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Effect of Non-Performing Loan on the Profitability of Commercial Banks in Nepal

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Abstract:

This study has examined the effect of non-performing loan on the profitability of Nepalese commercial banks using pooled data of fourteen commercial banks with 77 observations during the period of 2010 to 2015. The estimated regression results reveal that non-performing loan ratio has negative effect on overall bank profitability (ROA) whereas non-performing loan ratio has positive effect on shareholders' return (ROE). Moreover, the results show that bank size has significant positive effect on bank profitability (ROA, ROE). However, cost per loan has significant positive association only with overall bank profitability (ROA). Unlikely, gross domestic product growth rate has significant positive effect only on shareholders' return (ROE). Thus, this study concludes that profitability of Nepalese commercial is influenced by non-performing loan ratio and other covariates like: bank size, cost per loan assets and gross domestic product growth rate.

Keywords: Non-performing loans, regression model, profitability, commercial banks, Nepal

JEL Classification: G21, G32, C33, N25, O16

1. Introduction

Non-performing loans has been an immense issue among banking organizations and academicians because it can affect the profitability of commercial banks. Non-performing loans ratio (NPLR) indicates how banks manage their credit risk because it defines the proportion of loan losses amount in relation to total loan amount. At the most general level, a non-performing loan (NPL) is a loan where a borrower is not making repayments in accordance with contractual obligations. In many jurisdictions and for many firms, an NPL is defined as a sum of borrowed money upon which the debtor has not made his or her scheduled payments for at least 90 days (Bholat, Lastra, Markose, Miglionico, & Sen, 2016).

NPLs are important because they affect the financial intermediation role of commercial banks which constitutes the banks' main source of their income, and ultimately, the financial stability of an economy (Klein, 2013). The immediate consequence of large amount of NPLs in the banking system is bank failure as well as economic slowdown. The causes of non-performing loans 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, 2007).

NPLs involve a lot of time and efforts of bank management. This is an indirect cost which the bank has to bear due to poor asset quality. The NPLs do not only block the interest income, but they entail a missed chance of investing in some return-earning investment, thereby affecting future stream of profits. NPLs imply blocked income which constrains the bank of cash at hand. Banks are, therefore, forced to borrow more and this results in additional cost to the bank. Moreover, NPLs also entail a reputational risk to the bank. If a bank is facing problem of NPLs, then it adversely affects its credit rating and would limit its opportunities of co-financing and syndication with other banks. Thus, huge amount of NPLs may affect the profitability and can threaten the survival of commercial banks. However, the link between profitability and non-performing loans is more equivocal. If profitability reflects the quality of the firm's asset management, then this might indicate that the bank will generate fewer non-performing loans. Further, profits flow into retained earnings and this strengthens the capital position of banks. Alternately, higher profits might reflect greater riskiness and therefore, higher nonperforming loans may be found in due course.

The study on NPLs in Nepal is a topic of great concern to banking organizations and academicians. This is mainly because the volume of default loans of commercial banks in Nepal has been increasing at an alarming rate. The tendency of fraud, embezzlement and loan default is in a serious situation in Nepal in recent years due to excessive political interference and illegal interruption of the concerns. Non-performing loans are increasing due to lack of risk management, which threatens the profitability of banks. Moreover, most of the Nepalese commercial banks are found to approve the loans that are not well examined. This may further lead to increase the loan defaults and non-performing loans. Thus, the existing procedures for loan management are not adequate to compete with the existing financial and economic challenges in Nepal.

Moreover, the fact that the banking industry in Nepal is still growing and it should ensure that effective strategies are put in place to minimize risk and maximize loan performance at any particular point while in operation. Thus, this study aims to analyze the effect of

non-performing loan on bank profitability of commercial banks listed in the Nepalese Stock Exchange. The findings of this study may enable bank executives understand how non-performing loan affect the profitability and they may then adopt the appropriate lending strategies.

The remainder of the study is outlined as follows: section two reviews related literature, section three discusses the research methodology, section four focuses on results and discussion, section five presents the conclusion and section six incorporates policy implications and research avenues.

