Credit Risk and Commercial Banks’ Profitability in Nepal: A Panel Approach

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Abstract
This study has investigated the effect of credit risk on the profitability of commercial banks in Nepal over the period of 8 years (2009 to 2016). Panel data of six commercial banks were analyzed using pooled OLS model, fixed effects model and random effect model. The results from the estimated regression models show that default risk is significantly positively associated with banks’ profitability. However, capital adequacy ratio is found significantly negatively associated to profitability. The effect of cost per loan assets seems minimal in explaining the variation of commercial banks’ profitability. Thus, this study concludes that credit risk indicators like: default risk and capital adequacy ratio have significant impact on the profitability of commercial banks in Nepal.

Keywords: Commercial Banks, Credit Risk, Nepal, Panel Data Regression, Profitability.
JEL Classification: C23, C33, G21, G32, N25, O16

I. Introduction
A key function of banks is to channel savers’ deposits to people that wish to borrow. However, lending is an inherently risky business. Bad lending is the root of many banking crises and presence of huge amount of non-performing loans. At the most general level, a non-performing loan is a loan where a borrower is not making repayment in accordance with contractual obligations. In many jurisdictions and many firms, an NPL is defined as a sum of borrowed money upon which the debtors has not made his or her scheduled payments for at least 90 days (Bholat, Lastra, Markose, Miglionico & Sen, 2016). The increasing level of non-performing loan rates in banks books, poor loan processing, undue interference in the loan granting process, inadequate or absence of loan collaterals among other things are linked with poor and ineffective credit risk management that negatively impact on banks performance (Muriithi, Waweru & Muturi, 2016). Thus, credit risk may have
a vital effect on the profitability of banks since it gives rise to non-performing loans. Credit risk management is crucial to banks because it is an integral part of the loan process. A bad credit policy can lead to inappropriate allocation of credit which may result in bad debts and, hence, lost of income in the form of interest and banks’ asset on the principal loaned out. Moreover, a bad credit policy can move up default rate and hence, could reduce the profitability of commercial banks. Thus, sound credit risk management is necessary as it can enhance sustainable financial performance (profitability) of commercial banks.

Commercial banks may have a keen awareness of the need to identify, measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for risks incurred. Moreover, Nepalese commercial banks have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to the relaxed credit standards for borrowers and counterparties, poor portfolio risk management whereby they fail to determine the best asset combination to invest in, which should have a negative correlation or lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a bank's counterparties thus, making them default in honoring their obligations as regards repayment of the loans. However, in recent years, some policies have been reformed to improve banks performance and some measures have been taken to minimize on the negative effects of lending. Moreover, policy makers have focused on mergers of commercial banks to increase capital requirements and lessened the competition.

Despite the some policies measures undertaken to reduce credit risk in the banking sector in Nepal, there is still increasing trend of loan defaults and non-performing loans of Nepalese commercial banks. Thus there is the need of such study that can uncover the credit risk measures and their impact on bank profitability in Nepalese context. This study, therefore, seeks to investigate the impact of credit risk indicators on the profitability of commercial banks in Nepal. Thus, this study aims to analyze the effect of credit risk on profitability of commercial banks listed in the Nepalese Stock Exchange. The findings of this study would serve as the basis to provide policy measures useful to the various authorities on how to tackle
the effect of credit risk in order to enhance the quality of banks’ risky assets. This study also provides the empirical evidence in confirming the validity of the theories to assist the bank’s management in determining the best credit risk strategies that enhance banks’ profitability.

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 and section five presents the conclusion.

II. Literature Review

Some of the recent studies related to the credit risk and commercial banks’ profitability have been summarized as follows:

Fredrick (2012) has examined the impact of credit risk management on the financial performance of commercial banks in Kenya. The secondary data were collected from the CBK publications and financial statements of respective banks in sample for the period of 2006-2010. The results of the study indicate that earnings have a strong relationship with financial performance. The author concludes that CAMEL components have strong impact on the financial performance of commercial banks.

Funso, Kolade and Ojo (2012) have investigated the effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000-2010). Panel data from five commercial banks were analyzed using constant effect model (pooled OLS model) and fixed effects model. Based on the results from these models, the authors conclude that non-performing loan and loan loss provision have significant negative effect on profitability; however, loan and advances ratio (LA) has significant positive effect on profitability across the banking firms.

