

Non-Performing Loan and Profitability: The Case of State Owned Commercial Banks in Bangladesh

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Non Performing Loan (NPL) in Bangladesh has become a very frequently raised question in recent years. This problem has started to be widening with an evil trend of loan embezzlement among the industrial borrowers in our country. Frequent scam series in banking industry is surely a red light and unfortunately the state owned commercial banks (SCB) are highly surrounded by it. This paper attempts to find out the time series scenario of NPLs, its growth, provisions and relation with banks profitability by using some ratios and a linear regression model of econometric technique. The empirical results represent that NPL as percentage of total loans of SCBs is very high and they holds more than 50 % of total NPLs of the banking industry from FY2006 to FY2013. Moreover it is one of the major factors of influencing banks profitability and it has statistically significant negative impact on Net Interest Income of SCBs for the study periods. This paper can be a means to understand the effect of excess NPLs on the performance of banks and to take initiatives to control it.

Keywords: Non-performing Loans, Linear Regression Model, Profitability, State Owned Commercial Banks in Bangladesh.

1. Introduction

Non-performing loans refer to those financial assets from which banks no longer receive interest or installment payments as scheduled. It is a very critical but frequent issue in bank fund management and the present situation of NPLs in Bangladesh is a topic of great concern. It can bring down investors' confidence and if created by the borrowers willingly and left unresolved might act as a contagious financial malaise by driving good borrowers out of the financial market. The volume of default loans of state owned commercial banks in Bangladesh (BD) has been increasing at an alarming rate. It is not a new issue but the tendency of fraud, embezzlement and loan default is in a serious situation in recent years due to excessive political interference and illegal interruption of the concerns. The amount of total NPLs in the banking system of BD was Tk 523.1 billion at the mid of 2013, which was 200.1 billion in 2006. The amount doubled within 8 years. For last 8 years, loan default as a percentage of outstanding loans in state owned commercial banks was 50% or above where Private commercial banks and foreign commercial banks and hold maximum 5-10 % amount of the total.

Different researchers studies regarding factors affecting NPLs, problems and prospects of banking sectors, causes and effects of NPLs in banking sector etc. But unfortunately, no particular study on effects of NPLs on profitability of SCBs in Bangladesh has been conducted

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yet in spite of regular catastrophic scam series for almost one decade. If it continues then it may put the entire banking sector in an embarrassing situation.

Although Bangladesh Bank has given ultimatum to banks to bring down their soaring NPLs to below 10 per cent of their respective outstanding loans, SCBs did not follow the guidelines for decade. This paper can help to have a good idea of actual scenario of loan management statistics of the SCBs and to take initiatives to come out of this trend. It will save the SCBs from facing a significant ratio of Credit/Default risk, Liquidity risk, reputational risk etc chronologically. The general people will feel secured; depositors will get their confidence back on those banks and may not be tempted to withdraw their deposits in fear of collapse of banking sector like stock market crash.

The major objective of the study is to find out the effect of NPLs on profitability of SCBs in Bangladesh considering current situation of NPLs, comparative position and risk weighted capital adequacy. In this paper, focus has been given on SCBs as maximum portion of total NPLs of the industry is covered by them.

The study is constructed with four parts. First part includes introduction, literature review, objectives, limitations and methodology. A comparative scenario of capital adequacy, NPLs and ROE of SCBs with Private Commercial Banks (PCBs) and Foreign Commercial Banks (FCBs) for the selected periods is presented in 2nd part of the paper. Third section is confined with a statistical analysis based on selected data of the SCBs for the study period. A multiple regression model is used here to make out the relationship of selected variables. Finally, the paper is closed with some concluding remarks based on the result found and limitations of the study.

