Non-Performing Loan in Bangladesh: A Comparative Study on the Islamic Banks and Conventional Banks

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Abstract

The banking business is one of the booming businesses in Bangladesh. But at present, the sector is struggling to be on the growth path due to the growing proportion of Non-Performing Loan (NPL). The NPL has instigated a negative influence on the growth of Banking Business. This study has compared the severity of the impact of operational modes between two mainstream banking systems, traditional banking and Islamic banking, which may affect Non-performing loans. Other variables such as governance of the banks, bureaucracy, and size of the banks, the difference in reserve ratio, capital adequacy ratio, and interest rates have different impacts on NPL. We have explained the impact of the variables on the bank performance as per mainstream banking operational model. Finally, we have proposed some evocative measures through which the Non-performing loan can be minimized.

Keywords: Conventional Bank, Islamic Bank, Non-Performing Loan, Operational Mode of Banks.

1. Introduction

The reasons behind loan default vary across countries which tend to upset commercial banks' financial results. Commercial banks of Bangladesh are licensed and regulated by its central bank named as Bangladesh Bank. There are currently 59 scheduled banks, 6 of which are State-owned commercial banks (SOCBs), 3 are specialized banks, 33 are traditional private commercial banks (PCBs), 8 are PCBs based on Islamic Shariah and 9 are Foreign Commercial Banks (FCB).

Our banking industry is encountering a serious problem of NPL because of ineffective lending practices despite taking many reform measures. It has become a challenged term in Bangladesh as a majority portion of the loans has ceased to generate profit from the collection of principal and interest payments from the borrowers. For defining NPL, till now we don't have any fixed global standard. Based on their conditions and rules, there are differences in the classification scheme, scope, and contents across countries. Normally by Non-performing loan, we generally understand a loan which is already in default or going to be in default very soon. A Non-Performing loan is a loan that does not perform as planned, interest and principal payments have become due by 90 days or more, or in the case of interest, interest payments have been capitalized, refinanced or postponed by arrangement by at least 90 days. And if the payments have been overdue for less than 90 days, there is still doubt that full payment may not be made the loan is still under the non-performing loan.

Because of the increase in the NPL, the banking sector is hampered. As of March 2019, the NPL rose to Tk 110,874 crore, which had been reported as the highest ever in the country (Uddin, 2019). According to Bangladesh Bank reports, eight state-run banks accounted for more than 52 percent of the bad loans.

The remaining banks are classified under private and foreign-owned banks. The defaulted loans were 11 percent of the total outstanding loans. The share of NPL goes up to about 20 percent when restructured and rescheduled loans are included. (Mahmood, 2019).

If this scenario continues, then this might be a threat to this sector. As we know that the operational modes of Islamic and Conventional banks differ, so they might be affected differently due to the rise in NPL. The reserve ratio and capital requirement for these banks are different, which might be a cause for the difference. But whatever the situation is, both the

criteria of banks are experiencing hassle caused by NPL. So, to sustain in a market with intense competition, they need to come forward with effective measures to control NPL, which may have a progressive impact on their financial performance. Our motto is to find out the exact reasons for which NPL differs in both the banks. Suggestive measures will be given as well. As our economy depends on the banking sector to a great extent, so it is high time we focus on this issue. Otherwise, it will have a huge adverse impact on our banking sector as well as on our economy. To decrease NPL, the liquidity reserve ratio has already been decreased. The impact is yet to be observed. Many other corrective measures are needed to be implemented. And if the gap between traditional banks 'NPL and Islamic banks is too high, then it needs to be reduced.

1.1 Objectives of the Research
The broad purpose of this study is to conduct a comparative analysis of the Islamic Banks and Traditional Banks in Bangladesh on Non-Performing Loan (NPL). The main goals are:
- To determine the factors related to banks that have an impact on the Non-Performing Loan (NPL) of commercial banks in Bangladesh.
- To examine the effect of the factors related to banks on the Non-Performing Loan (NPL) by considering variables such as Lending Rate (LR), Loan to Deposit Ratio (LTD), Bank Size (BS) and Reserve Ratio (RR).
- To identify the difference between the extent of the "impact of the factors related to banks" on NPL of the two banking systems in Bangladesh.

