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Credit Risk Management and Profitability of Joint Venture Commercial Banks in Nepal

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Abstract—*Credit risk management is one of the vital aspects of the financial institutions regardless of their nature. For a more comprehensive analysis of Nepalese banking sector, investment and commercial banks both were chosen for assessing the relationship between credit risk management and profitability. Descriptive and casual research design of study helped in assessing the casual effect relationship between the research variables. The regression model was used for gathering quantitative findings while structured interview from bank managers was selected for gathering qualitative data. The findings of the regression model in the current study confirmed that there is no consequence of credit risk on profitability of joint venture banks of Nepal.*

The study is focused on credit risk management and profitability of joint venture commercial bank of Nepal with reference of NABIL, NIBL, SCBl, EBL, NSBI and HBL, it is able to find out the comparative study of joint venture banks on the basis of Credit to deposit ratio, non-performing credit to total credit ratio and ROA. All the data used in this study are secondary in nature from annual report of joint venture commercial banks. In this study six joint venture banks as sample. This study is based on the five years performance of the bank from 2012 to 2016.

Keywords*: Credit, Deposit, Non-performing credit, Profitability, and ROA*

1. INTRODUCTION

Credit risk management has turned out as a vital issue in the current intensely complicated and competitive business environment. Undoubtedly, after recent financial crisis, it can be believed that banking sector at present are the largest financial institutions. Businesses and industries are heavily dependent upon the credit grants from these banks. The uncertain and volatile financial environment all across the globe has increased credit risk for the banking institutions, which is ultimately affecting the level of their profitability (Berríos,2013).

Management of bank risks is the most important factor for financial stability & economic growth in the developed economics (Roger, 2003). Management of trade off between risks & returns is important for sustainable profitability of banks and other financial institutions. Among risk in banking operation credit risk which is related to substantial amount of income generating assets is found to be important determinants of bank performances. So, credit risk management capability of a bank remained a live managerial discourse in financial management & overall health of financial institution depended upon the power management of credit risk. The risk focused examination process has been adapted to credit the inspection process to the more risk areas of both operation and business. Credit risk is considered as greater risk from all other risk affecting in the financial performance of bank.

2. REVIEW OF LITERATURE

Gizaw, Kebede, and Selvaraj (2015) In this study

focused on the relationship between credit risk management and profitability levels of the banks operating in Ethiopia on commercial basis. The findings of research revealed that there is a significant relationship between the non-performing loan, loan loss provisions and capital adequacy within the commercial banks of Ethiopia.

Brown and Moles (2014) define credit risk as the risk related with the loans; banks lend to the borrower and normally charge a fee against it. The banks redistribute its finance in the form of debt to borrowers, which is needed to be paid back by the distributors. However, there is no assurance of the fact that such amount would be re-paid by the borrowers and the risk of default is always there for the banks on lend loans. Financial researchers and analysts regard such risk as credit risk.

Gholami and Salimi(2014), this study was investigated the relationship between credit risk management and liquidity management and the profitability in banking sector. In this atusy based on the series of practical solutions, a significant relationship of credit risk management with profitability was evident. It was further stated that banks' financial statements are immensely affected by the credit risk. In other words, for increasing the business profitability, credit risk monitoring must be perfect. The study concluded a negative relationship between the credit risk and the profitability.

Poudel (2012), recent study in Nepal the effect of CRM on the financial performance of Nepalese banks measuring through

regression analysis. The study establishes that all credit risk factors have an inverse influence on the financial performance of banks; conversely, the *DR* exerts a major impact on bank performance. The study proposes banks to create and develop policies with the aim of not only reducing the exposure of the banks to credit risk but also improving profitability.

Chen and Pan (2012) assessed the credit risk efficiency of banks for the period of four years (2005-2008). The study employs financial ratio to measure the credit risk and evaluate using Data Envelopment Analysis (DEA). The credit risk measures were credit risk technical efficiency, credit risk allocation efficiency, and credit risk cost efficiency. The findings suggest that only one bank is competent in all forms of efficiencies over the assessment periods.

Boahene et al. (2012) utilized regression analysis in an attempt to reveal the connection between credit risk and profitability of selected banks and established that credit risk components (non-performing loan rate, net charge-off rate, and the pre-provision profit as a percentage of net total loans and advances) have a positive and significant relationship with bank profitability in Ghana. This shows that banks in Ghana enjoy high profitability regardless of high credit risk, an opposing view to other views expressed in many studies that credit risk indicators are negatively related to profitability.

