to find out most significant variables influencing the executive compensation. In Table 7, we have

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presented several outcomes of our step-wise multiple regression analysis. In the first model, we have considered only 3 profitability indicating variables. Then we gradually increase the number of independent variables. As we move towards incorporating some more variables (both profitability and others), the extent of dependency of executive compensation on the KPIs looks stronger. Ultimately, we have got our last equation, where we can see that the 99.8% of the variations in executive compensation during our period of analysis were explained combinedly by ROA, ROE, NIM, P/E, LDR and CDIV. However, p-value of F-test states that the model is statistically valid at 92.2% confidence level.

Table 7: Multiple regression analysis: Executive compensation Vs. KPIs

Multiple regression equation	r ²	p-value of F-test
EC = 0.601 + 34.5 ROA - 1.69 ROE + 134 NIM	89.2 %	0.021
EC = 0.547 + 30.2 ROA - 1.56 ROE + 125 NIM + 0.036 P/E	89.5 %	0.079
EC = 0.10 + 33.2 ROA - 2.61 ROE + 136 NIM + 0.034 P/E + 0.0061 EPS	90.7 %	0.216
EC = - 0.992 + 17.0 ROA - 5.94 ROE + 126 NIM - 0.0101 P/E + 4.82 LDR	99.0 %	0.025
EC = 1.73 - 18.1 ROA - 1.80 ROE - 34 NIM + 0.121 P/E + 5.35 LDR - 34.9 Class/TL	99.6 %	0.121
EC = - 1.78 + 20.9 ROA - 5.93 ROE + 152 NIM + 0.0371 P/E + 3.61 LDR + 11.6 CDIV	99.8 %	0.078

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Table 8: Multiple regression analysis: Executive compensation Vs. KPIs & firm-size

Multiple regression equation	R ²	p-value of F-test
EC = 0.397 + 8.50 ROA - 0.692 ROE - 2.76 LDR + 0.000147 TA	99.6%	0.001

Table 9: Multiple regression analysis: Individual Banks

Name of the bank	Multiple regression equation	r ²	p-value of F-test
1. United Commercial Bank Limited (UCBL)	EC = - 1.43 + 32.0 ROA + 5.55 ROE + 2.9 LDR	75.2%	0.193
2. The City Bank Limited	EC = 14.4 + 569 ROA - 26.8 ROE - 0.0536 P/E - 13.0 LDR	78.5%	0.383
3. Dutch-Bangla Bank Limited	EC = - 3.77 - 106 ROA - 17.9 ROE + 0.026 P/E + 19.1 LDR + 1.1 CDIV	97.0%	0.074
4. Eastern Bank Limited	EC = - 39.0 - 1650 ROA + 228 ROE + 156 NIM - 0.314 P/E + 42.2 LDR - 1.01 CDIV	99.7%	0.101
5. EXIM Bank Limited	EC = - 0.77 + 184 ROA + 3.2 ROE	80.3%	0.444
6. IFIC Bank Limited	EC = 2.03 + 149 ROA - 9.77 ROE	93.7%	0.250

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7. Islami Bank Limited	EC = 5.71 - 1276 ROA + 61.0 ROE + 0.194 P/E + 1.95 LDR - 13.9 CDIV	99.6%	0.111
8. Mercantile Bank Limited	EC = - 1.56 + 1817 ROA - 55.9 ROE + 52.7 NIM - 11.9 LDR	99.6%	0.098
9. Mutual Trust Bank Limited	EC = 0.0 + 340 ROA + 4.2 ROE - 8.7 LDR + 0.191 P/E	44.9%	0.909
10. National Bank Limited	EC = - 9.58 + 120 ROA + 33.1 ROE + 6.12 LDR + 0.129 P/E - 2.2 CDIV	90.6%	0.219
11. Jamuna Bank Limited	EC = 13.0 - 393 ROA + 1.81 ROE	96.1%	0.198
12. National Credit & Commerce (NCC) Bank Limited	EC = - 8.53 - 110 ROA + 22.3 ROE + 8.83 LDR	73.7%	0.624
13. One Bank Limited	EC = - 5.44 - 51.4 ROA + 6.54 ROE + 9.54 LDR - 0.0348 P/E - 2.58 CDIV	90.7%	0.217
14. Prime Bank Limited	EC = 7.5 - 1152 ROA + 56.1 ROE + 374 NIM - 6.2 LDR - 0.204 P/E + 26.2 CDIV	68.5%	0.852

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15. Pubali Bank Limited	EC = 0.073 + 162 ROA - 8.40 ROE + 4.11 LDR	86.1%	0.035
16. South-East Bank Limited	EC = 12.3 + 725 ROA - 62.9 ROE - 9.8 LDR + 424 NIM - 2.87 CDIV	90.0%	0.231
17. Social Investment Bank Limited	EC = 0.11 - 5.75 ROA + 11.0 ROE + 3.81 LDR - 109 NIM	89.1%	0.206
18. Rupali Bank Limited	EC = 0.227 + 2.52 ROA + 0.0200 ROE + 0.002 LDR	66.4%	0.459
19. Uttara Bank Limited	EC = 11.4 + 13 ROA + 2.0 ROE + 3.79 P/E - 12.8 LDR - 3.01 CDIV	87.3%	0.289
20. AB Bank Limited	EC = - 0.81 + 400 ROA - 33.8 ROE - 0.0775 P/E + 10.7 LDR	88.5%	0.091
21. Dhaka Bank Limited	EC = 67.1 - 2954 ROA - 129 ROE + 133 NIM	99.4%	0.049
22. Standard Bank Limited	EC = 3.80 - 89.7 ROA + 5.72 ROE	80.9%	0.437
23. Trust Bank Limited	EC = 8.52 + 144 ROA - 21.9 ROE	82.5%	0.419

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In Table 9, we will check whether this model fits for individual banks or not.. We tried to incorporate the best model we have got in the previous analysis. But, for some banks we actually couldn't incorporate all the variables. There are some banks for which we could take only a few variables.

From Table 9, we can see that out of 23 banks, only 10 banks showed more than 90% value of r^2 . Out of these 10 banks, only 3 banks' (Dutch-Bangla Bank Limited, Mercantile Bank Limited, and Dhaka Bank Limited) model had the confidence level more than 90%. From the above findings, we can say that though our last model in step-wise regression yields a good result in aggregate but it is not applicable exactly for all the sample banks. In spite of having such finding, we can safely say that obviously executive compensation depended on key performance indicators during our peiord of analysis. If the bank performed well (the higher KPIs), it compensated the executives accordingly. However, now we will try to focus on developing a more effective model on which we can rely more. We will incorporate firm-size with some KPIs in our next model: The equation in Table 8 states that ROA, ROE, LDR, and TA combinedly explained 99.6% of the variations in executive compensation during our period of analysis and this model is statistically valid with 99.9% confidence level. This model is a bit better than the other model we have selected previously from the perspective of reliability. However, from all the models presented here, we can say that executive compensation of the scheduled commercial banks listed at DSE had a certain relationship with KPIs and firm-size.

5. Conclusion

This study finds that executive compensation of the banks listed at Dhaka Stock Exchange (DSE) Limited has a very significant relationship with performance and size of the banks. If the banks tend to decrease the executive compensation though they are experiencing better performance and larger size, they will be prone to agency problems because in the banks' better performance, the executives definitely have some contributions and when an organization expands (the size increases), the executives are required to exert more effort. So, from both of these perspectives, better performance and larger size should correspond to increase in executive compensation.

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