2. Literature Review
Though globally, there is no static definition of NPL as there are variations exist in the term of the method of classification, the possibility, and subjects but we have tried to find some parameters to measure. IMF"s Compilation Guide on Financial Soundness Indicators defined NPLs as follows:

NPL refers to the loans that stopped generating income for an extensive period (Caprio & Klingebiel, 2002). Banks' performance can be decreased by NPL as we can treat NPL as undesirable outputs or costs of loaning for banks. If NPL increases naturally there will be a downward trend of the bank's performance. (Tesfaye, 2012).

NPLs can be measured by non-performing loans net of the provision of capital. This is measured by considering the NPL value minus the specific loan provisions divided by the capital (Waweru & Spraakman, 2012). Another approach to calculating NPLs is by dividing non-performing loans to total gross loans. Here we considered the NPLs as the numerator and the total loan portfolio (covering NPLs before any loan-loss provisions are deducted) as the denominator.

Kateregga (2013) found that despite being following the procedures and regulations on administering credit, commercial banks in Uganda still tend increasing Non-Performing loans means a larger number of clients are not repaying the loans. After conducting a thorough study on the reasons for NPLs among commercial banks in Kenya Muriithi (2013) explained that, before the financial crises started in 2007-2008, over the past decade almost in every country the credit quality of the loan portfolio was relatively stable. As a result of the financial crisis, the average bank asset quality deteriorated sharply. He also acknowledged that, due to the nature of producing the largest portion of operating income, loans can be considered as the leading asset and advancing as the soul of the banking industry. This threat of NPL can be mitigated by functional credit risk assessment and having enough facilities for prospective bad and doubtful debt.

As described by Karim et al. (2010) the key outcome of bad loans is the capacity to deter the bank to grow commercially. This is because bad loans cause liquidity problems and make the banks unqualified to extend their resources to potentially feasible concerns. Moreover, they pointed out the unattainability of procreative venture prospects due to the capital that has been locked-up because of the bad loans. According to Fofack (2005) the entire banking sector is facing this crisis because of the inefficient supervision of credit risk which has become the reason for economic failure.

The study of Rahman & Jahan (2018) found an insignificant relationship between profitability and NPIs. The required SLR (Statutory Liquidity Reserve) of the Islamic banks was 11.5%, which was lower than that of conventional banks.

Bhattarai (2016) identified that the NPL ratio has an inverse effect on ROA whereas it has an affirmative effect on ROE in the Nepalese commercial banks. The findings of Akter & Roy (2017) again identified an inverse effect of NPL on profitability (Net Interest Margin) while considering 30 bank data of Bangladesh for the year 2008 to 2013.

After analyzing the time series data Lata (2015) found NPL among the principal factors which influence banks' profitability having a considerable negative impact on Net Interest Income of the nationalized Commercial Banks in Bangladesh.

Adeusi et al. (2014) performed a study on the impact of credit risk over the financial result of the commercial banks in Nigeria from 2008 to 2012. They found an inverse relationship that was not significant between loan ratio and total advances in terms of deposits and has revealed a negative and significant relationship between the rate of nonperforming loans and advances with the profitability of banks.

Haron (2004) considers internal bank factors as bank-specific factors that can be either financial factors such as bank size, capital ratios, liquidity, asset quality, deposits, operational performance, risk management, etc. or non-financial factors such as some branches, staff, ATMs, clients, bank age, ownership, etc. The internal factors are said to be the factors that are considered to be under the control and influence of the bank.

Earning ability, capital adequacy, and bank size; these all were recognized by Langrin (2001) as significant factors of a bank's non-performing loans. Wheelock & Wilson (2000) illustrated that the quality of the asset and bank size meaningfully govern the non-performing loan level.

A study by Waweru (2009) on Kenyan commercial banks specified that higher interest rates may lead a bank to non-performing loans. High-risk borrowers of the banks are also causing loan default (Muriithi, 2013). As per Gorter & Bloem (2002) variations in interest rate has an influence to significantly increase in "bad loans". Again Espinoza & Prasad (2010) emphasized both external and internal features influence the non-performing loans and the GCC Banking system.