Kolapo, Ayeni, and Oke (2012) studied CRM and performance of Nigerian banks using panel model regression analysis. They argued that the impact of credit risk on bank performance considered using the *ROA* of banks as a measure of performance in Nigeria is cross-sectional invariant. A rise in non-performing loans or loan losses provision reduces profitability (*ROA*), whereas a rise in total loan and advances improves profitability. The study suggests that Nigeria banks have to improve their ability in credit analysis and loan management, whereas the regulatory authorities ought to give extra concentration to banks' conformity to applicable requirements of the Bank and Other Financial Institutions Act (BOFIA)1 and prudential guidelines governing banking practices in Nigeria.

Aduda and Gitonga (2011) found that there was a positive and significant relationship between the credit risk management and the profitability level of Nigerian commercial banks.

3. RESEARCH METHODOLOGY

Descriptive and explanatory research design was used. The chosen design was appropriate in developing the cause and effect relationships between credit risk management and profitability within the joint-venture banks in Nepal. The purpose of current study was to assess the degree of relationship along with the detailed description of current situation in Nepalese banks. McNabb (2004) defines explanatory research a study used for the development of the causal explanation of some social phenomenon. The design was therefore helpful in using the theories for the predicting the future behaviors and circumstances in the Nepalese joint-venture banks.

The current study undertakes the examination of all joint-venture banks population in Nepalese.

The current study undertakes the examination of all commercial and investment banks population in Nepalese as at 31 December 2017. All the banks chosen were licensed and registered under the Banking Act. Of Nepal. All these banks made the target population for the research. According to Babbie (2007), population represents the group of people sharing the similar characteristics and upon which the study results could be generalized. There is not large number of banks in Nepal (total 28 banks including national and joint venture commercial banks). Therefore, the sample size was not too large. The random samples of six joint venture bank were extracted from the commercial banks' population that made up of approximately 22% of the entire population. The good representation of sample offered a reliable base for the valid and reliable conclusions. Moreover, secondary data sources were used in this study. On the other hand, for quantitative information data was extracted from the published financial statements of the banks for a period of 5 years i.e. 2012-2016. The data was obtained from the official database. ROA was used as the indicator of profitability in the regression analysis.

The Empirical Model

Model Specification

The econometric model employed in the study is given as:

$$\text{Profitability (ROA)} = \beta 0 + \beta 1 CDR + \beta 2\ NPCTCR + e i$$

Where, ROA is the dependent variable; $\beta 0$ is constant; $\beta 1CDR$ *and* $\beta 2NPCTCR$ are the coefficient of explanatory variable; *Fit* is the explanatory variable; and εi is the error term (assumed to have zero mean and independent across the time period).

Test of Regression co-efficients of multiple regression model:

For F-ratio forming alternative hypothesis H1: $\beta 1 \neq \beta 2 \neq 0$ ie atleast one $\beta i \neq 0$

4. DATA PRESENTATION AND ANALYSIS

Credit to deposit ratio (CDR)

Credit-deposit ratio, popularly CD ratio, is the ratio of how much a bank lends out of the deposits it has mobilized. NRB does not stipulate a minimum or maximum level for the ratio, but a very low ratio indicates banks are not making full use of their resources. Alternatively, a high ratio indicates more reliance on deposits for lending and a likely pressure on resources.

CD ratio helps in assessing a bank's liquidity and indicates its health - if the ratio is too low, banks may not be earning as

much as they could be. If the ratio is too high, it means that banks might not have enough liquidity to cover any unforseen fund requirements, may affect capital adequacy and asset-liability mis-match. A very high ratio could have implications at the systemic level.(P. Tulsiyan)

Banks	2012	2013	2014	2015	2016
EBL	73.20	76.57	78.01	66.63	73.50
HBL	75.36	77.36	71.82	75.37	79.12
NABIL	77.91	74.90	74.55	64.43	70.49
NIBL	75.30	76.40	72.40	74.70	80.10
NSBI	49.62	49.55	65.54	78.39	72.90
SCBL	55.13	58.63	56.87	48.92	56.88

Non-performing credit to total credit ratio (NPCTC)

Non-performing loans are loans on which repayments or interest payments are not being made on time. A loan is an asset for a bank as the interest payments and the repayments of the principal create a stream of cash flows. It is from the interest payments, a bank makes its profits. Banks usually treat assets as non-performing if they are not serviced for some time. If payments are late for a short time, a loan is classified as past due. Once a payment becomes really late, the loan is classified as non-performing.

Increase in the amount of non-performing assets or loans means mismanagement of loan and deposit of individuals and households. Profitability of bank may decrease. So, commercial banks need to reduce non-performing assets or loan.

