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IMPACTS OF NON-PERFORMING LOANS ON PROFITABILITY OF NEPALESE COMMERCIAL BANKS

[1]Dr. RAMJI GAUTAM
[1]Associate Professor, Central Department of Management
Tribhuvan University

ABSTRACT

This paper examines the impact of non-performing loan on profitability of Nepalese commercial banks for the period from 2007/08 to 2016/17. ROA (return on assets)and ROE (return on equity) are dependent variables whereas non-performing loan to total loan (NPTL), credit to deposit ratio (CDR), net profit to loan and advance(NPLA), and interest income to loan and advance (IILA) are the independent variables. Data are collected from annual report of the respective banks. The study is based on 100 observations from different 10 commercial banks of Nepal. The regression models have been employed to test the impact of non-performing loans on profitability of Nepalese commercial banks. The result shows that beta coefficient for credit to deposit ratio, net profit to loan and advances, non-performing loan to total loan, interest income to loan and advance are positive on return on assets. Likewise, beta coefficient is positive for credit to deposit ratio, net profit to loan and advances whereas negative for the non-performing loan to total loan and interest income to loan and advances on return on equity. It can be concluded that the non-performing loan to total loan, credit to deposit ratio, net profit to loan and advance and interest income to loan and advance are important variables to influence the profitability of the commercial banks of Nepal.

Keywords: *Non-Performing Loan, Commercial Banks, Return On Assets, Return On Equity, Regression*

INTRODUCTION

Financial institution collects funds from the public and places them in financial assets such as deposits, loans, and bonds, rather than tangible property. Bank is a financial intermediary accepting deposits and providing loans as it offers the wide range of services of any financial institution. Banks are carrying out currency exchanges, discounting commercial notes and making business loans, offering deposits services, safekeeping of valuables, supporting government activities, offering equipment leasing among others. Profitability of the banking sector is a subject that has received a lot of attention in recent years and now there is a large literature which has examined the role played by management of resources in determining the banks' profitability. Indicators used to measure profitability are many and mainly include return on assets and return on equity (Kirui, 2014).

Non-performing loan is taken as a default or close to being in default. Many loans become nonperforming after being in default for three months but this can depend on the contract terms. A loan is non-performing when payments of interest and principal are past due by 90 days or more. Loans become non-performing when it cannot be recovered within certain stipulated time that is governed by respective laws. The non-performing loans (NPL) of financial institutions are considered as a significant issue in the context of Nepal for last few decades. The immediate consequence of large amount of NPLs in the banking system is bank's failure. Many researches on the cause of bank's failures find that asset quality is a statistically significant predictor of insolvency and that failing banking institutions always have high level of non-performing loans prior to failure (Dhungana & Updhyaya, 2012).

The amount of non-performing loan is one of the indicators of its performance. Less amount of NPL shows better financial health of the bank. If the non-performing loan is more, there will be poor financial health and crisis may result in the economy.

The main objective of this study is to examine the effect of NPL on profitability of listed commercial banks of Nepal covering the period from 2007/08 to 2016/17.

LITERATURE REVIEW

Mekasha (2001) has investigated credit risk management and its impacts on performance of Ethiopian Commercial Banks. The researcher used 10 years' panel data from the selected commercial banks for the study to examine the relationship between return on assets and loan provision, non-performing loans and total assets. The study revealed that there is a significant relationship between bank performance and credit risk management.

Felix and Claudine (2008) assessed the association between banks' performance and credit risk management. The findings showed that that both profitability measuring tools of financial institutions i.e. ROA and ROE were negatively related to the ratio of NPLs to total loan of financial institutions. Muasya (2009) carried a comparative study to find out extent to which commercial banking institutions in Kenya and Europe were affected by problem of NPLs during the global financial crisis of 2008/2009. The study results showed that Kenyan banks made less loss as compared to banks in US and Europe in same period due to the negative effects of Non-Performing Loans. Kithinji (2010) examined the impact of credit risk management practices on the profits of commercial banking institutions operating in Kenya. The results showed that the big chunk of the profits of commercial banks is not affected by customers' total credit thus NPLs suggesting that there exist other variables apart from total customers' credit and NPLs loans to impact on profits.