Kaaya and Pastory (2013) have examined the relationship between the credit risk and bank performance as measured by return on asset. Regression model was used to in order to analyze the data. The results show that credit risk indicators have produced negative correlation with bank performance.

Kurawa and Garba (2014) have assessed the effect of credit risk management on the profitability of Nigerian banks. The study covered the period from 2002 to 2011. Secondary data of 6 commercial banks were used for the study. The findings of the study reveal that default risk and cost
per loan assets have significant positive relationship with profitability (ROA).

Tehulu and Olana (2014) have examined the bank-specific determinants of credit risk in Ethiopian commercial banks using a balanced panel data of 10 commercial banks both state-owned and private owned for the period of five years (2007 - 2011). Data were analyzed using random effects GLS regression. The authors concluded that credit growth and bank size have negative and statistically significant impact on credit risk; however, operating inefficiency and ownership have positive and statistically significant impact on credit risk.

Alshatti (2015) has examined the effect of credit risk management on financial performance of the Jordanian commercial banks during the period 2005-2013. A sample of thirteen commercial banks has been chosen to represent the whole Jordanian commercial banks. The author concludes that the credit risk management indicators have a significant effect on financial performance of the Jordanian commercial banks.

Djan, Stephen, Bawuah, Halidu and Kuutol (2015) have examined the impact of credit risk on performance of banks in Ghana. The study has selected banks listed on the Ghana Stock Exchange (GSE) as sample for a 10 year period (2005-2014). The statistical tools like descriptive, correlation and regression model were used to analyze the data. The study revealed that all coefficients of the parameters are negative implying an inverse relationship between the dependent variable (Return on Asset) and the independent variables (Default Rate, Capital Adequacy Ratio and Cost per loan Asset). The authors conclude that these parameters have an inverse impact on banks’ performance; however, the default rate is the most predictor of bank financial performance.

Kodithuwakku (2015) has examined the impact of credit risk management on the performance of the commercial banks in Sri Lanka using both primary and secondary data. The return on assets (ROA) was used as performance indicator and loan provision to total loan (LP/TL), loan provision to non-performing loans (LP/NPL), loan provision to total assets (LP/TA) and non-performing loans/ total loans (NPL/TL) were used as indicators of credit risk. The result concludes that non-performing loans and provisions have an adverse impact on the profitability.
Lalon (2015) has analyzed the impact of credit risk management on financial performance of bank using the secondary data relating to the financial status of Basic Bank Ltd. The author finds significant negative association between non-performing loan ratio and banks profitability. The author concludes that an attempt to decrease on non-performing loan ratio can positively contribute on banks financial performance.

Olamide, Uwalomwa and Ranti (2015) have investigated the impact of effective risk management on bank’s financial performance using the data of 14 banks listed on the floor of the Nigerian Stock Exchange over a period of 2006 to 2012. The results of their study show that there exist a negative non-significant relationship between risk management proxies and bank’s performance as captured with return on equity. The authors conclude that the increased drive for the management of risk poses a limit on the earning capacity of Nigerian banks.

Abubakar, Shaba, Ezeji and Ahmad (2016) have examined the effect of credit risk management on bank performance in Nigeria over the period 2000 through 2013 using a sample of 14 Deposit Money Banks quoted on the Nigerian Stock Exchange. The study has adopted panel regression estimation technique to analyze the data. The findings from the regression model show that credit risk management indicators impact significantly on bank performance in Nigeria. The authors conclude that the increase in loans and advances, equity capital and bank size positively contributes on the performance of Deposit Money Banks in Nigeria.

Otieno, Nyagol and Onditi (2016) have investigated the relationship between credit risk management and financial performance of microfinance banks in Kenya using a sample of 6 microfinance banks. The study has utilized panel data covering the period from 2011 to 2015. The findings of the study reveal that portfolio at risk (default risk) and loan loss provision coverage ratio had a strong negative relationship with both return on average assets and return on average equity performance measures. The authors conclude that credit risk management impacts performance of microfinance banks in Kenya.

The past empirical evidences elsewhere suggest that credit risk management is a predictor of banks’ profitability. Specifically, most of the past related studies advocate that credit risk indicators
like: default risk, capital adequacy ratio and cost per loan assets may have significant effect on banks’ profitability.