2. Literature Review

Lending decision of a bank is very important because it determine the future profitability and performance of the bank. Recently banks are becoming more and more conscious in customer selection to avoid the negative impact of bad loan or NPLs. The issue of NPLs has gained increasing attentions in the last few decades. Amounts of bad loans are alarmingly increasing in not only the developing and under developed countries but also in developed countries. Banks' lending policy could have crucial influence on NPLs. A default is not entirely an irrational decision. Rather a defaulter takes into account probabilistic assessment of various costs and benefits of his decision. Lazy banking' critically reflects on banks' investment portfolio and lending policy (Reddy & Mohan (2003); Sinkey (1991) & Dash (2010)

The immediate consequence of large amount of NPLs in the banking system is bank failure as well as economic slowdown. The causes of NPLs are usually attributed to the lack of effective monitoring and supervision on the part of banks, lack of effective lenders' recourse, weaknesses of legal infrastructure, and lack of effective debt recovery strategies (Adhikary, 2006). There is no global standard to define NPLs at the practical level. Variations exist in terms of the classification system, the scope, and contents. Such problem potentially adds to disorder and uncertainty in the NPL issues. NPLs have non-linear negative effect on banks' lending behavior (Hou, 2001)

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The presence of an alarming amount of NPLs both in the Nationalized Commercial Banks (NCBs) and in the Development Financial Institutions (DFIs), along with maintenance of inadequate loan loss provisions, diminishes the overall credit quality of Bangladesh. Poor enforcement of laws relating to settlement of NPLs, followed by insufficient debt recovery measures on the part of the banks, has also aggravated the financial malaise. (Adhikary,2007). Pre-election has an influencing power in the regulatory side of the financial sector. The Government and Bangladesh Bank appear to be under pressure due to this. This becomes evident with the relaxation of the guidelines issued by Bangladesh Bank on defaulters accessing fresh loans. This is clearly not an easy environment to operate in and specific steps should be taken to prevent the situation from further deteriorating and undermining the banking sector. (Wallich,2006). NPLs are increasing due to lack of risk management, which threatens the profitability of banks. This study provides suggestion that banking sector can avoid their NPLs by adopting methods suggested by the central bank of perspective country (Haneef & Riaz, 2012)

The loan performance is put into relation with macroeconomic indicators such as nominal interest rate, inflation rate, change in real GDP, economic growth, unemployment, and the change in terms of trade. One of the problems of such approach, taking macroeconomic variables as exogenous is that they are concurrently affected by a distress in the banking sector(Foglia, 2008). NPLs are regressed on three sets of factors in terms of credit, banks size induced risk preference and macroeconomic shocks. The panel regression models show the terms of credit variables to be significant. The estimated coefficient on changes in cost of credit because of expectation of higher interest rate is positive. On the contrary, horizon of maturity of credit, better credit culture, and favorable macroeconomic and business conditions decrease the NPLs (Ranjan & Dhal, 2003). GDP growth is inversely related to NPL, suggesting that an improvement in the real economy translates into lower NPL. It is also found that banks which charge relatively higher interest rates and lend excessively are likely to incur higher levels of NPLs (Khemra, Saba & Pasha, 1987).In making lending decisions, banks are assumed to react differently to NPL ratios above or below a threshold. With NPLs above the threshold has an adverse effect on lending. Bank's lending behavior could restrain economic activity, especially in periods of stress when NPLs are high (Tracey 2011); (Sinkey and Greenawalt 1991).

Although NPLs are negatively related to banks' profit efficiency, it is not statistically significant (Fan and Shaffer 2004).All the selected independent variables(Real GDP per Capita, Inflation, and Total Loans as independent variables) have significant impact on the depended variable(NPLs Ratio), however, values of coefficients are not much high. Banks should control and amend their credit advancement policy with respect to mentioned variables to have lower NPLs ratio (Saba, Kouser & Azeem 2012); Dash (2010). To bit simultaneous equation regression results clearly indicate that higher NPLs reduce cost efficiency and lower cost efficiency increases NPLs. The result also support the hypothesis of bad management proposed by Berger and De Young (1992) that poor management in the banking institutions results in bad quality loans, and therefore, escalates the level of NPLs (Calice2012).An empirical result of econometric model based on a study on Guyana show that GDP growth is inversely related to non-performing loans, suggesting that an improvement in the real economy translates into lower non-performing loans. We also find that banks which charge relatively higher interest rates and lend excessively are likely to incur higher levels of non-performing loans (Khemraj&Pasha2006)

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The reviewed past studies presented the relationship of NPLs with banks lending policy, credit quality, horizon of maturity of credit, better credit culture, favorable macroeconomic and business conditions, lack of risk management, GDP growth, interest rates etc. Relationship of NPLs and overall banks' profit efficiency are found and it was not statistically significant (Fan and Shaffer 2004). But the SCBs of Bangladesh is specially suffering by the excessiveness of it and unfortunately no specific research is conducted to represent the situation yet. This paper aims to fill the gap with relevant arguments.