2. Literature Review

The major empirical studies related to the non-performing loans and bank profitability has been summarized as follows:

- Rajan and Dhal (2003) have examined the Non-performing Loans and Terms of Credit of Public Sector Banks in India. They found that favourable macroeconomic conditions and financial factors such as banks size, cost of credit, credit maturity, and credit orientation have significant impact on the non-performing loans of Indian commercial banks.
- Karim *et al.* (2010) investigate the relationship between non-performing loans and bank efficiency in Malaysia and Singapore through the Tobit simultaneous equation regression model. The result shows that higher non-performing loan reduces cost efficiency and also lower cost efficiency increases non-performing loans.
- Shrestha (2011) has analyzed trend of NPLs and the effect of NPL on share price of the 18 sampled commercial banks of Nepal using the descriptive statistics, trend and one factor econometric model. The stratified sampling method was used in selecting the banks for the study. The author asserts that NPL of commercial banks is in decreasing trend, however, the total performing loan to total deposit ratio in the industry is an increasing trend during study period. The author further concludes that the real stock price of the commercial banks has a negative association with the levels of their NPLs.
- Lata (2014) has analyzed 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 for last 8 years. The author concluded that NPL is one of the major factors of influencing banks profitability and it has statistically significant negative impact on NII of SCBs for the study periods.
- Wangai, Bosire and Gathogo (2014) have examined the effect of non-performing loans on financial performance of microfinance banks (MFBs) in Kenya. A structured questionnaire was used to collect data from the respondents. The authors assert that credit risk significantly negatively affected financial performance of MFBs in Nakuru town. They have concluded that increase in credit risk would significantly reduce the MFBs' financial performance.
- Adebisi and Matthew (2015) have examined the impact of non-performing loans on firms' profitability of banks in Nigeria. The secondary data obtained from the Annual Report and Statement of Accounts of the NDIC for a period of seven (7) years (2006-2012) were analyzed using the regression model. The authors have found significant negative relationship between the Non-performing Loans (NPL) and Return on Assets (ROA); however, they found a positive but insignificant relationship between the Non-performing Loan (NPL) and Return on Equity (ROE) of Nigerian Banks.
- Chimkono, Muturi and Njeru (2016) have investigated the effect of non-performing loan ratio and other determinants on the financial performance of commercial banks in the Malawian banking sector. Secondary data of seven-year period from 2008 to 2014 have been collected and analyzed using regression method. The author concludes that non-performing loan ratio, cost efficiency ratios and average lending interest rate had a significant effect on the performance of banks in Malawi. They assert that cash reserve ratio variable was positively related to bank performance but was not significant.
- Kiran and Jones (2016) have evaluated the effect of non-performing assets on the profitability of banks. The data of SBI and 5 nationalized banks were collected and the relation between their gross non-performing assets and net profit was measured. The authors have concluded that except for SBI all the other banks exhibit a negative correlation between their gross non-performing assets and net profits. But for SBI the net profit is not at all affected by gross non-performing assets and it is in continuous profits only.
- Most of the related empirical studies are in agreement that NPL is one of the major factors of influencing banks' profitability. However the relationship between NPLR and bank profitability is still found unclear. Thus, this study investigates the relationships between NPLR and bank profitability in Nepalese reality.

3. Research Methodology

3.1. The Sample

This study examines the effect of non-performing loan on the profitability of commercial banks in Nepal over the period of 6 years (2010-2015). The convenience sampling method was used in choosing the banks for the study. Moreover, in selecting the 14 banks for the study, due care is given to include banks such as: joint venture, domestic, best performer, average performer and comparatively weak performer in the sample. The banks selected for the study are: Bank of Kathmandu Ltd., Everest Bank Ltd., Machhapuchchhre Bank Ltd., Nabil Bank Ltd., Nepal Bangladesh Bank Ltd., Nepal Investment Bank Ltd., Nepal SBI Bank Ltd., Sanima Bank Ltd., Siddhartha Bank Ltd., and Sunrise Bank Ltd., Laxmi Bank Ltd., Himalayan Bank Ltd., Standard Chartered Bank Nepal Ltd. and Citizens Bank International Ltd. The selected commercial banks fairly represent the study population. The population of this study constitutes the "A" class commercial banks in Nepal which are listed in the Nepalese Stock Exchange.