III. Research Methodology

The sample

This study has examined the credit risk and its impact on the financial performance of commercial banks in Nepal over the period of 8 years (2009 to 2016). This study has adopted descriptive and causal comparative research design. The convenience sampling method was used in choosing the banks for the study. Moreover, in selecting the 6 banks for the study, due care is given to include banks such as: joint venture, domestic, best performer, average performer and comparatively week performer in the sample. The banks selected for the study are: Everest Bank Ltd., Kumari Bank Ltd., Nabil Bank Ltd., Siddhartha Bank Ltd., Nepal Bangladesh Bank Ltd. and Sunrise Bank Ltd.. The population of this study is the “A class” commercial banks listed in the NEPSE. This study assumes that the selected samples fairly represent the study population.

The data

Data were collected from the annual reports of the banks in the sample. The data include cross-sectional and time-series data, i.e. panel data set. According to Greene (2007), the models for panel data can be arranged as: pooled regression, fixed effects, random effects and random parameters. In practice, panel data models are estimated using pooled OLS, fixed effects or random effects techniques (Mujeri & Younus, 2009). In view of theoretical perspective, this study has employed pooled OLS model, fixed effects model and random effects model in the data analysis procedures. Moreover, data analysis was done using the Gretl Version 1.1.

The model

This study has used three econometric models in analyzing the data. Initially pooled OLS model has been estimated in the current study. The simplest estimation for panel data is pooled OLS (Cottrell & Lucchetti, 2017). The pooled OLS model can be written as:

\[ Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \]

Where: \( Y \) is the dependent variable; \( \alpha \) is constant; \( \beta \) is the coefficient of explanatory variables; \( X_{it} \) is the vector of explanatory variables; and \( \varepsilon_{it} \) is the error term (assumed to have zero mean and independent across the time period). Based on the prescribed econometric model, impact of credit risk on the financial performance of commercial banks has
been estimated with the following regression equation:
\[
PROF_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 CAR_{it} + \beta_3 CLA_{it} + e_{it}
\]
Where:
- PROF\(_{it}\) = Profitability, which is calculated as net income divided by total assets of \(i^{th}\) bank in year \(t\)
- DR\(_{it}\) = Default risk, which is calculated as non-performing loans to total loans of \(i^{th}\) bank in year \(t\)
- CAR\(_{it}\) = Capital adequacy ratio of \(i^{th}\) bank in year \(t\)
- CLA\(_{it}\) = Cost per loan assets ratio of \(i^{th}\) bank in year \(t\)
- \(\beta_0\) = The intercept of the regression line
- \(\beta_1, \beta_2, \beta_3\) = The slope which represents the degree with which lending interest rates changes as the independent variable changes by one unit variable. The priori expectation is that the coefficients \(\beta_1, \beta_2, \text{ and } \beta_3 < 0\).
- \(e_{it}\) = error component.

In addition to the pooled OLS model, this study has employed other panel models like: fixed effects model and random effect model. Fixed effects estimation allows for the unobservable bank heterogeneity. Specifically, the model assumes that intercepts for each bank are allowed to vary, but the slopes for each bank are equal. In this instance, Greene (2007) has suggested following fixed effect model:
\[
Y_{it} = X_{it} \beta + \alpha_i + \varepsilon_{it}
\]
Where, \(\alpha_i = z_i \alpha\) embodies all the observable effects and specifies an estimable conditional mean. Greene (2007) assets that fixed effect approach takes \(\alpha_i\) to be a group-specific constant term in the regression model. The author indicates that each \(\alpha_i\) is treated as an unknown parameter to be estimated.

In some cases, fixed effects estimations become less efficient than random effects estimations. Random effects estimations take into consideration the unobservable bank heterogeneity effects, but incorporate these effects into the error terms, which are assumed to be uncorrelated with the explanatory variables. Likely, Greene (2007) has asserted that if the unobserved individual heterogeneity, however, formulated, can be assumed to be uncorrelated with the included variables, then the model may be formulated in random effect form. The random effect model suggested by Greene (2007) can be written as:
\[
Y_{it} = X_{it} \beta + \alpha_i + \varepsilon_{it}
\]
According to Greene (2007) this random effects approach specifies that \(u_i\) is a group specific random element, similar to \(\varepsilon_{it}\) except that for each group, there is but a single draw that enters the regression
identically in each period. However, the $\varepsilon_{it}$ represents within entity error. In order to capture the deferring attributes of panel data, the current study has employed these three regression models to estimate the association between credit risk and commercial banks’ profitability in Nepal.