Banks	2012	2013	2014	2015	2016
EBL	0.84	0.62	0.97	0.66	0.38
HBL	2.09	2.89	1.96	3.22	1.23
NABIL	2.33	2.13	2.23	1.82	1.14
NIBL	3.32	1.91	1.77	1.25	0.68
NSBI	0.54	0.37	0.26	0.19	0.14
SCBL	0.78	0.77	0.48	0.34	0.32

Return on Assets (ROA)

ROA is related to net profit after tax (NPAT) and Total Assets. How efficiently is the assets of a firm able to generate more profit, are measured by this ratio. It is calculated by dividing NPAT by Total Assets. This ratio provides the foundation necessary for a company to deliver a good return on assets. Return on Total Assets ratio of EBL, HBL, BABIL, NIBL, NSBI and SCBL for the period of 2011/12 to 2015/16 are presented in the following table.

Banks	2012	2013	2014	2015	2016
EBL	2.11	2.39	2.25	1.85	1.85
HBL	1.76	1.54	1.30	1.34	1.94
NABIL	2.80	3.25	2.65	2.06	2.32
NIBL	1.60	2.60	2.30	1.90	2.00
NSBI	1.19	1.51	1.80	1.70	1.53
SCBL	2.80	2.67	2.51	1.99	1.98

Data Presentation and Analysis

The analysis of study findings of the investigation on the effect of Credit risk management on Profitability of six (6) joint venture banks in Nepal between the years 2012 to 2016. In the study variables which were included are Return on Assets (ROA), Non-performing credit to total credit ratio (NPCTC) and Credit Deposit ratio (CDR). This chapter analyses the variables involved in the study.

Explained Variables:	
Variables	Description
ROA	Return on Assets
Explanatory Variables:	
Variables	Description
NPCTC	Non-performing credit to total ratio
CDR	Credit Deposit Ratio

Descriptive Analysis

The descriptive statistics of the explanatory and explained variables in this study are presented. It is based on a panel data set organized from six joint venture commercial banks operating in the Nepalese financial market during the period from 2012 to 2016. Looking at them, generally, the statistics indicate a wide variability exist in the indicators of liquidity management and profitability of commercial banks.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	5	1.81	2.33	2.0497	.19740
CDR	5	67.75	72.17	69.3517	1.77269
NPCTC	5	.65	1.65	1.2543	.37485
Valid N (listwise)	5				

Descriptive Analysis Result

The ROA has a mean value of 2.0497% with standard deviation of 0.19740%. Credit Deposit Ratio (CDR) variable has the mean value of 69.3517%. Standard deviation of CDR is 1.77269. Non-performing credit to total ratio (NCTC) has a mean of 1.2543%. It has standard deviation of 0.37485% which also shows there was low variability than all other variables used in the study.

Regression Analysis

The result of regression analysis shows the goodness of fit of the Credit risk management variables in explaining the variations in profitability of joint venture commercial banks in Nepal.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.860[a]	.740	.480	.14229

a. Predictors: (Constant), NPCTC, CDR

Regression Analysis of ROA on CRM

Similarly on the basis of the study, correlation coefficient (r) was .860 and the coefficient of determination (r2) was .740 indicating that 74% of the profitability of joint venture commercial banks in terms of Return on Assets (ROA) can be predicted by the CRM variables identified in the study. Since the correlation of .0.740 is positive it can be concluded that the correlation is statistically significant, hence there is a positive relationship between working capital management and profitability of joint venture commercial banks in Nepal.

Regression Analysis of ROA on CRM

Variables Entered/Removeda

Model	Variables Entered	Variables Removed	Method
1	NPCTC, CDR[b]	.	Enter

a. Dependent Variable: ROA
b. All requested variables entered.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-12.854	7.014		-1.833	.208
	CDR	.196	.094	1.758	2.087	.172
	NPCTC	1.057	.444	2.007	2.382	.140

a. Dependent Variable: ROA

Result of Regression Analysis of ROA on LM

ROA = -12.854 + 0.196CDR + 1.057NPCTC

The findings of the analysis is based on the significance level (alpha) of 0.05 (95%), degrees of freedom (df) of 2, and two-tailed test indicated. The result show a positive coefficient of determination (R2) indicating that: Return on Assets is influenced by Non-performing credit to total ratio (NPCTC) and Credit Deposit Ratio (CDR). In addition, the computed t-values: Credit Deposit Ratio (CDR) (t= 02.087) and Non-performing credit to total ratio (NPCTC) (t=2.382); are higher than the significance threshold of 1.96 (0.05). This then indicate that there is a significant relationship between Profitability of commercial banks and Credit Deposit Ratio (CDR) and Non-performing credit to total ratio (NPCTC)

5. CONCLUSION

The paper confirms that there is positive relationship between credit risk and profitability in such way that profits of banks are affected due to credit facilities. Various ratios are used by the banks for determining their profitability level. Return on assets (ROA), NPCTC and CDR however were found effectively used in most of the past studies. It can be summarized at the end that there is no difference in the investment and commercial banks in relation to the association between credit risk and profitability.

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