

**IMPACT OF CREDIT PERFORMANCE ON THE
PROFITABILITY OF COMMERCIAL BANKS IN
NEPAL**

A Thesis Proposal

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CHAPTER I

Introduction

1.1 Background of the study

Modern banking is an essential industry that operates within the periphery of national as well as the international financial system. Financial systems allow funds to be allocated, invested, or moved between economic sectors. The health of national as well as global economy largely depends on a highly regulated financial system. Banking as a vital section of such system, Rose (2002) mentioned that it is one of the most heavily regulated businesses in the world. Therefore, many authors use to argue that no institution has shaped the economic development of the world more than the bank.

Reviewing the financial literature it can be argued undoubtedly that commercial banks are among the most important financial institution in the economy. The general role of commercial banks is to provide financial services to general public, business, and companies, ensuring economic and social stability and sustainable growth of the economy. Therefore, bankers must have to work within the financial system to supply loans, accept deposits, and provide many other financial services to their customers. They must do so within a climate of extensive regulation, design primarily to protect the public interest (Rose, 2002).

The primary function of a commercial bank is the credit management. But management of credit is not an easy job. There are tremendous risks associated with credit. Such risk is very popular in the name of “Credit Risk” in the banking industry.

Gieseche (2004) stated that credit risk is a situation of unexpected changes in the credit quality of counterparty in a financial agreement. It is by far the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risk. It is a risk of financial loss if a borrower or counterparty fails to honor commitments under an agreement and any such failure has an adverse effect on the financial performance of the bank. A credit risk is the risk of default on a debt that may go up from a borrower refuse to make necessary payments. The risk is that of the bank and includes lost principal and interest, disruption to cash flows, and increased collection costs.

As mentioned in Investopedia.com, credit risk is the probable risk of loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Traditionally, it refers to the risk that a lender may not receive the owed principal and interest, which results in an interruption of cash flows and increased costs for collection. Although it is impossible to know exactly who will default on obligations, properly assessing and managing credit risk can lessen the severity of loss.

As mentioned in the publication of Basel Committee on Banking Supervision (2000), the goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between their sustainability, credit risk, and other risks. According to Basel Committee on Banking Supervision (2000), "Granting credit involves accepting risks as well as producing profits. Banks should assess the risk/reward relationship in any credit as well as the overall profitability of the account relationship."

1.2 Statement of the problem

Various researchers have examined the impact of credit risk on banks' return in varying dimensions with the sample from different country contexts. It is apparent that there are different measures of credit risk as well as banks' return or profitability. Accordingly, the use of variables in the available works addressing credit risk and banks' profitability is also not consistent. As a result, there is a lack of unanimity in findings. Therefore, this study is oriented toward solving the problem by answering what the impact of credit risk exposure on the rate of return of commercial banks, based on the contemporary data.

Some researchers found credit risk to impact positively on bank's performance, others found a negative relationship and others emphasized other factors instead of credit risks which impact on bank performance. As concluded by Kithinji (2010), the bulk of the profits of commercial banks are not influenced by the credit risk suggesting that additional variables other than the credit risk related variables impact on profits. Commercial banks that are keen on making high profits should concentrate on other factors other than focusing more on credit risk. On the other hand, based on the data from 2010 to 2015 of the selected sample commercial banks of Nepal, Bhattarai (2016) concluded that there is a significant relationship between bank performance and credit risk indicators. These are some of the examples of contrasting results that are available in the academia. Furthermore, there is no evidence of

study by taking contemporary data of Nepalese commercial banks. Accordingly, such a situation is actually the main reason of motivation for this study and source of the identification of the problem.

The aforesaid discussion shows that there are some gaps in the literature. Hence, this study focuses to fill a gap, examining the impact of credit risk and their impact on the return of commercial banks in Nepal. In this regard, following will be the specific research questions.

- I. What is the position of credit risk exposure in the commercial banks operating in Nepal?
- II. What is the existing status of profitability among the commercial banks of Nepal?
- III. Does credit performance really matter to the commercial banks' profitability?