The selection of sample size generally depends on the purpose of the analysis. Hair, Anderson, Tatham and Black (2006) argue that there should be five observations for each independent variable in the variate (multivariate analysis). Further, they assert that although the minimum ratio is 5 to 1, the desire level is between 15 to 20 observations for each independent variable. When this level is reached, the results should be generalizable if the sample is representative. In view of Hair, Anderson, Tatham and Black (2006), the 77 observations chosen for this study justify the minimum sample size required to run the regression model with five independent variables.

This study has adopted descriptive and causal comparative research design. Data were sourced from the annual reports of the banks in the sample. The data include time-series and cross-sectional data, i.e. pooled data set and the effect of non-performing loan on the profitability of commercial banks has been estimated using pooled regression model. Data analysis was done using the Statistical Package for Social Sciences (SPSS)-16.

3.2. Study Variable and Hypothesis

The dependent variables and independent variables used in this study are as follows:

3.3. Dependent Variables

This study has adopted two classical profitability indicators as dependent variables. Return on assets (ROA) is one of the dependent variables used in this study, which express the risk taking behaviour of bank management in obtaining the satisfied level of profit per unit of total resources. It is calculated dividing net profit after tax by total assets of the bank. The another dependent variable used in this study as a measure of bank profitability is return on equity (ROE), which express the riskiness of owners in obtaining the satisfied level of divisible profit per unit of equity investments. It is calculated as net profit after tax divided by shareholders' equity which reflects a bank's efficiency at generating profits from every unit of shareholders' equity.

The study assumes that bank profitability is influenced by the non-performing loan ratio with controlling the effect of bank size, cost per loan assets, gross domestic product growth rate and inflation rate.

3.4. Independent Variables

The independent variables used in this study are: non-performing loan ratio, bank size, cost per loan assets, gross domestic product growth rate and inflation rate.

3.4.1. Non-Performing Loan Ratio

Non-performing loan ratio (NPLR) reflects the default rate on total loan and advances. Gizaw, Kebede and Selvaraj (2015) assert that non-performing loan ratio (NPLR) is the major indicator of commercial banks' credit risk. They find that NPLR has statistically significant large negative effect on profitability measured by ROA. However, Li and Zou (2014) and Alshatti (2015) have found the positive effect of non-performing/ gross loans ratio on the financial performance of banks. Contrary to these findings, Felix and Claudine (2008), Kargi (2011) and Kodithuwakku (2015) found an adverse impact of non-performing loans on the profitability. Moreover, Kithinji (2010) has asserted that the bulk of the profits of commercial banks are not influenced by the amount of non-performing loans. Although there are conflicting evidences on this issue, in view of the theory and majority of the empirical literature, a negative relationship is expected between non-performing loan ratio and bank's profitability ($\beta_1 < 0$).

- H_1 : Non-performing loan ratio has a significant and negative effect on bank profitability.

3.4.2. Bank Size

This study has used the natural logarithm of total assets as a proxy for bank size. The empirical literature on bank profitability presents mixed findings about the relationship between bank size and profitability. Demnirguc-Kunt and Huizinga (2000) report that larger banks tend to have higher margins. Staikouras and Wood (2004) and Kosmidou *et al.* (2005) suggest that large banks are likely to enjoy higher economics of scale and hence be able to produce services at a lower cost and more cheaply and efficiently than can small banks which would have a positive influence on profitability. Smaoui and Ben Salah (2012) have also found that larger bank size contributes to higher profitability in Islamic banks. However, Hassan and Bashir (2004) conclude that big size tends to be associated with less profitability in Islamic banks. In view of majority of the empirical literature, a positive relationship is expected between bank size and bank's profitability ($\beta_2 > 0$).