The study of Awuor (2015) explored an inverse relationship between bank size and NPLs that was weak as well as insignificant. A unit rise in bank size may lead to a decrease in the levels of NPLs which is clarified by economies of scale in bank operations.

(Masood & Ashraf, 2012) suggested that generally, the banks that are small in size tend to adopt lesser business loan underwriting practices though the risk associated is higher compared to larger banks. Big banks get an advantage from diversification chances. Salas & Saurina (2002) also identified an inverse relationship lying within bank size and Non-Performing Loan means the bigger the bank size the lesser the NPL. He contends that the bigger size of those banks permits them for having more diversified investment opportunities. HU *et al.* (2004) report the same evidence. Mahmudur (2012) identified the Basel Capital Accord (Basel-II) as the origin of NPL as well as the credit crisis.

The banks' credit policy has been crucially influencing the non-performing loans. According to Adhikary (2006) some of the reasons for the loans being non-performing are deficiency of efficient monitoring, effective lenders' options, and effective debt recovery strategies.

It has been noticed that Pre-election has a swaying control in the financial sector's regulatory side. This is creating pressure on the Government and Bangladesh Bank. This is not a smooth atmosphere for functioning and to save the banking sector from deteriorating, necessary steps should be taken (Wallich, 2006).

3. Methodology
In this study, we have tried to examine the internal factors which influence NPLs and whether those factors have a different impact on Islamic Banks (IB) and Commercial Banks (CB). For this, we have used secondary data for 5 Years (2014-2018) form 10 different banks. The data was retrieved from the Bangladesh bank website and banks' annual reports. We took 7 conventional CBs (Dhaka Bank Limited, Dutch Bangla Bank Limited, Eastern Bank Limited, Mutual Trust Bank Limited, NCC Bank Limited, One Bank Limited, Prime Bank Limited) and 3 IBs (Islami Bank Bangladesh Limited, Export-Import Bank of Bangladesh Limited, First Security Islami Bank Limited) for the analysis considering the random sampling. Because of the higher market share of commercial banks we gave commercial banks more weight.

Table 1. List of selected banks

Private Commercial Banks	Islamic Commercial Banks
DBL	IBBL
DBBL	EIBBL
EBL	FSIBL
MTBL	
NCCBL	
OBL	
PBL	

The research used Statistical software 'Stata' for panel data analysis. This research used the model of fixed-effect (FE) and the model of random-effects (RE) to evaluate the relationship between dependent variables and independents. The FE model and the RE model have been used over time to evaluate the effect of the explanatory variables. In our study, the dependent variable is Nonperforming loan ratio (NPL) and Lending Rate (LR), Loan to Deposit Ratio (LTD), Bank Size (BS) and Statutory Liquidity Rate Ratio (SLR) are used as the independent variable.

3.1 Description of Variables
3.1.1 Non-Performing Loan Ratio (NPLR)
For Non-Performing Loan, we found loans where the debtor refused to pay the scheduled payments for a specified time. We divide Total Non-Performing Loan by Total Loan to determine the NPLR.

3.1.2 Lending Rate (LR)
Generally for banks, the Lending Rate is an interest rate used by banks for their customers who are borrowing the money from the bank. As at present, banks are using several products to increase their income from time to time. It is very difficult to find a single LR for a bank for the whole year. We have used interest income from loans/ total loans as a proxy for lending rates.

3.1.3 Loan to Deposit Ratio (LDR)

LDR is used to access the liquidity condition of a bank. Those banks are considered as strong banks that have a good liquidity condition. We have calculated the total loan divided by total deposit to find out LDR.

3.1.4 Bank Size (BS)

All the 10 banks we have considered our listed banks. So we consider the paid-up capital of the banks. To avoid the extreme effects, we consider a log of paid-up capital.

3.1.5 Reserve Ratio (RR)

All banks have to maintain a minimum portion of cash, gold or other liquid assets to meet the need of their Net Demand and Time Liabilities (NDTL). Reserve Ratio is said to be the ratio of these liquid assets to the demand and time liabilities. We have taken SLR as Reserve Ratio.