1.3 Objectives of the study

The main objective of this study will be to investigate the impact of credit risk on the return of commercial banks in Nepal. Accordingly, the specific objectives will be as follows:

- I. To assess the credit risk exposure of the commercial banks operating in Nepal.
- II. To examine the status of profitability that commercial banks of Nepal are enjoying as a return.
- III. To analyze the impact of the credit-deposit ratio (CDR), non-performing loan (NPL), and capital adequacy ratio (CAR) on the profitability of the commercial banks of Nepal.

1.4 Significance of the study

Investigating the impact of credit risk management on the return of commercial banks operating in Nepal is the main purpose of this study. It is expected that this study will make a good contribution to the existing literature in the academia. Accordingly, it will help to extend the current literature. In addition, this study is about the subject of financial matters and related with the applied field of the banking industry. Therefore, the significance of the study can be expressed by the following points.

- Students are one of the important sections of the society. It is expected that this study report gives good insight to them, specifically to the students of business management and economics.
- Investors are good actors in the field of overall economy. They are much concerned with the risk and return of organizations. Therefore, this study can provide reliable information to them.
- There is a greater role of professionals in the banking industry. This study is closely associated with the part of their professional activities. Hence, this report can be expected as one of the bases for their decision making.

1.5 Organization of the study report

The fundamental purpose of the proposed study is to fulfill the partial requirements for the MBS Degree from Tribhuvan University. Therefore, the organization to the study report will be made accordingly. The first chapter will be the introduction of the study. It will contain background information, statement of the problem, objectives, significance, limitations, and organization of the study. The second chapter will be assigned for review of the literature. It will organize with the conceptual review, review of related studies, and concluding remarks to express the research gap. After the review of the literature, the subsequent chapter will be a methodological aspect. Therefore, the third chapter will be presented as a research methodology. It will contain research design, sampling process, data collection procedure, analysis techniques, model, explanation of variables, and methodological limitation will also express. The fourth chapter will be assigned to data presentation and analysis. As an important part of the research, this chapter will organize with different sections as per the study aspects. Specifically, it will contain variable based data, descriptive statistics, inferential statistics and their analysis. At the end of this chapter, findings and discussion will be made. The fifth and final chapter will be assigned for summary, conclusion, and recommendations. Bibliography and relevant annexes will be presented at the end.

CHAPTER II

Review of Literature

2.1 Conceptual review

As stated by Rose (2002) credit risk is the danger of default by borrower to whom a bank has extended credit. Bank capital and risk are intimately related each other. Therefore, the concepts of capital adequacy have been a subject of discussion among the academia as well as professionals since many years. The main sources of credit risk include limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, and directed lending, massive licensing of banks, poor credit assessment. Credit risk exposure means the total amount of credit extended to a borrower by a lender.

Basel Committee on Banking Supervision (2000) states that financial institutions have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to lax credit standards for borrowers and counterparties, poor portfolio risk management, or a 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.

The rational level of capital helps bankers and regulators to absorb any shocks that the bank may experience. Capital adequacy plays an important role in reducing the number of bank failures and losses to depositors. It plays a crucial role in reducing different risk components in the banking industry, and it is necessary to reduce moral hazard and competitiveness.

Relating to the banking industry, many publications have mentioned that bank capital represents the value of a bank's equity instruments that can absorb losses and have the lowest priority in payments if the bank liquidates. While bank capital can be defined as the difference between a bank's assets and liabilities, national authorities have their own definition of regulatory capital. The main banking regulatory framework consists of international standards enacted by the Basel Committee on Banking Supervision through international accords of Basel I, Basel II, and Basel III. These standards provide a definition of the regulatory bank capital that market and banking regulators closely monitor. As defined in Financial Times (<http://lexicon.ft.com/Term?term=capital-adequacy-ratio>), capital

adequacy ratio is a measure of the financial strength of a bank, expressed as a ratio of its capital to its assets.