3. Methodology

In this paper, some financial factors are identified that are directly or indirectly related to profitability and performance of a bank. Time frame of the analysis is 8 consecutive years, that is, in this study data has been used from 2006 to 2013. To have a scenario of performance, several ratios have taken into consideration. The ratios are Capital to risk weighted asset, NPLs to Total Loans, NPLs of SCBs as % of total etc. The comparative position of SCBs with PCBs and FCBs are conducted based on position of NPLs and scenario of ROE for the study period. To measure the effect of NPLs on profitability of SCBs 4 hypothesis has been developed and tested with Correlation, Regression & ANOVA from a SPSS output. All the commercial banks operating in Bangladesh are considered as population in this study. The number of population is 47 including 9 foreign commercial banks. Among 47 commercial banks Sonali Bank Ltd, Janata Bank Ltd, Rupali Bank Ltd and Agrani Bank Ltd have been selected as sample so the number of sample of the study is 4.

Secondary data has been used in preparing this research paper. The sources of data are Bangladesh Bank Library, Credit Information Bureau, Annual Reports of Sonali Bank Ltd, Janata Bank Ltd, Rupali Bank Ltd and Agrani Bank Ltd, Articles and research papers from reputed journals. The collected data has been processed and analyzed both manually and with the help of electronic devices.

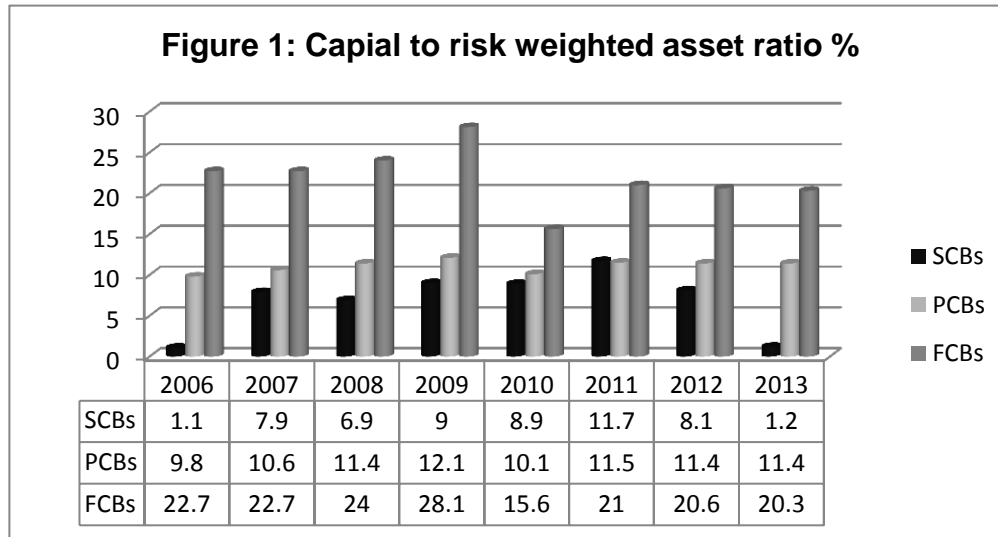
4. Findings and Analysis

The analysis part of the study is constructed with two parts. First part includes a comparative scenario of capital adequacy, NPLs and ROE of State Owned Commercial Banks with Private Commercial Banks. Second part is confined with a statistical analysis based on last 8 years data of the SCBs.