3.2 Equation

Panel data is used for analysis. The results are found by fixed effect and random effect models.
Model the generic equation as follows for pulled Ordinary Least Square (OLS)

$$NPL_{it} = \beta_0 + \beta_1 LR_{it} + \beta_2 LTD_{it} + \beta_3 BS_{it} + \beta_3 SLR_{it} + \varepsilon_t \qquad (1)$$

For determining the *Fixed effect* generic equation was used as below

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it} \qquad (2)$$

Where

α_i (i=1….n) = Unknown intercept for each entity (n entity-specific intercepts).
Y_{it}= Dependent variable (DV) in the model where i = entity and t = time.
X_{it}= One independent variable (IV),
β_i= Coefficient for that IV,
u_{it} = Error term

And for the random effect, we have used

$$Y_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it} \qquad (3)$$

4. Analysis and Findings

4.1 Pooled OLS Estimation

To understand the relation with the overall picture of the independent variables we run the pooled OLS for all the banks. The result was not very much convincing.

Table 2. The output of Pooled OLS

Number of obs	50			Source	SS	df	MS
F(4, 45)	3.34						
Prob > F	0.01			Model	0.05	4	.01
R-squared	0.22			Residual	0.18	45	.00
Adj R-squared	0.16						
Root MSE	0.06			Total	0.24	49	.00
NPLR	Coef.	Std. Err.	T	P>t	[95% Conf.		Interval]
BS	-0.01	.00	-2.25	0.02	-0.02		-0.00
LR	-0.01	.68	-0.02	0.98	-1.39		1.36
LTD	0.05	.11	0.45	0.65	-0.17		0.27
RR	-0.06	.38	-0.18	0.85	-0.83		0.70
_cons	0.15	.15	0.94	0.35	-0.17		0.47

Most of the dependent variables are not significant and also the coefficient is not explaining the relations properly. It is expected. Because the Pooled OLS estimation is one of the OLS techniques which runs on Panel data. Therefore all different

effects were ignored individually. For this reason, a lot of basic assumptions have been violated, such as orthogonality of the error term. Therefore, the result is not very much accurate. So we have tried to find the issue and try to find a suitable model for the data.

4.2 Fixed Effects Model
We have tested the Heteroscedasticity and normality of the data and have found that those are not as good expected. So we address the issue and then run the FE model where we have found the below result:

Table 3. The output of Fixed-Effects Model

Fixed-effects (within) regression			Number of obs	=	50		
Group variable: IDBank			Number of groups =		10		
R-sq: within = 0.36			Obs per group: min =		5		
between = 0.26			avg =		5.0		
overall = 0.22			max =		5		
	F(4,36)	=	5.07				
corr(u_i, Xb) = -0.99			Prob > F	=	0.002		
NPLR	Coef.	Std. Err.	t	P>t		[95% Conf. Interval]	
BS	0.27	0.09	2.98	0.005		.08	.46
LR	1.58	0.38	4.12	0.000		.80	2.37
LTD	0.16	0.08	1.92	0.063		-.00	.32
RR	3.05	1.15	2.65	0.012		.71	5.39
_cons	-3.13	0.92	-3.38	0.002		-5.01	-1.25
sigma_u	0.79						
sigma_e	0.02						
rho	0.99	(fraction of variance due to u_i)					
F test that all u_i=0:	F(9, 36) = 28.44	Prob > F = 0.00					

All the variables are positively related to the NPLR though Loan to deposit Ratio plays an insignificant role to explain the NPL of the banks in case of Bangladesh. This is quite understandable as the Loan to Deposit ratio is not always maintained properly by the banks for making their plans to disburse the loans.

The interesting result is that NPL and Bank Size are positively related. That indicates the bigger the bank the more NPL they have. It is rejecting the theory that big banks are more efficient. In the concept of Bangladesh big banks have more NPL as they have given a big amount of bad loans. That is a direct effect of inefficiency.

Loan to Deposit ratio has a positive impact as per literature (Wood & Skinner, 2018). The justification regarding this is, if customers deposited more money in banks, the banks will perform more with their lending activities. But in our country, this activity is not performed efficiently. So NPL increases.