As delineated in Your Dictionary (<http://www.yourdictionary.com/capital-adequacy>) capital adequacy ratio is a ratio that can indicate a bank's ability to maintain equity capital sufficient to pay depositors whenever they demand their money and still have enough funds to increase the bank's assets through additional lending. Banks list their capital adequacy ratios in their financial reports. It is stated in terms of equity capital as a percent of assets. Capital requirements imposed by regulators tend to be simple mechanical rules rather than applications of sophisticated risk models.

As stated in publications of NRB, prior to 1988, there was no uniform international regulatory standard for setting bank capital requirements. In 1988, the Basel Committee on Banking Supervision (BCBS) developed the Capital Accord, which is known as Basel I, to align the capital adequacy requirements applicable especially to banks in G-10 countries. Basel I introduced two key concepts. First, it defined what banks could hold as capital, as well as designates capital as Tier 1 or Tier 2 according to its loss-absorbing or creditor-protecting characteristics. The second key concept introduced in Basel I was that capital should be held by banks in relation to the risks that they face.

2.2 Review of related studies

There are plenty of studies available about the effect of different variables on the financial performance of commercial banks. Tarbert (2001) had discussed in wider perspective about capital adequacy and Basel Capital Accord and stated that adequate capital is a necessary condition for solvent banks and solvent banks are fundamental to the world economy. Adequate bank capital is thus essential for a sound economy. Bank capital is a vital component of economic stability; it has become a subject of concern for financial regulatory bodies around the world.

There are many evidences of study about impact of different credit performance on the financial performance of commercial banks in different country perspectives. Different studies found mainly that capital adequacy contributes positively to the profitability of commercial banks and therefore it is paramount for banks to have a sound capital base in order to remain competitive and maintain the confidence of its customers.

Using the ROA and the ROE as proxies for bank profitability for the period of 1998 to 2007 from Kenyan banks, Mathuva (2009) revealed that bank profitability is positively related to the core capital ratio and the tier 1 risk-based capital ratio. This implies that an increase in capital may raise expected earnings by reducing the expected costs of financial distress, including bankruptcy. While on the other hand, the study also found that there exist a negative relationship between the equity capital ratio and profitability. Therefore, the most important finding of Mathuva (2009) was that there are different effects of the various measures of capital adequacy on the profitability of the bank.

Bhattarai (2016) has examined the effect of credit risk on the performance of Nepalese Commercial Banks using pooled data of 14 commercial banks for the period of 2010 to 2015. The author found that non-performing loan ratio has a negative effect on bank performance whereas cost per assets has a positive effect on bank performance. Moreover, the author concluded that there is a significant relationship between bank performance and credit risk indicators.

Pradhan and Shrestha (2017) examined the impact of capital adequacy and bank operating efficiency on the financial performance of Nepalese commercial banks using data from the period of 2005/06 to 2012/13. The result showed that total deposits to total asset and banks operating efficiency are the major variables determinant of financial performance of commercial banks in Nepal. Similarly, bank operating efficiency, loan ratio, total deposit to total assets, loan loss provision to total equity have a significantly positive impact on financial performance of commercial banks. Loan loss provisions to total loan, core capital ratio, risk-weighted ratio, total capital ratio have negative impact on financial performance of Nepalese commercial banks.

In the study about the effect of capital adequacy and cost income ratio on the performance of Nepalese commercial banks by Pradhan and Parajuli (2017) found evidence for a positive relationship of bank size with ROA; by using total assets as a proxy for the size of the bank. It means, larger the banks, higher would be the ROA. Similarly, the study revealed that there is a positive relationship of debt to equity ratio with ROA. This means that higher the debt-equity ratio, higher would be the ROA. On the other hand, the study observed that there is a negative relationship of capital adequacy, cost income ratio, equity capital to total assets ratio and liquidity ratio with ROA. This means that higher the capital adequacy lower would be ROA. Similarly, the study observed that higher the equity capital to total assets, lower would

be the ROA. The result also showed that there is a positive relationship of capital adequacy, equity capital to total assets, bank size and debt to equity ratio with ROE. This means that higher the capital adequacy, higher would be ROE. The study also indicated that higher the equity capital to assets, higher would be return on equity. Similarly, the study observed that larger the bank, higher would be the ROE. These study results were based on the secondary data of 20 commercial banks with 120 observations for the period of 2009/10 to 2014/15.