- H_2 : Bank size has a significant and positive effect on bank profitability

3.4.3. Cost per Loan Asset

Cost per loan asset (CLA) is the average cost per loan advanced to customer. It is calculated dividing total operating costs by total amount of loans. The empirical studies show the mixed results about the effect of cost per loan asset (CLA) on bank profitability. In Nepalese context, Paudel (2012) has found negative but statistically insignificant association between cost per loan asset (CLA) and bank performance (ROA) but in the Nigerian perspective, Kurawa and Garba (2014) have found significant positive association between cost per loan asset (CLA) ratio and bank's profitability (ROA). However, banks that are efficient in managing their expenses (costs), holding other factors constant, earn high profits. In view of theoretical perspective and empirical evidences, a negative relationship is expected between cost per loan asset and bank's profitability ($\beta_3 < 0$).

- H_3 : Cost per loan assets has a significant and negative effect on bank profitability

3.4.4. GDP Growth Rate

Annual GDP growth rate represents the growth of economic activity, which can be viewed as macroeconomic determinant of bank profitability. According to Demircuc-Kunt and Huizinga (1999), Bikker and Hu (2002), Athanasoglou, Brissimis & Delis (2008); GDP growth has a positive effect on banks profitability, possibly due to increase in lending rates. Likely, Hassan and Bashir (2003), and Saksonova & Solovjova (2011) find that Growth rate of GDP have positive effect on bank profitability. Likely, Zeitun (2012) has found that GDP is positively related with ROA and ROE ratios. However, Khrawish (2011) has found negative impact of GDP with ROA and ROE. Moreover, Smaoui and Ben Salah (2012) find that GDP growth has insignificant effect on bank profitability. In view of majority of the empirical literature, a positive relationship is expected between GDP growth rate and bank's profitability ($\beta_4 > 0$).

- H_4 : GDP growth rate has a significant and positive effect on bank profitability.

3.4.5. Inflation Rate

The account for macroeconomic risk is also considered by controlling for inflation. It is envisaged that the extent to which inflation affects bank profitability depends on whether future movements in inflation are fully anticipated or not. An inflation rate that is fully anticipated increases profits as banks can appropriately adjust interest rates in order to increase revenues, while an unexpected change could raise costs due to imperfect interest rate adjustment and reduces profits. Naceur and Kandil (2009) explain the negative coefficient by the fact that a higher inflation rate increases uncertainty and reduces demand for credit. However, other studies (Alexiou and Sofoklis, 2009; Athanasoglou et al., 2008; Claeys and Vander Venet (2008); García-Herreto et al., 2009; Kasman et al., 2010; Pasiouras and Kosmidou, 2007) confirm a positive relationship between inflation and profitability. The empirical findings on the effect of inflations on banking profitability are a mixed one, even though, a greater proportion of the findings revealed a positive relationship. In line with the majority of the past empirical studies, a positive relationship is expected between inflation rate and bank's profitability ($\beta_5 > 0$).

- H_5 : Inflation rate has a significant and positive effect on bank profitability.

3.5. The Model

Pooled data regression model has been used to investigate the effect of NPLR on bank profitability in Nepalese perspective. The technique of pooled data estimation takes care of the problem of heterogeneity in the 14 banks selected for the study. The econometric model employed in the study is given as:

$$Y = \beta_0 + \beta X_{it} + \varepsilon_{it}$$

Where: Y is the dependent variable; β_0 is constant; β is the coefficient of explanatory variables; X_{it} is the vector of explanatory variables; and ε_{it} is the error term (assumed to have zero mean and independent across the time period). By adopting the prescribed econometric model, particularly to this study, the impact of non-performing loan on bank profitability of the commercial banks has been estimated with the following regression equation:

$$ROA_{i,t} = \beta_0 + \beta_1 NPLR_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CLA_{i,t} + \beta_4 GDP_t + \beta_5 INF_t + e_{i,t} \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 NPLR_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CLA_{i,t} + \beta_4 GDP_t + \beta_5 INF_t + e_{i,t} \quad (2)$$