4.1 Comparative Scenario Analysis

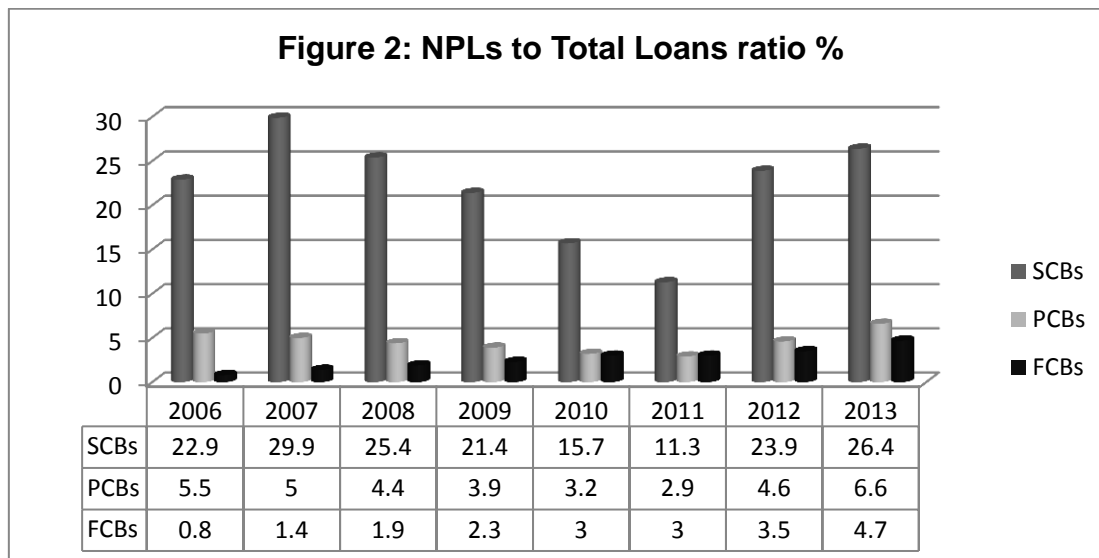
Some research regarding identification, measurement, causes and effect analysis of NPLs has been done by scholars of our country in different times both issues within country as well as cross boarder comparison. Nonperforming loans in the banking sector of BD, realities and challenges of NPLs in BD, Impact of supervisions in controlling NPLs are some frequent topics of articles published in reputed journals in our country in recent years. SCBs in our country holds major proportion of total deposit of the hole industry but it is very unfortunate to see the regular default of loan recovery and scams by them in recent times. So to realize the impact of this evil practice on their performance is a need of time. This paper focuses some factors directly or indirectly affects their performance that may quest the thrust to some extent.

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Source: Banking Performance Indicators, Appendix-3 (Table II), Banking regulation & Policy Department, Bangladesh Bank, (2005-2013)

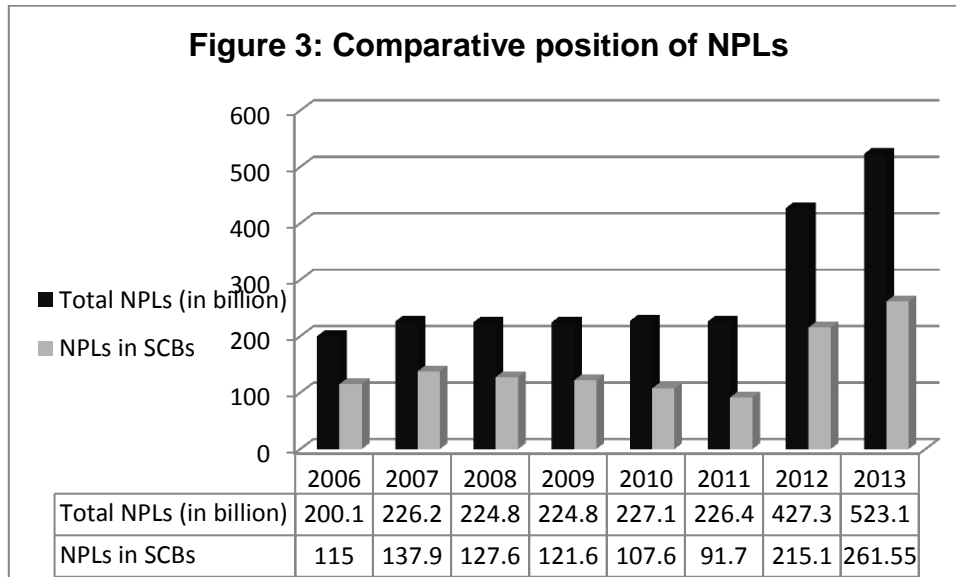
Non Performing Loan Rate is the most important issue for banks to survive. There are lots of factors responsible for this ratio. Some of them belong to firm level issues and some are from macroeconomic measures. Capital to risk weighted assets of SCBs for the selected 8 years is very much dissatisfactory. In FY 2006 it was 1.1 % that was really alarming but gradually they started to recover it and in FY 2010 it reached up to 8.9% which reaches up to 11.7 % in 2011 that is the highest among all the years. But in 2012 it decreases to 8.1 % and drastically fell in 2013 by touching only 1.2%. If we make a comparison the ratio of SCBs with PCBs and FCBs then we easily have a clear idea about the competitive scenario. The lowest value of PCBs and FCBs are 9.1 % and 15.60% respectively where the highest value of SCBs is below than 9%. (See Figure 1)