Another study assessing the effect of bank's specific risks & the overall banking environment on the financial performance of 43 commercial banks operating in six of the Gulf Cooperation Council (GCC) countries over the period between 1998 and 2008 was carried out by Al-Khouri (2011). The study employed fixed effect regression model for analysis. The findings revealed that credit risk, capital risk and liquidity risk are the specific risks that affect bank's performance (ROA) while only Liquidity risk affects profitability when measured by ROE. Talata (2011) examined the effect of non-performing loans on the financial performance. The NPLs & cost to income ratio had a negative effect on financial performance while total revenue & loan recovered had a positive influence on financial performance.

Epure and Lafuente (2012) studied bank's financial performance in the presence of risk in Costa-Rica during the period 1998 to 2007. NPLs was found to negatively affect efficiency and ROA while the capital adequacy ratio had a significant and positive effect on the net interest cover margin. Mwangi (2012) investigated the effect of non-performing loans on financial performance of microfinance banks (MFBs) in Kenya. The research was carried out in MFBs in Nakuru town, Kenya. The results showed that credit risk had significant effect on financial performance of Micro finance Banks in Nakuru town.

Adebisi & Matthew (2015) researched on The Impact of Non-Performing Loans on Firm Profitability: A Focus on the Nigerian Banking Industry; and found that there is no relationship between the Non-performing Loans (NPL) and Return on Assets (ROA) of Nigerian Banks which means that the asset value of the firms are not affected by the level of NPL nonetheless the shareholders' wealth maximization is affected since the result above shows that there is a relation between the Non-performing Loans (NPL) and Return on equity (ROE) of Nigerian Banks.

Bhattarai (2016) concluded that there is significant relationship between bank's performance and credit risk indicators. The non-performing loan ratio has negative effect on bank's performance whereas cost per loan assets has positive effect on bank's performance. The positive coefficient of cost per loan assets indicates the bank's efficiency in distributing loans to customers and collecting higher level of interest revenue as compared to interest expense and other operating costs. Cost per loan assets is considered to be the influencing variable to enhance banks' performance.

The above reviews of previous literature reveal that numbers of studies have been done regarding non-performing loans and bank's profitability in different countries. However, in the context of Nepal, no sufficient studies have been found. Hence, an attempt has been made to fill this research gap. Therefore, the objective of this study is to examine the impact of non-performing loans on profitability of Nepalese commercial banks.

RESEARCH METHODOLOGY

In order to resolve the problems stated and achieve the objectives of this study, secondary data were collated from ten commercial banks covering a period of ten years from 2007/08-2016/17. For the purpose of data analysis, the multiple regression models have been used.

Model Specification

In order to test the hypotheses, the proxies of independent variables are non-performing loans to loans (NPLTL) and credit to deposit ratio (CDR), net profit to loan and advances (NPLA) and interest income to loan and advances (IILA). Similarly, the dependent variables are return on assets (ROA) and return on equity (ROE) as profitability indicators.

The following models have been used to study the impact of non-performing loans on profitability of Nepalese commercial banks:

Model 1: $ROA=\alpha+\beta_1CDR+\beta_2NPLA+\beta_3NPLTL+\beta_4IILA+e$

Model 2: $ROE = \alpha + \beta_1CDR + \beta_2NPLA + \beta_3NPLTL + \beta_4IILA + e$

Where,

ROA= Profitability of Bank i at time t as expressed by return on assets
ROE =Profitability of Bank i at time t as expressed by return on equity
CDR =Credit to deposit ratio
NPLA = net profit to loan and advances
NPLTL = non-performing loans to loans
IILA =interest income to loan and advances
α = Constant
e= Error
$\beta_1, \beta_2, \beta_3, \beta_4 \& \beta_5$ are parameters of the independent variables.