2.3 Concluding remarks

The aforesaid review represents only a preliminary survey of the relevant issue. On the basis of review, it can be concluded that still there are some unsolved research issues on the proposed subject. The purpose of this study is to see what new contribution can be made and receive some ideas, knowledge, and suggestions in relation to the impact of credit risk exposure and management practices on the performance of commercial banks. However, the previous studies cannot be ignored because they provide the foundation for the present study. This study is continuity in research and is ensured by linking the present study with the past research studies.

It is clear that there is a scant of study based on recent data. As many researchers emphasized the effects of credit risk in own country context or with other variables. Hence, there exists research gap. The research gap will be minimized by emphasizing the effects of credit risk exposure on the profitability of commercial banks in Nepal with the profitability variables, ROA and EPS.

CHAPTER III

Research Methodology

Research methodology is a way to solve the research problem systematically and to fulfill the research objectives accordingly. This study plans the following methodological aspects.

3.1 Research Design

A research design is the logical and systematic planning that specifies the procedures for collecting and analyzing data and information. To attain the specified purpose of this study, descriptive research design will be considered an appropriate one. On the other hand, causal-comparative research method has also been followed. Because this study is intended to describe the phenomenon related to credit risk management and its effect on the return of commercial banks operating in Nepal. Accordingly, the overall study plan will be based on the quantitative approach of research.

3.2 Nature and Sources of Data

To fulfill the research objectives, most of the data will be collected from the secondary sources. The required data, as demanded by the study, will be collected through the published annual reports of the sample banks. On the other hand, some supporting information has been collected from the website of Nepal Rastra Bank and other official websites. The negligible information has been acquired from the primary sources.

3.3 Population and Sample

This study is based on the data of commercial banks in Nepal. Therefore, a total number of commercial banks is obviously the size of the population. As per the recent publication of Nepal Rastra Bank (NRB), there are 28 commercial banks operating in Nepal. This figure is based on the data after merger and acquisition process of the bank and financial institutions (BFIs) as per Financial Institutions Merger and Acquisition Regulation-2073. Hence, the population of the study is considered as 28 in number. Since the finite and mentionable size of the population, it is displayed in Table 3.1.

Table 3.1

A list of commercial banks which have been licensed from Nepal Rastra Bank

| S. No. | Name |
|--------|-------------------------------------|
| 1 | Nepal Bank Ltd. |
| 2 | Rastriya Banijya Bank Ltd |
| 3 | Agriculture Development Bank Ltd. |
| 4 | Nabil Bank Ltd. |
| 5 | Nepal Investment Bank Ltd. |
| 6 | Standard Chartered Bank Nepal Ltd. |
| 7 | Himalayan Bank Ltd. |
| 8 | Nepal SBI Bank Ltd. |
| 9 | Nepal Bangladesh Bank Ltd. |
| 10 | Everest Bank Ltd. |
| 11 | Kumari Bank Ltd. |
| 12 | Laxmi Bank Ltd. |
| 13 | Citizens Bank International Ltd. |
| 14 | Prime Commercial Bank Ltd. |
| 15 | Sunrise Bank Ltd. |
| 16 | Mega Bank Nepal Ltd. |
| 17 | Century Commercial Bank Ltd. |
| 18 | Sanima Bank Ltd. |
| 19 | Machhapuchhre Bank Ltd. |
| 20 | NIC Asia Bank Ltd. |
| 21 | Global IME Bank Ltd. |
| 22 | NMB Bank Ltd. |
| 23 | Prabhu Bank Ltd. |
| 24 | Siddhartha Bank Ltd. |
| 25 | Bank of Kathmandu Lumbini Ltd. |
| 26 | Civil Bank Ltd. |
| 27 | Nepal Credit and Commerce Bank Ltd. |
| 28 | Janata Bank Nepal Ltd. |

Note. The serial number is prioritized on the basis of operation date.