Where:

- $ROA_{i,t}$ = Return on assets (ratio of earnings after taxes to total assets) of bank i in year t
- $ROE_{i,t}$ = Return on equity (ratio of earnings after taxes to common equity) of bank i in year t
- $NPLR_{i,t}$ = Non-performing loan ratio of i^{th} bank in year t
- $SIZE_{i,t}$ = Natural logarithm of total assets of i^{th} bank in year t
- $CLA_{i,t}$ = Cost per loan assets of i^{th} bank in year t
- GDP_t = Gross domestic product growth rate at year t
- INF_t = Inflation rate at year t
- B_0 = The intercept (constant)
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = The slope which represents the degree with which bank profitability changes as the independent variable changes by one unit variable.
- e_{it} = error component

The selected study variables, their definition, basis of measurement and priori expected sign have been depicted in Table 1.

No.	Abbreviation Variables	Description	Measurement	Expected Sign
1	NPLR	Non-performing loan ratio	Non-performing loan/gross loans and advances	-
2	SIZE	Bank size	Natural logarithm of total assets	+
3	CLA	Cost per loan assets	Total operating costs divided by total amount of loans	-
4	GDP	Gross domestic product growth rate	Annual gross domestic product growth rate	+
5	INF	Inflation rate	Annual inflation rate	+

Table 1: Variables definition, measurement and expected sign

The hypotheses have been tested with correlation and regression analysis using the Statistical Package for Social Sciences (SPSS)-16 outputs.

4. Results and Discussion

4.1. Descriptive Statistics

The descriptive statistics of variables used in the study have been presented in Table 2. The results of the descriptive statistics show that the average value of the bank profitability: ROA is 1.669% and ROE is 18.626% which indicate that during the period 2010-2015, on average, the total assets of sample commercial banks in Nepal generate 1.625% return while the owner equity of these banks earns 18.626% return. The standard deviation of the ROA is 0.789, which shows the lack of substantial variation. However, standard deviation of the ROE is 8.988, which indicates the substantial variation in equity returns. The minimum non-performing loan ratio is 0.004% and that of maximum is 17.99%, which show the much variation in non-performing loan ratios of selected banks during sample period. NPLR is a general factor for commercial banks as it is acceptable up to a certain limit. However, NPLR for sample commercial banks for selected 6 years period is really alarming. The NPLR indicates that there is very poor initiative in controlling of non-performing loans by Nepalese commercial banks.

Variable	Scale	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25	50	75
ROA	Percent	1.669	0.789	0.000	4.010	1.180	1.600	2.190
ROE	Percent	18.626	8.988	-6.137	47.872	14.403	18.090	24.704
NPLR	Percent	1.796	2.212	0.004	17.990	0.620	1.350	2.310
SIZE	Ln	24.285	0.560	22.703	25.371	23.863	24.345	24.758
CLA	Ratio	0.064	0.037	0.020	0.152	0.030	0.052	0.096
GDP	Percent	14.036	3.600	9.400	20.700	11.000	14.500	14.600
INF	Percent	9.109	0.813	7.200	9.900	8.300	9.600	9.600

Table 2: Descriptive statistics of variables (n=77)

Source: Annual report of sample companies and results are drawn from SPSS-16.

The minimum inflation rate is 7.20% and maximum inflation rate is 9.90%, which show the low variation in inflation rate during sample period.

4.2. Correlation Analysis

The bivariate Pearson correlation coefficients among the variables used in this study have been shown in Table 3. The results show some insights into the independent variables that are significantly correlated to the dependent variables: ROA and ROE. The Pearson correlation coefficient indicates that bank profitability (ROA) is significantly negatively correlated with non-performing loan ratio. The result implies that as the value of non-performing loan ratio increases, the performance of banks will decrease. However correlation coefficient between bank profitability measured by ROE and non-performing loan ratio is positive but the relationship is not strong.