Return on Assets (ROA)

Return on Asset (ROA) represents efficiency in asset utilization and shows how much net income is generated out of assets. It indicates the ability of bank's management to generate profits by utilizing the available assets of the bank. Thus, if the ratio of ROA is high then it indicates that it is better performance in order to generate profit. The bank's profitability measured in terms of ROA might result from high lending rate, fees and commission that lead bank's growth in oversized profitability. Therefore, more efficient banks are expected to generate higher net income per rupee of assets (Rengarajan, 2016).

Return on equity (ROE)

ROE reflects how effectively a bank management is utilizing its shareholders' funds. Higher ratio positively affects the profitability of the banks. ROE is dependent variable and there is inverse relationship between Return on equity and Net NPL to Net Advances ratio (Sharma, 2016).

Total credit to deposit ratio (CDR)

The loan-to-deposit ratio (LTD) is a commonly used statistical tool for assessing a bank's liquidity by dividing the bank's total loans by its total deposits. This number is expressed as a percentage. If the ratio is too high then it means that the bank may not have enough liquidity to cover any unforeseen fund requirements, and conversely, if the ratio is too low, the bank may not be earning as much as it could be.

H_1:Credit to debt ratio has negative relationship with profitability.

Net profit to loan and advance(NPLA)

The ultimate goal here is to ensure that the bank is being adequately compensated for the risks it is taking in its lending business. It is used mainly for computing a risk-adjusted return.

H_2: Net profit to loan and advance has positive relationship with profitability.

Non-performing loan to total liability (NPLTL)

The net NPA to loans (advances) ratio is used as a measure of the overall quality of the bank's loan book. An NPA are those assets for which interest is overdue for more than 90 days (or 3 months).

Net NPAs are calculated by reducing gross NPAs from cumulative balance of provisions outstanding at a period. Higher ratio reflects rising bad quality of loans.

H_3: Non-performing loan to loan and advance has negative relationship with profitability.

Interest income to total loan and advance (IILA)

This ratio shows how much a bank has earned by the way of net interest income after deducting all the costs incurred on earning the interest income. Higher the spread higher will be the efficiency of the banks and affects positively the profitability of the banks (Sharma, 2016)

H_4: Interest income to loan and advance has positive relationship with profitability.

RESULT AND DISCUSSION

Descriptive statistics

Table 3.1 clearly shows the descriptive statistics for the selected variables considered in this study. There turn on asset has a minimum value of 0.00 percent and a maximum of 10 percent with average of 2.03 percent. Likewise, return on equity ranges from 2 percent to 498 percent with mean of 23.90 percent.

Table 3.1: Descriptive statistics

Variables (%)	N	Minimum	Maximum	Mean	Std. Deviation
ROA	100	.00	.10	.0203	.01361
ROE	100	.02	4.98	.2390	.48535
CDR	100	.10	1.22	.7591	.17057
NPLA	100	.00	.09	.0291	.01473
NPLTL	100	.00	.12	.0241	.02781
IILA	100	.01	.80	.0988	.07729

Credit to debt ratio has a minimum value of 10 percent and maximum value of 122 percent with average value of 75.91 percent. Similarly, net profit to loan and advance has a minimum value of 0.00 percent and a maximum of 9 percent with average of 2.91 percent. Non-performing loan to total loan ranges from 0.0 percent to 12 percent with the average value of 2.41 percent. Lastly interest income to loan and advance ranges from 1 percent to 80 percent with mean value of 9.88 percent.

Correlation analysis

Table 3.2 shows the Pearson correlation coefficient between dependent and independent variables taken in the study.