Source: Banking Performance Indicators, Appendix-3 (Table III), Banking regulation & Policy Department, Bangladesh Bank, (2006-2013)

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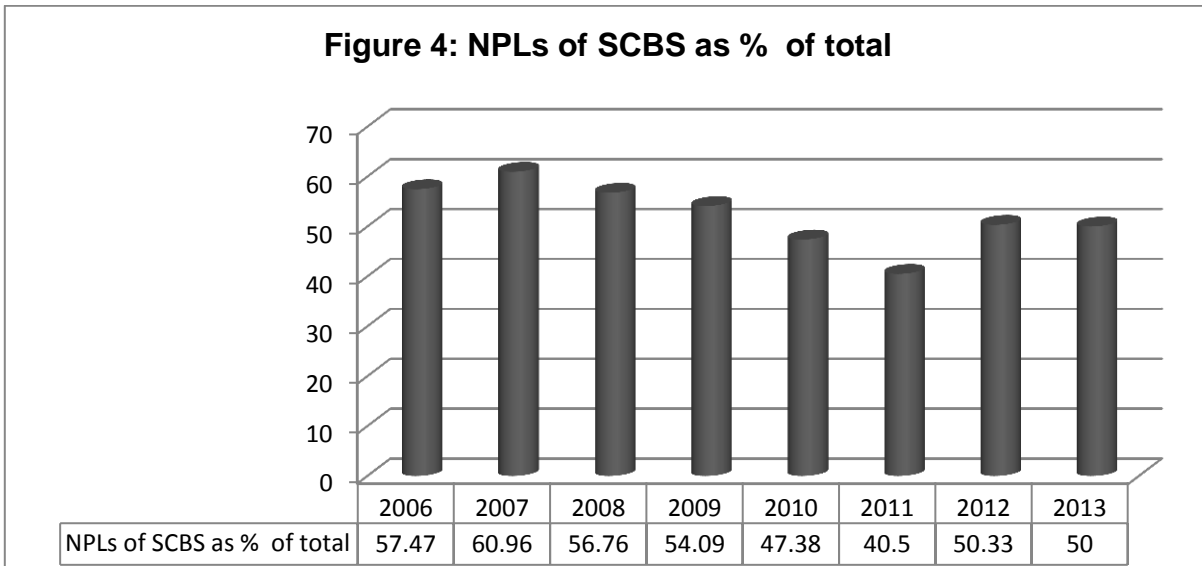
NPL is a general factor for banking as it is acceptable up to a certain limit. How much loans are being non- performing each year is a relevant measurement in this regard. NPLs to total loans ratio for SCBs for selected 8 years is really alarming as most of the years it holds more than 20% NPLs as per Total Loans and Advances. In 2010 there was a breakthrough in NPL ratio in SCBs as it shows a negative growth rate of -0.27% and the ratio was 15.70 that was a positive sign but it could not keep it up rather it touches 26.4 % in 2013 that is surely alarming. (See Figure 2) If we make a comparison among three categories of banks we find that PCBs has maximum NPLs in 2013 and the ratio was 6.6 % and in maximum years they are maintaining a limit within 5%. Again, FCBs are performing with a great excellence in this topic by maintaining the limit of NPLs ratio within 3% in every selected years.