Source: https://nrb.org.np/bfr/pdffiles/List_of_BFIs_April2017_English.pdf

Based on the non-probability sampling method, the sample will be drawn from the population. From the aforesaid population, 10 commercial banks' recent 5 years data will be considered for the study.

3.4 Sampling Method

The sampling method is the way the sample units are selected. So far the sampling method applied in this study is concerned; it has followed the non-probability sampling method. Accordingly, purposive sampling design has been used for the study. Specifically, the study will follow the judgmental sampling technique.

3.5 Data Collection Procedure

Data will be 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 estimated the effect of credit risk on the return of commercial banks using pooled data regression. The 5 years data (fiscal year 2069/2070 to 2073/2074) of sample banks will be considered as the sample years to analyze the data.

3.6 Data Analysis Tools

This study is quantitative in nature and analysis all the way through will be based on the historical data. Therefore, tools of the study are selected accordingly as demanded by the purpose of the study and data nature. For the analysis of data different financial ratios will be analyzed by means of descriptive statistics as well as inferential statistics.

Under the descriptive statistics, the central tendency has been measured through arithmetic mean. To measure the consistency, standard deviation and coefficient of variation will be used. Similarly, to observe the data nature in terms of normality, skewness and kurtosis will be considered. To analyze the phenomena, statistical graphics will also used as per the data nature.

Similarly, to draw the statistical inferences multiple regressions will be applied. It is because; this study intends to draw the inferences about the effects of credit risk on the return of the foreign joint venture commercial banks in Nepal. In addition, correlation coefficients between the variables will also examine through the correlation matrix.

In this study, all the statistical parameters is planned to compute with the help of computer via Microsoft Excel, the data analysis tool pack.

3.7 Models and Variables

3.7.1 Models

Basically, the variables under study are profitability and the Credit Performance (CP). As a proxy of profitability, Return on Assets (ROA) and Earning per Share (EPS) will be considered. These are considered as dependent variables. On the other hand, as independent variables, Credit Deposit Ratio (CDR), Non Performing Loan (NPL), and Capital Adequacy

Ratio (CAR) are considered. These are the variables representing the credit performance. The study is oriented toward analyzing the effect of these independent variables on the profitability. Therefore, the basic relationship functions are expressed as follows:

$$\text{EPS} = f(\text{CP})$$

$$\text{ROA} = f(\text{CP})$$

The regression equation to be estimated has therefore been specified 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. Adapting this basic model, following models are estimated.

$$\text{EPS}_{it} = \beta_0 + \beta_1 \text{CDR}_{it} + \beta_2 \text{NPL}_{it} + \beta_3 \text{CAR}_{it} + \varepsilon_{it}$$

$$\text{ROA}_{it} = \beta_0 + \beta_1 \text{CDR}_{it} + \beta_2 \text{NPL}_{it} + \beta_3 \text{CAR}_{it} + \varepsilon_{it}$$

Where,

EPS_{it} represents earning per share of bank i in year t ;

ROA_{it} represents Return on assets of bank i in year t ;

CDR_{it} represents credit deposit ratio of bank i in year t ;

NPL_{it} represents non performing loan of bank i in year t ;

CAR_{it} represents capital adequacy ratio of bank i in year t ;

β_0 is the Intercept (constant); β_1 , β_2 , and β_3 represent the corresponding slope which addresses the impact coefficients.

3.7.2 Variables under study

Dependent Variables

The important aspect of the study is to analyze an impact of credit risk on the return or profitability. Therefore, dependent variables are the proxies of profitability. Among the different aspects of profitability, as proxies of profitability, Earning per share and Return on asset will be considered.