**Variable and hypothesis**

In this study, the choice of variables was mostly affected by the approach in the past empirical studies.

**Dependent variable**

*Profitability (PROF)*

In this study, profitability is computed as net income divided by total assets. Return on assets is generally considered as a good indicator to evaluate the profitability of the assets of a bank in comparison to other banks in the banking industry. It is hypothesized that profitability of commercial bank is influenced by the bank specific credit risk variables like: default risk, capital adequacy ratio and cost per loan advanced.

**Independent variables**

*Default risk (DR)*

Default risk is a ratio that measures the proportion of non-performing loans as against the total loans for a period. It gives an assessment of the total borrowers default on the conditions of loans and advances for a given period. It simply measures the efficiency of the loan portfolio management for a given bank within a given period (Appa, 1996; Ahmed et al., 1998; Kolapo et al., 2012). In this respect, Kurawa and Garba (2014), Alshatti (2015) have found significant positive relationship between default risk and profitability. However, Poudel (2012), Kaaya and Pastory (2013) and Djan, Stephen, Bawuh, Halidu and Kuutol (2015) found significant negative association between non-performing loan (default risk) and profitability of commercial banks. Likely, Kodithuwakku (2015) has also asserted that non-performing loans and provisions have an adverse impact on the profitability. In line with majority of past empirical evidences, a negative relationship is expected between default risk and bank profitability ($\beta_1 < 0$).

$H_1$: Default risk has a significant and negative effect on bank profitability.

*Capital adequacy ratio (CAR)*

Capital adequacy ratio is calculated dividing capital fund by risk weighted assets. Capital adequacy increases the strength of the bank which improves the solvency of the bank and capacity to absorb the loan loss and protect bank from bankruptcy. Alshatti (2015) has asserted...
that capital adequacy ratio don’t affect the profitability of Jordanian commercial Banks. However, Poudel (2012) found significant negative association between capital adequacy ratio and bank performance in Nepalese context. Likely, Djan, Stephen, Bawuah, Halidu and Kuutol (2015) also found that capital adequacy ratio have an inverse impact on banks’ performance. In this scenario, a negative relationship is expected between capital adequacy ratio and bank profitability ($\beta_2 < 0$).

$H_2$: Capital adequacy ratio has a significant and negative effect on bank profitability.

Cost per loan assets (CLA)

Cost per loan assets is calculated dividing total operating costs by total amount of loans advanced to customers. Cost per loan assets points out efficiency in distributing loans to customers (Appa, 1996; Ahmed et al., 1998; & Kolapo et al., 2012). Banks that are efficient in managing their expenses (costs), holding other factors constant, earn high profits. Therefore, it is expected that cost per loan assets and bank performance to be negatively associated. This may not always be true because in cases where there are high expenditures due to a lot of businesses done, the bank can still increase the returns. However, the empirical studies show the mixed results on this issue. In Nepalese context, Paudel (2012) has found negative but statistically insignificant association between cost per loan assets (CLA) and bank performance (ROA). Kurawa and Garba (2014) have found significant positive association between cost per loan advanced and profitability. However, Djan, Stephen, Bawuah, Halidu and Kuutol (2015) also found that Cost per loan advanced has an inverse impact on banks’ performance. In view of theoretical perspective and empirical evidences, a negative relationship is expected between cost per loan assets and bank profitability ($\beta_3 < 0$).

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

IV. Results and Discussion

Descriptive statistics

The descriptive statistics of the variables used in the study have been presented in Table 1. The result shows that the minimum and maximum profitability (ROA) of Nepalese commercial banks during the sample period are 0% and 18.04% respectively. The average profitability (ROA) is 2.21%, which indicates the weak performance of Nepalese commercial banks.
The average default risk (DR) is 2.48%, which shows that default risk is not so severe in Nepalese commercial banks. Capital adequacy ratio is found less volatile during sample period. The key indicator of efficiency in loan management is the ratio of operating costs to loan and advances. The results of operating costs to loan and advances ranged from 0.04% in the most efficient to 0.17% at the other extreme. The average operating cost to loan and advances is 0.10% which shows that cost per loan advanced is not so high in Nepalese context. Cost per loan assets is found less volatile as compared to the other study variables used in the current study which is evident from low standard deviation of the cost per loan advanced variable, which is 0.03%.