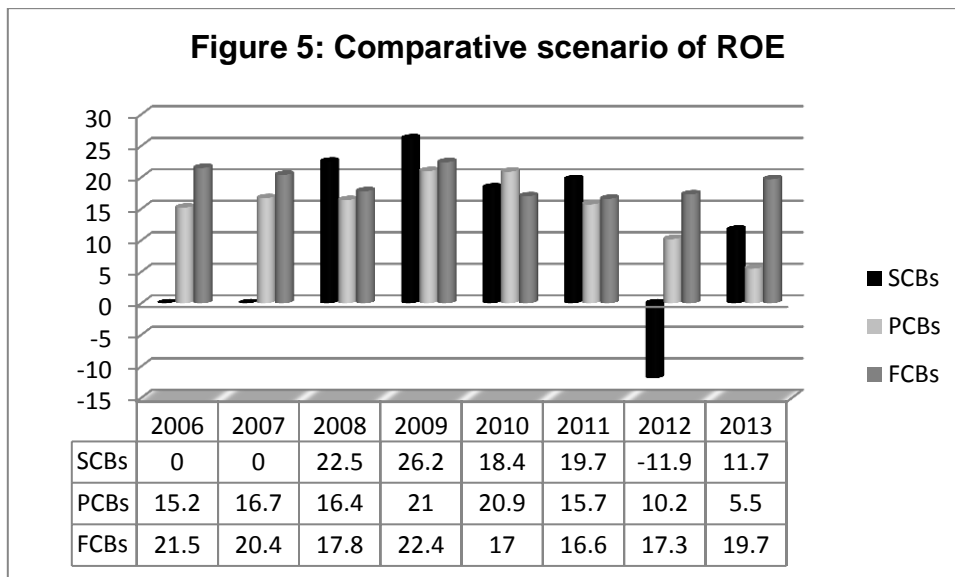
Source: Banking Performance Indicators, Appendix-3 Banking regulation & Policy Department, Bangladesh Bank, (2006-2013)

From the above graph it has been found that SCBs hold the maximum portion of the total NPLs in banking industry over the selected years from 2006 to 2013. Among them in 2013 the industry tested the largest amount of NPLs that was tk. 523.1 billion dollar. There exists a consistent harmony in NPLs amount which depicts that there is very poor initiative in controlling and recovery process of those banks. The graphical presentation given below (figure 4) is showing the percentage of NPLs hold by SCBs of the total amount. Here, it is found that each of the years holds more than 50% of total NPLs except in FY- 2010 and FY-2011. So, there is a red light to the SCBs to reduce the amount of problem lending as early as possible.

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Source: Banking Performance Indicators, Appendix-3 (Table III & IV) Banking Regulation & Policy Department, Bangladesh Bank, (2006-2013)



Source: Banking Performance Indicators, Appendix-3 (Table IX), Banking regulation & Policy Department, Bangladesh Bank, (2006-2013)

The graph can be a great source to understand how much poor the profitability trend of SCBs in our country. In 2006 and 2007 ROE for SCBs was just 0. But this horrible situation has been changed drastically in 2008 when the ratio touched 22.5% and the next 26.2%. In 2010 it decreased but the percentage is tolerable. The growth rate of ROE was also so poor and in a declining mode up to 2013 also with a negative value in 2012. If we try to draw a comparative idea then find PCBs maintained at least 15% ROE in last 8 years except 2012 and 2013 with huge fall. But FCBs show a great performance as it maintains at least 17% ROE in every year.

4.2 Econometric Model and Empirical Results

Based on the review of the literature it has been clear that there is extensive national as well as international evidence which suggests that NPLs can be explained by both macroeconomic and bank specific factors. But there are some qualitative variables that have significant effect on increasing NPLs that can be included in a model to find out the effect. Moreover NPLs have serious negative impact on loan growth rate. So there should have an impact of NPLs on banks profitability as it reduces loan amount and interest income of the banks simultaneously.