Table 3.2: Correlation Analysis

	ROA	ROE	CDR	NPLA	NPLTL	IILA
ROA	1					
ROE	-0.062	1				
CDR	0.131	0.052	1			
NPLA	0.369**	0.436**	-0.196	1		
NPLTL	0.413**	-0.020	0.340**	0.278**	1	
IILA	0.068	-0.050	0.005	0.044	0.066	1

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

The result shows a positive relationship of return on assets with total credit to deposit ratio (CDR), net profit to loan and advance (NPLA), non-performing loan to total liability (NPLTL) and interest income to total loan and advance (IILA). It indicates that larger the total credit to deposit ratio (CDR), net profit to loan and advance (NPLA), non-performing loan to total liability (NPLTL) and interest income to total loan and advance (IILA), higher the return on assets. On the other side, total credit to deposit ratio (CDR), net profit to loan and advance (NPLA), non-performing loan to total liability (NPLTL) and interest income to total loan and advance (IILA) are inversely related with return on equity. It indicates that higher total credit to deposit ratio (CDR), net profit to loan and advance

(NPLA), non-performing loan to total liability (NPLTL) and interest income to total loan and advance (IILA), return on equity would be lower.

Regression analysis

In order to test the statistical significance and robustness of the result, this study relies on secondary data analysis based on the regression models.

Regression Output of Return on Assets and its Determinants

The regression of dependent variable and independent variable are given in the Table 3.3. The result shows that beta coefficient for CDR, NPLA, NPLTL and IILA are positive hence, it indicates that larger the CDR, NPLA, NPLTL and IILA, higher would be ROA. Similarly, the finding shows that there is no negative beta coefficient therefore all the independent variables have positive relationship with ROA. In addition, the p-value of NPLA and NPLTL are less than 5 percent, hence these results are statistically significant.

Table 3.3: Regression Result when dependent variable is Return on Assets.

Model 1	B	t	Sig.
(Constant)	0.003	0.361	0.719
CDR	0.007	0.903	0.369
NPLA	0.280	3.103	0.003
NPLTL	0.145	2.896	0.005
IILA	0.006	0.387	0.070
F	7.849		0.000
R^2		0.248	

Since the p-value of model is less than 5 percent, the model summary is fit. R^2 as +0.248 explains that 24.8% of the variation in return on assets(ROA) is indicated by the variation in the predictors like non-performing loans to loans (NPLTL), credit to deposit ratio (CDR), net profit to loan and advance (NPLA) and interest income to loan and advance (IILA), respectively.

Regression Output of Return on Equity and its Determinants

The regression of dependent variable and independent variable are given in the Table 3.4. The result shows that beta coefficient for CDR and NPLA are positive, it indicates that larger the CDR and NPLA, higher would be ROE. Similarly, the finding shows that higher NPLTL and IILA would lower the ROE. In addition, the p-value of CDR, NPLA and NPLTL are less than 5 percent, hence these variable are significant.

Table 3.4: Regression Result when dependent variable is Return on Equity.

Model 2	B	t	Sig.
(Constant)	-0.689	-2.751	0.007
CDR	0.707	2.516	0.004
NPLA	18.400	5.771	0.000
NPLTL	-4.463	-2.531	0.003
IILA	-0.372	-0.671	0.504
F	8.540		0.000
R^2	0.264		

Since the p-value of model is less than 5 percent, the model summary is fit. R^2 as +0.264 explains that 26.4% of the variation in return on equity (ROE) is denoted by the variation in the predictors like non-performing loans to loans (NPLTL), credit to deposit ratio (CDR), net profit to loan and advance (NPLA) and interest income to loan and advance (IILA), respectively.

SUMMARY AND CONCLUSION

Lending is the most profitable investment for commercial banks but non-performing loan has effect on profitability of the commercial banks. The major objective of this study is to examine the effect of loan specific factors that affect the profitability of Nepalese commercial banks. The factors such as non-performing loans to total loans (NPLTL) and credit to deposit ratio (CDR), net profit to loan and advance (NPLA) and interest income to loan and advance (IILA) affect the profitability of Nepalese commercial bank. Therefore, the R-square results for both models show that the mentioned independent variables are important variables to influence the profitability of the commercial banks of Nepal.

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