Also when we have run the Housman test we find that the FE is better than the random effect.

4.3 Comparative Analysis of Conventional Banks and Islamic Banks
Now we want to analyze the influence of these variables separately on commercial banks and Islamic banks. So we have run two separate FE model to compare. The results are as below:

Table 4. Fixed Effect Result for Commercial Banks only

NPLR	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	.15	.03	4.21	0.000	.07	.22
LR	.54	.14	3.86	0.001	.25	.82

LTD	.03	.03	1.22	0.233	-.02	.10
RR	.72	.41	1.74	0.004	-.13	1.57
_cons	-1.67	.40	-4.14	0.000	-2.50	-.84

Table 5. Fixed Effect Result for Islamic Banks only

NPLR	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
BS	.49	.18	2.60	0.003	.08	.90
LR	2.98	.81	3.68	0.003	1.21	4.75
LTD	.31	.18	1.72	0.112	-.08	.72
RR	6.39	2.62	2.44	0.001	.67	12.10
_cons	-4.82	1.61	-2.98	0.011	-8.35	-1.29

From the result, we have seen that for both categories of banks separately, LTD has no significant impact on NPLR. But in the case of other variables, those have a bigger effect on Islamic banks than conventional banks. We have seen that BS and LR have almost four times higher impact on NPLR of Islamic Banks compared to conventional banks. But the Reserve Ratio has the biggest difference compared to commercial Banks. Bangladesh's banking law may have a big impact on this.

4.4 Hadri LM Unit Root Test
When we checked unit-roots through the Hadri LM test for commercial banks, we find that we can accept the null hypothesis. This means we can say all panels are stationary. We also get the same result for the Islamic Banks though the p-value is smaller compare to conventional banks. So we can say our data is good.

Table 6. Unit Root Test

Commercial Banks				Islamic Banks			
Hadri LM test for NPLR				Hadri LM test for NPLR			
Ho: All panels are stationary	Number of panels		7	Ho: All panels are stationary	Number of panels		4
Ha: Some panels contain unit roots	Number of periods		5	Ha: Some panels contain unit roots	Number of periods		5
Time trend: Not included	Asymptotics: T, N	-> Infinity		Time trend: Not included	Asymptotics: T, N	-> Infinity	
Heteroskedasticity: Not robust			sequentially	Heteroskedasticity: Not robust			sequentially
LR variance: (not used)				LR variance: (not used)			
Statistic	p-value			Statistic	p-value		
z 2.38	0.008			z 3.16	0.000		

There is a common understanding about the Islamic banks is Islamic Banks are less influenced by the bank's internal variables in case of NPL. This study disagrees with this understanding and finds that Islamic Banks are even more influenced by the BS, LR, and RR compared to conventional banks.

5. Policy Implications and Conclusion
From this paper, we can say that the independent variables (Bank internal Variable) have some impact on NPLR. But still, this impact is not as big as we think. Also, the sample size both in sense of some banks and the observed year is small compared to the total industry. So we need to review the things before putting our final comments.

In the case of comparing the IBs' and CBs' NPLRs dependency on the selected variables, we have seen that Islamic Banks are more dependent on the variables compared to the commercial banks. But still, there is scope for further analysis.

Financial institutions in almost every country of the world face several risks of nonperforming loans; it is, however, prudent for these institutions to introduce monitoring mechanisms to follow up with the activities of borrowers. McNulty *et al.* (2001) noted that NPL is thought to be significant for individual bank performance and the economy's financial setting.

Commercial banks are very disposed to the default risk from borrowers for the nature of their business. To reduce the bank risk, practical credit risk assessment and the creation of enough provisions are very important.

The security of the fund funds of commercial banks should be taken care of from getting too much profit from risky investments. Any kind of diversion of loan policy should be restricted, which may reduce the non-performing loan.

6. Scope for Further Research

This study has considered only four independent variables to define relationships. In a further study increased number of variables (i.e., the impact of credit information sharing, Credit officers' demographic attributes) can be used to explain the model. We chose only five years of study. The paper, however, suggests that a study be done to increase the time under study. Moreover, all the listed banks can be taken into consideration to achieve a more significant result.

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