The significant positive relationship is found between bank size and the both measures of bank profitability (ROA & ROE). The results indicate that large size commercial banks in Nepal are more profitable than that of smaller one. The significant positive relationships have been found between cost per loan assets ratio and the both measures of bank profitability (ROA & ROE). However, the insignificant relationship is found between gross domestic product growth rate and bank profitability (ROA & ROE) which indicates that relationship is not strong. Moreover, the insignificant relationship is also found between inflation rate and bank profitability (ROA & ROE) which shows that inflation rate may not be regarded as the influencing variable affecting the profitability of Nepalese commercial banks.

	ROA	ROE	NPLR	SIZE	CLA	GDP	INF
ROA	1						
ROE	.523**	1					
NPLR	-.284*	.141	1				
SIZE	.350**	.489**	-.196	1			
CLA	.319**	.264*	.199	.209	1		
GDP	-.100	.099	.114	-.321**	.025	1	
INF	.058	.048	.085	-.252*	.190	.470**	1

Table 3: Pearson correlations coefficients (n=77)

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

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

Source: Annual report of sample companies and results are drawn from SPSS-16.

The correlation matrix of the variables presented Table 3 reveals that all correlations coefficients among the independent variables are less than 0.5, implying the absence of multicollinearity. Thus, there is no evidence of presence of multicollinearity among the independent variables.

4.3. Regression Results

The regression results of the effect of non-performing loan ratio on profitability of Nepalese Commercial banks have been shown in Table-4. The values of R^2 are .279 and .373 in model 1 and model 2 respectively. The overall explanatory powers of the regression models look fair. This indicates that 27.9% of the variation in bank profitability (ROA) can be explained by the variation in the explanatory variables in model 1. Likely, 37.3% of the variation in bank profitability (ROE) can be explained by the variation in the explanatory variables in model 2.

The p-values for F statistics in both models are significant at 1% level of significance, meaning that the both models are fairly fitted well statistically. As a test of the presence of multicollinearity among independent variables in the models, variance inflation factors (VIF) have been computed. The variance inflation factors (VIF) show the values less than 2 for each variable in both models. The larger the value of VIF, the more troublesome or collinear the variables and as a rule of thumb a VIF greater than 10 is unacceptable (Gujarati, 2004). Thus, VIF less than 2 for each variable indicates the non-presence of multicollinearity. Thus, the estimated regression models are free from multicollinearity problem and independent variables chosen for both models are best suited for regression analysis.

$$ROA_{i,t} = \beta_0 + \beta_1 NPLR_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CLA_{i,t} + \beta_4 GDP_t + \beta_5 INF_t + e_{i,t} \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 NPLR_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CLA_{i,t} + \beta_4 GDP_t + \beta_5 INF_t + e_{i,t} \quad (2)$$

Predictors	Dependent Variable: ROA			Dependent Variable: ROE		
	Coefficient	p-value	VIF	Coefficient	p-value	VIF
Constant	-7.489	.081		-233.828**	.000	
NPLR	-.108**	.006	1.113	.860*	.036	1.113
SIZE	.335*	.041	1.282	9.707**	.000	1.282
CLA	6.547**	.006	1.194	18.995	.444	1.194
GDP	-.010	.692	1.363	.602*	.031	1.363
INF	.104	.371	1.383	.606	.621	1.383
	$R^2 = .279$; F-value = 5.508; Adj. $R^2 = .229$ F(sig) = .000			$R^2 = .373$; F-value = 8.440; Adj. $R^2 = .329$ F(sig) = .000		

Table 4: Regression results of effect of non-performing loan ratio on bank profitability

** Significant at the 0.01 level (2-tailed)

* Significant at the 0.05 level (2-tailed).

Source: Annual report of sample companies and results are drawn from SPSS-16

The regression results indicate that the coefficient of non-performing loan ratio is negative and statistically significant for both measure of bank profitability (ROA & ROE). The result indicates that increase in the amount of non-performing loan reduces the profitability of Nepalese commercial banks. The result is found as expected because theoretically, NPLR was expected to have a negative relationship with bank profitability. The result is also similar to Felix & Claudine (2008), Kargi (2011), Kodithuwakku (2015), and Gizaw, Kebede & Selvaraj (2015), where they have found negative effect of NPLR on bank profitability. However, the result is contrary to Li and Zou (2014) and Alshatti (2015), where they have found the positive effect of non-performing/ gross loans ratio on the financial performance of banks.