**Correlation analysis**

The correlation coefficients among study variables are shown in Table 2. The results of the correlation coefficients of variables indicate that profitability is positively associated with default risk and cost per loan assets. This implies that the bank profitability (ROA) tends to move in the same direction as with default risk and cost per loan advanced. Moreover, the relationship between default risk and profitability is found strong but the liaison between cost per loan assets and profitability seems weak.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Scale</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
<th>CV</th>
<th>Skewness</th>
<th>Ex. kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>%</td>
<td>2.2092</td>
<td>2.6366</td>
<td>0.0000</td>
<td>18.0400</td>
<td>1.1935</td>
<td>-4.8568</td>
<td>25.8440</td>
</tr>
<tr>
<td>DR</td>
<td>%</td>
<td>2.4785</td>
<td>3.7198</td>
<td>0.1500</td>
<td>19.8000</td>
<td>1.5008</td>
<td>3.7104</td>
<td>13.8530</td>
</tr>
<tr>
<td>CAR</td>
<td>%</td>
<td>11.3860</td>
<td>1.1622</td>
<td>5.5500</td>
<td>13.7600</td>
<td>0.1021</td>
<td>-2.3492</td>
<td>11.7070</td>
</tr>
<tr>
<td>CLA</td>
<td>%</td>
<td>0.0975</td>
<td>0.0298</td>
<td>0.0400</td>
<td>0.1700</td>
<td>0.3055</td>
<td>0.2795</td>
<td>-0.5966</td>
</tr>
</tbody>
</table>

*Source: Annual report of sample banks and results are drawn from Gretl-1.1 Version*

<table>
<thead>
<tr>
<th>ROA</th>
<th></th>
<th>1.0000</th>
<th>0.5952</th>
<th>-0.6380</th>
<th>0.1066</th>
<th>0.0000</th>
<th>0.0000</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR</td>
<td></td>
<td>1.0000</td>
<td>-0.5563</td>
<td>0.4727</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>CAR</td>
<td></td>
<td>1.0000</td>
<td>-0.0641</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>CLA</td>
<td></td>
<td>1.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*Correlation coefficients are drawn from Gretl-1.1 Version*
However, capital adequacy ratio is negatively associated to profitability. The relationship between capital adequacy ratio and profitability is found strong. Moreover, the correlation matrix of the variables presented Table 2 reveal that all correlations coefficients among the independent variables are less than 0.60, implying the absence of multicollinearity. Thus, there is no evidence of presence of multicollinearity among the independent variables.

Regression results
The Table-3 presents the results of three regression models for measuring the effect of credit risk on the profitability of Nepalese commercial banks. Initially, the model diagnostic test has been conducted to choose appropriate model in the current study. The diagnostic test starts with the use of ‘Joint significance of differing group means’ test to compare pooled OLS model with fixed effect model. The results of F statistics $F(5,39) = 0.6490$ with p-value = 0.6639 accept the null hypothesis that the pooled OLS model is adequate. The general rule is that a low p-value counts against the null hypothesis that the pooled OLS model is adequate, in favor of the fixed effect alternative. Since, in this study, the p-value is more than 0.05, pooled OLS model seems adequate as compared to the fixed effect model.

Likely, in order to compare the pooled OLS model with random effect model, Breusch-Pagan test statistic has been used. The test result $LM = 0.5750$ with p-value = prob (Chi-square (1) >0.5750 = 0.4483, proves that pooled OLS model is adequate because p-value of chi-square is higher than 0.05. The results of Breusch-Pagan test statistic recommends pooled OLS model instead of random effect model for the current study.

Moreover, Hausman test was used to compare between fixed effect model and random effect model in the current study. The Hausman test statistic: Chi-square (3) = 0.8681 with its p-value =0.8331, indicate that the null-hypothesis is accepted, supporting random effect model instead of fixed effect model. Although, the model diagnostic test statistics have suggested pooled OLS model and random effect model to be used in the current study, however, the results of three models (pooled OLS model, fixed effect model and random effect model) have been presented and discussed in the current study for better estimation.
The variance inflation factor (VIF) shows a value less than 2.10 for each variable. The larger the value of VIF, the more troublesome or collinear the variables and as rule of thumb a VIF greater than 10 is unacceptable (Gujarati, 2004). However, multicollinearity problem is not a concern in the current study.