Earnings Per Share (EPS): Earning per share (EPS) is the portion of a company's profit that is allocated to each outstanding share of common stock, serving as an indicator of the company's financial health. In other words, earning per share is the portion of company's net income that would be earned per share if all the profits were paid out to its shareholders. The financial model of the bank's EPS can be expressed as under:

$$\text{The bank's EPS} = \frac{\text{Net income} - \text{Dividends on preferred stock}}{\text{Average outstanding common shares}}$$

Return on Assets (ROA): Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Thus, ROA is primarily an indicator of managerial efficiency. The financial model of the bank's NPM can be expressed as under:

$$\text{The bank's ROA} = \frac{\text{After tax net income}}{\text{Total assets}}$$

Independent Variables

To analyze an impact of credit risk on the return or profitability, as independent variables, Credit Deposit Ratio (CDR), Non Performing Loan (NPL), and Capital Adequacy Ratio (CAR) have been considered as proxies for credit risk.

Credit Deposit Ratio (CDR): It is also known as the loan-to-deposit ratio. It is used to assess a bank's credit risk as well as liquidity by comparing a bank's total loans to its total deposits for the same period. The financial model of the bank's NPM can be expressed as under:

$$\text{The bank's CDR} = \frac{\text{Total loan and advances}}{\text{Total deposits}}$$

Non Performing Loan (NPL): A nonperforming loan (NPL) is a sum of borrowed money upon which the debtor has not made the scheduled payments for a period of time of usually at least 90 days for commercial banking loans and 180 days for consumer loans. Nonpayment means there has been zero interest or principal payments made on the loan within a specified period of time (90 to 180 days depending on industry and loan type). Any definition of a nonperforming loan will depend on the loan's particular terms and agreement. The financial model of the bank's NPM can be expressed as under:

Capital Adequacy Ratio (CAR): Capital adequacy ratios are a measure of the amount of a bank's capital expressed as a percentage of its risk weighted credit exposures. In other words, it is the ratio of a bank's capital in relation to its risk weighted assets and current liabilities. The financial model of the bank's CAR can be expressed as under:

$$\text{The bank's CAR} = \frac{\text{Tire 1 capital} + \text{Tire 2 capital}}{\text{Risk weighted assets}}$$

Based on the aforesaid models and variables, this study will be based on the following schematic diagrams:

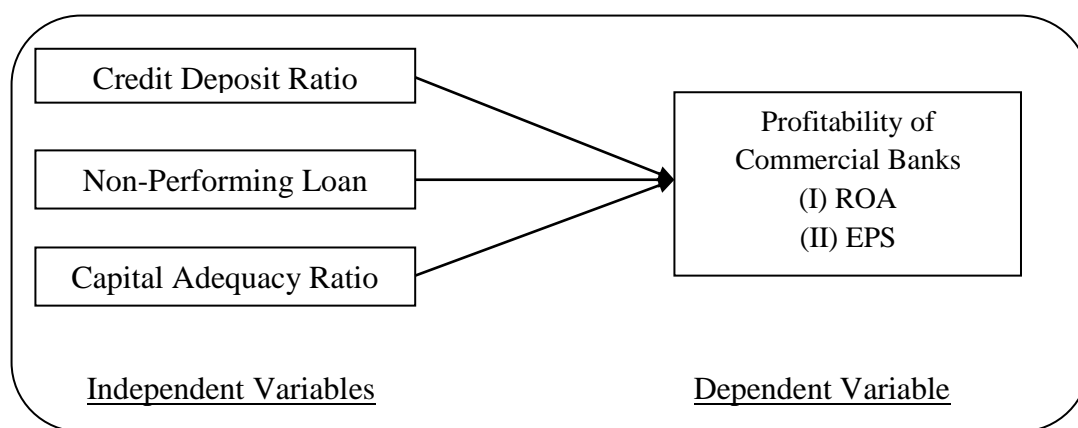


Figure 3.1. Schematic diagram of the theoretical framework.