In order to investigate the impact, the following four research hypothesis have been developed:

H₀ (1): There is no significant impact of Non Performing Loan Ratio on profitability(Net Interest Income)of SCBs for last 8 years.

H₁ (1): There is significant impact of Non Performing Loan Ratio on profitability of SCBs for last 8 years.

H₀ (2): The impact of Deposit Growth Rate on SCBs profitability (NII) is statistically insignificant for last 8 years.

H₁ (2): There is significant impact of Deposit Growth Rate on SCBs profitability (NII) for last 8 years.

H₀ (3): The impact of Growth Rate of NPLs on SCBs profitability (NII) is statistically insignificant for last 8 years.

H₁ (3): There is significant impact of Growth Rate of NPLs on SCBs profitability (NII)

H₀(4): The impact of Provision Growth Rate on SCBs profitability (NII) is statistically insignificant for last 8 years.

H₁ (4): There is significant impact of Provision Growth Rate on SCBs profitability (NII) for last 8 years.

In this paper, I have selected 4 state owned commercial banks in Bangladesh and collected data based on some factors affect bank's profitability as well as performance. NPL is one of the major factors of the analysis. A model has been established to find out the significance of impact of those factors on performance of the SCBs like the model used by Yixin Hou(2006) to find out the effect of NPLS on loan growth rate of commercial banks. The model developed is as follows:

$$Y = \alpha - \beta_1 X_1 - \beta_2 X_2 + \beta_3 X_3 - \beta_4 X_4 + e_i$$

Where,

Y= Net Interest Income (NII)

α = Intercept Coefficient

X₁=NPLs Ratio (NPLR)

X₂= Deposit Growth Rate (DPGR)

X₃=NPLs Growth Rate (NPLG)

X₄=Provision Growth Rate of(PRVG)

β_i = Slope Coefficient, e_i =Error Terms

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The data used in this linear regression model is time series data as the values used here is collected from same sources at a fixed interval of time for FY-2006 to FY-2014. Excess ratio of NPLs to total loans is harmful for a bank as it negatively affects the lending behaviour by decreasing interest income and loan growth rate. This paper is mainly focused on how much negative effect NPLs have on NII of SCBs in Bangladesh.

Table 1: Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.979 ^a	.959	.904	3.21333	2.310
a. Predictors: (Constant), PRVR, NPLR, NPLG, DPG					
b. Dependent Variable: NIIR					

Table-1 represent that the coefficient of correlation of the model R is 0.979 that states there is strong relationship between dependent and independent variables used in this model. Coefficient of determination R^2 0.959 that shows the highest percentage value that the independent variables explain 96 percent change of NII. The goodness of fit test of the model is also excellent as the adjusted R^2 is 0.904. The value of Durbin Watson is 2.310 that lie within the range between 1.5 and 2.5. so we can easily state that there is no autocorrelation among the independent variables of the study.

Table 2: Coefficients^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	73.178	8.925		8.200	.004		
	NPLR	-1.880	.242	-1.087	-7.777	.004	.701	1.427
	DPG	-.899	.295	-.481	-3.050	.055	.549	1.820
	NPLG	.091	.072	.195	1.257	.298	.569	1.758
	PRVG	-.074	.029	-.354	-2.568	.083	.719	1.391
a. Dependent Variable: NIIR								

From table-2 it is found that there is a positive value of intercept coefficient (α) means that if all the independent variables remain constant then NII will be 73.178 percent carrying a viable economic meaning that generally there exist around 73.178 percent NII in SCBs of the country. Slope coefficient of NPLR is -1.880 that means if NPL ratio increases by 1 percent then the NII will be decreased by 1.88 percent and it is statistically significant at 1% percent significant level. In case of Deposit growth rate it is found that there is inverse relationship between NII and DPG as NII decreases by 0.899 percent due to 1 percent increase DPG where at 5 percent significance level it is accepted. Again, the slope coefficient of NPL growth is 0.091 that states if NPL grow by 1 percent NII increased by 0.091 percent that is statistically insignificant at 10% significant level. So there exists no strong negative relationship between Growth rate of NPL and NII. Here, slope coefficient of PRVG has a value of -0.074 show a negative relationship with NII. Due to 1 percent increase in provision growth rate NII will be decreased by 0.74%.