The empirical findings from three models (Pooled OLS and fixed effect model) confirm the non-presence of autocorrelation in the regression model. The results of the three regression models employed in the study are presented in Table-3. The results from the pooled OLS model indicate that the value of $R^2$ and adjusted $R^2$ are 0.5011 and 0.4671 respectively. The overall explanatory power of the regression model looks good with $R^2$ of 0.5011. The result implies that about 50.11% change in profitability (ROA) is explained by the variations in explanatory variables, denoting that the regression has good fit and is reliable. Likely, the overall explanatory power of the fixed effect regression model also looks good with $R^2$ of 0.5394. Moreover, the pooled OLS model and fixed effect model are found fairly fitted well statistically because in both models (Pooled OLS and fixed effect model), the p-value of F-statistics are significant at the 1% level of significance.

In order to test the autocorrelation, Durbin-Watson test has been used. In pooled OLS model, Durbin-Watson statistic = 1.9884 with its p-value = 0.7781, indicate the non-presence of autocorrelation problem. Likely, Durbin-Watson statistic = 2.1325 with its p-value = 0.6955 in fixed effect model also confirm the non-presence of autocorrelation in the regression model.

The empirical findings from three models (pooled OLS model, fixed effects model and random effects model) employed show that default risk is significantly positively

**Table-3**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS Model</th>
<th>Fixed Effect Model</th>
<th>Random Effect Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>Constant</td>
<td>13.0859</td>
<td>3.792</td>
<td>0.0005</td>
</tr>
<tr>
<td>DR</td>
<td>0.3006</td>
<td>2.813</td>
<td>0.0073</td>
</tr>
<tr>
<td>CAR</td>
<td>-0.9296</td>
<td>-3.078</td>
<td>0.0036</td>
</tr>
<tr>
<td>CLA</td>
<td>-10.6393</td>
<td>-0.957</td>
<td>0.3436</td>
</tr>
<tr>
<td>R²=0.5011, Adj.R² =0.4671, F = 14.7299, P-value(F) = 0.0000, Durbin-Watson statistic = 1.9884, P-value (DW) = 0.7781, Joint significance of differing group means: F(5, 39) = 0.6490, p-value = 0.6639</td>
<td>R²=0.5394, Adj.R² =0.4449, F = 5.7090, P-value(F)= 0.0001, Durbin-Watson = 2.1325, P-value(DW) = 0.6955</td>
<td>S.E. of regression = 1.9033, Breusch-Pagan test: Chi-square(1) = 0.5750, P-value = 0.4483, Hausman test: Chi-square(3) = 0.8681, P-value = 0.8331</td>
<td></td>
</tr>
</tbody>
</table>

***Significant at the 0.01 level (2-tailed) , ** Significant at the 0.05 level (2-tailed), * Significant at the 0.1 level (2-tailed). Results are drawn from Gretl-Statistical Software
associated with banks’ profitability. The result is contrary to priori expectation. This result also rejects the methodological juxtaposition of Kolapo et al (2012) where they opined that an increase in non-performing loan (default risk) would eventually lead to a decrease in profitability. However, the result is consistent with Kurawa and Garba (2014), Alshatti (2015), where they have found significant positive relationship between default risk and profitability.

Capital adequacy ratio is found significantly negatively associated to profitability in three models employed. The result is as per priori expectation and is similar to the findings of Poudel (2012), where the author found significant negative association between profitability and capital adequacy ratio. Cost per loan assets is found insignificant in explaining the profitability of commercial banks.

V. Conclusion
This study has examined the effect of credit risk on the profitability of commercial banks in Nepal. The descriptive and causal comparative research designs have been adopted for the study. The panel data of 6 commercial banks over the period of 8 years (2009 to 2016) have been collected from the annual reports of the banks in the sample. Panel regression models (pooled OLS model, fixed effect model and random effect model) have been used to assess the impact of credit risk on the profitability of commercial banks.

The estimated regression models reveal that default risk is significantly positively associated with banks’ profitability. However, capital adequacy ratio is found significantly negatively associated to profitability in three models employed. The cost per loan assets seems weak in explaining the variation of commercial banks’ profitability. Eventually, this study concludes that the commercial banks’ profitability in Nepal is mainly influenced by credit risk indicators like: default risk and capital adequacy ratio. The result in this study therefore, suggested the need for strong credit risk and loan service process management must be adopted to keep the level of NPL as low as possible which will enable to maintain the high profitability of commercial banks in Nepal.

References