The schematic diagram as presented in Figure 3.1 is based on the preliminary survey of literature on the subject. Accordingly, this study will be oriented toward testing the hypothesis as mentioned below:

H1: Credit deposit ratio has a significant and positive effect on profitability of commercial banks.

H2: Non-performing loan ratio has a significant and negative effect on profitability of commercial banks.

H1: Capital adequacy ratio has a significant and positive effect on profitability of commercial banks.

Bibliography

- Bhattacharai, Y. R. (2016). Effect of Credit Risk on the Performance of Nepalese Commercial Banks. *NRB Economic Review*, 28(1), 42-64.
- Capital adequacy ratio (n.d.). In *lexicon.com*. Retrieved from <http://lexicon.ft.com/Term?term=capital-adequacy-ratio>
- Capital adequacy. (2010). In *yourdictionary.com*. Retrieved from <http://www.yourdictionary.com/capital-adequacy>
- Coyle, B. (2000). *Framework for Credit Risk Management*, United Kingdom: Chartered Institute of Bankers. Retrieved from <http://www.sciencedirect.com/reference/102421>
- Credit risk. (n. d.). Retrieved from <https://www.investopedia.com/terms/c/creditrisk.asp>
- Golin, J. (2001). *The Bank Credit Analysis Hand Book*. Singapore: John Wiley & Sons (Asia) Pte. Limited
- Isanzu, J. S. (2017). The impact of credit risk on the financial performance of Chinese banks. *Journal of International Business Research and Marketing*, 2(3), 14-17.
- Kinthinji, A. M. (2010). *Credit risk management and profitability of commercial banks in Kenya*. Nairobi: Acts Press. Retrieved from <http://erepository.uonbi.ac.ke/bitstream/handle/11295/40437/aibuma2011submission232.pdf?sequence=1&isAllowed=y>
- Mathuva, D. M. (2009). Capital adequacy, cost income ratio and the performance of commercial banks: The Kenyan scenario. *The International Journal of Applied Economics and Finance*, 3(2), 35-47.
- Mendoza, R. & Rivera J. P. R. (2017). The effect of credit risk and capital adequacy on the profitability of rural banks in the Philippines. *Scientific Annals of Economics and Business*, 64(1), (83-96).
- Nepal Rastra Bank. (2007). *Capital Adequacy Framework*. Retrieved from https://www.nrb.org.np/bfr/circular/2064-65/2064_65--Circular_07-attachment.pdf
- Nepal Rastra Bank. (2013). *A Study on Basel III and Nepalese Banking: An Assessment of Capital Regulation in Nepal*. Retrieved from [https://www.nrb.org.np/bfr/circular/2070-71/2070_71_\(Notice\)--02%20Attachment-%20Basel%20III%20and%20Nepalese%20Banking%20Regulations.pdf](https://www.nrb.org.np/bfr/circular/2070-71/2070_71_(Notice)--02%20Attachment-%20Basel%20III%20and%20Nepalese%20Banking%20Regulations.pdf)
- Olalekan, A., & Adeyinka, S. (2013). Capital adequacy and bank's profitability: An empirical evidence from Nigeria. *American International Journal of Contemporary Research*, 3(10), 87-93.
- Pradhan, R. S. & Parajuli, P. (2017). Impact of capital adequacy and cost income ratio on performance of Nepalese commercial banks. *International Journal of Management Research*, 8 (1), 6-18.
- Pradhan, R. S. & Shrestha D. (2017, September 29). Re: Impact of liquidity on bank profitability in Nepalese commercial banks. Retrieved from <https://ssrn.com/abstract=3044041>
- Rose, P. S. (2002). *Commercial Bank Management*. New York: McGraw-Hill / Irwin Publishing.
- Tarbert, H. P. (2001). Rethinking capital adequacy: The Basle accord and the new framework. *The Business Lawyer*, 56(2), 767-836.
- Weston, J. F., & Copeland, T. E. (1990). *Managerial Finance*. Texas: The Dryden Press.