As expected, there is a strong positive association between bank size and both measures of banks profitability (ROA & ROE). It indicates that large banks are likely to enjoy higher economics of scale and hence be able to produce services at a lower cost and more cheaply and efficiently than can small banks which would have a positive influence on the profitability of Nepalese commercial banks. The result is similar to the Demnirguc-Kunt and Huizinga (2000), Staikouras and Wood (2004), Kosmidou et al. (2005), Smaoui & Ben Salah (2012), who have found that larger bank size contributes to higher profitability. However, the result is contrary to Hassan and Bashir (2004), who have claimed that big size tends to be associated with less profitability of banks.

Cost per loan assets has positive and statistically significant impact on bank profitability measured by ROA at 1% level of significance but it has negligible impact on profitability measured by ROE. The result indicates that increase in cost per loan assets ratio positively contributes to return on assets of Nepalese commercial banks. The result is contrary to priori expectation but is consistent with Kurawa and Garba (2014) who found significant and positive relationship between cost per loan assets and bank performance.

Gross domestic product growth rate is found positively associated with profitability as measured by ROE; however it has negligible negative impact on profitability measured by ROA. The result indicates that gross domestic product growth rate positively contribute to the return of the owners of Nepalese commercial banks. The estimated result shows that inflation rate has negligible effect on the profitability of Nepalese commercial banks.

5. Conclusion

This study has investigated the impact of non-performing loan on profitability of Nepalese commercial banks. Pooled data of fourteen commercial banks with 77 observations for the period of 2010 to 2015 have been analyzed using regression model. The estimated regression models reveal that NPLR has negative and statistically significant impact on bank profitability (ROA). However, it shows positive association between NPLR and bank profitability as measured by ROE. Bank size has positive and statistically significant impact on bank profitability (ROA, ROE). Cost per loan assets has positive and statistically significant effect on bank profitability (ROA). Gross domestic product growth rate is found positively associated with profitability as measured by ROE; however it has negligible negative impact on profitability measured by ROA. The estimated result shows that inflation rate has negligible effect on the profitability (ROA, ROE) of Nepalese commercial banks.

The findings of this study indicate that the sampled commercial in Nepal have poor lending practices. This study concludes that profitability of commercial banks in Nepal is influenced by the non-performing loan ratio and other covariates like: bank size, cost per loan assets and gross domestic product growth rate.

6. Policy Implications and Research Avenues

This study offers the following recommendations through which commercial bank in Nepal can work to improve loan management and reduce non-performing loans to have an effective role in achieving better profitability (ROA&ROE).

The negative coefficient of 'non-performing loan ratio' with bank profitability indicates that there is higher level of loan loss provision charged against profit and eventually leads to reduce bank profitability (ROA). Thus, Nepalese commercial banks should strictly follow the prevailing NRB Directive as well as Basel II Accord while granting loan and advances to the customers. Compliance with the Basel II Accord means a sound approach to tackling credit risk and this ultimately improves bank profitability.

The senior bank management should ensure that there is a periodic independent internal assessment of the bank lending policy, lending activities and loan collection procedures. The periodic such internal assessment can be of help to identify weakness and thus, bank management can early exercise corrective action to keep NPL as low as possible which will enable to maintain the high profitability of commercial banks in Nepal. Presently, most of the loan defaulters are unwilling to repay loan due to political shadow and thus, this types of unexpected influence should be eliminated by exercising good political culture and maintaining the law and order in Nepal.

Moreover, this study is hoped to be useful to academicians as a source of knowledge for further research. The study is concentrated on only five factors and thus, further study should be carried out on the topic including other bank specific variables, industry variables and macro level factors to identify the major determinants of the profitability of Nepalese commercial banks.

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