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Table 3: ANOVA^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	723.482	4	180.871	17.517	.020 ^a
	Residual	30.976	3	10.325		
	Total	754.459	7			
a. Predictors: (Constant), PRVG, NPLR, NPLG, DPG						
b. Dependent Variable: NIIR						

The variables used in the regression are potentially endogenous as they are simultaneously determined through banks' balance sheet constraints and are correlated with each other. From the ANOVA table (Appendix I) it is found that comparing calculated F value of 17.517 with table value at 2% significance level the null hypothesis of H_0 (1): There is no significant impact of Non Performing Loan Ratio on profitability (Net Interest Income) of SCBs for last 8 years, H_0 (2): The impact of Deposit Growth Rate on SCBs profitability (NII) is statistically insignificant for last 8 years, H_0 (3): The impact of Growth Rate of NPLs on SCBs profitability (NII) is statistically insignificant for last 8 years, H_0 (4): The impact of Provision Growth Rate on SCBs profitability (NII) is statistically insignificant for last 8 years are rejected. So, with 98 % confidently we can conclude the statement that alternative hypothesis of H_1 (1): There is significant impact of Non Performing Loan Ratio on profitability of SCBs for last 8 years. H_1 (2): There is significant impact of Deposit Growth Rate on SCBs profitability (NII) for last 8 years. H_1 (3): There is significant impact of Growth Rate of NPLs on SCBs profitability (NII) H_1 (4): There is significant impact of Provision Growth Rate on SCBs profitability (NII) for last 8 years are accepted

The analysis part is based on quantitative factors related to NPLs. Besides the quantitative factors there are some qualitative factors that act as a catalyst to occur the default loans of the SCBs and they are as follows:

- Loans are given to the borrower without considering the character, capital, capacity, collateral and condition of the loan applicant.
- Strong political influence on bankers to provide loan to some specially mentioned business person although they have bad reputation of loan default or embezzlement.
- Some banking personnel have engaged in this preplanned story with a notion of some extra gain.
- Bangladesh Bank just orders to form an investigation team of each occurrence but no such remarkable punishment are given to the guilty person.
- Rescheduling of loans is offered to the defaulters without any down payment in some causes.
- Although there is a high probability of being bad loans bankers are very much reluctant to show the loan as a classified one as result there remain ambiguity in financial statements of those particular bank.
- As per Bangladesh Bank guidelines, the single party exposures is maximum 30%(funded 15 percent and non funded 15 percent) of the respective bank's paid up capital. But many of the defaulting scam represents the frequent violation of it.

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➤ Boards of directors of the affected banks are not working as a guardian and they are just showing lame excuse as well as forwarding blame from one to another. They are very reluctant to their responsibilities. Moreover, they are dominated by the members of political parties.

5. Conclusion

As per result of econometric model of the case study there is significant negative effect of NPLs on profitability of the SCBs for the study period although a study by Fan and Shaffer in 2004 showed that NPLs are negatively related to banks' profit efficiency but was statistically insignificant. The main limitation of the study is not including the qualitative and macroeconomic factors in the model correlated with the dependent variable. There are some qualitative factors that directly or indirectly affect performance and profitability of bank but due to confidentiality of the selected banks those are not included in the model. However, some more study could be conducted to see the impact of NPL on profitability and performance of SCBs in Bangladesh considering all the relevant factors. The time is over to be idle with the problem of excess NPLs of SCBs in our country. If the default series continues then it may put the entire banking sector in an embarrassing situation. This paper can help to understand the significance of taking measures to keep NPLs of SCBs under a secured level. It can be used as a tool for further research on any others banks and non bank financial institutions. It's time to formulate appropriate rules on lending policy, credit policy, interest rate adjustment, risk management strategy etc. on all scheduled banks operating in our country. Some other relevant as well emergency precautions can be initiated by the authority as soon as possible to ensure a sound environment in banking industry of Bangladesh.

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