CREDIT RISK MANAGEMENT OF COMMERCIAL BANKS IN NEPAL

A Dissertation submitted to the Office of the Dean, Faculty of Management, in partial fulfillment of the requirements for the Degree of Masters of Business Studies

by

Mandira Khadka

Symbol No.: 2710010

T.U. Registration No.: 7-3-271-357-2015

People's Campus

Kathmandu

April, 2021

12-04-2021

Approval Sheet

We have examined the dissertation entitled “Credit Risk Management of Commercial in Banks” presented by Mrs. Mandira Khadka for the degree of Masters of Business Studies**.** We hereby certify that the dissertation is acceptable for the award of degree.

……

Dissertation Supervisor

……..

Internal Examiner

……

External Examiner

……

Chairperson Research Committee

Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “Credit Risk Management of Commercial Banks in Nepal”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

……

Mandira Khadka

12-04-2021

Report of Research Committee

Ms. Mandira Khadka has defended research proposal entitled “Credit Risk Management of Commercial Banks in Nepal” successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out thework as per and submit the thesis for evaluation.

……..

Bikash Shrestha

Supervisor

……..

Gopal Krishna Shrestha

Head of Research Committee

……..

Chhatra Mangal Bajracharya

Campus Chief

Acknowledgements

This study entitled “Credit Risk Management of Commercial Banks in Nepal” has been prepared for partial fulfillment of requirements for the degree of Masters of Business Studies. This would not have been possible without the kind support and help of many individuals. Therefore, I would like to acknowledge with gratitude to all of them. It is a genuine pleasure to express my deep sense of thanks and gratitude towards Bikash Shrestha and Rajan Bilash Bajrachaya for giving me the responsibility to prepare this report along with their guidance, valuable advice, continuous encouragement, and motivational support.

During this course, I worked with sincerely, honesty and with diligence as far as possible. Besides my continuous efforts, I also got unforgettable cooperation from different people and parties. I greatly thank my parents for their endless love. With this help and support, I have been able to complete this work. I would like to take the responsibility of any possible mistakes that may have occurred in the report. I would be delighted to welcome readers for their suggestion and recommendation to improve the report.

Thanking you.

Mandira Khadka

April, 2021

Abstract

Credit risk management is crucial and it is instrumental in ensuring the success or failure of any credit institution. The main concern of the banks is credit risk and its management as credit or loans and advances are the main source of income for them. This study therefore aims to examine the impact of credit risk management on profitability of banks in Nepal. Secondary data was gathered from commercial banks of Nepal for ten year periods (2010/11-2019/20).This study used multiple regression analysis. The finding shows that all the sample banks have managed loans as well as the nonperforming loans. The correlation analysis shows that loan and advance (LA) has significant relation with non-performing loan (NPL) in 1 percent level of significance with correlation coefficients 0.466 which means that there is moderate degree of positive correlation between loan and advance and non-performing loan. At the same time, loan and advance (LA) has significant relation with loan loss provision (LLP) and net profit (NP) in 1 percent level of significance. However, there is insignificant positive correlation between non-performing loan and net profit. Moreover, the result found that there is significant impact of loan and advance, non-performing loan and loan loss provision on profitability of sample banks.This study recommends that Nepalese commercial banks should work in collaboration with credit reference bureau in the country to thoroughly investigate the past credit worthiness records of loan applicants so as to reduce the rate of default.

Key words: Credit efficiency, profitability, loan & advance, non-performing loan, loan loss provision.

Table of Contents

List of Tables

List of Figures

ABBREVIATIONS

ATM	:	Automated Teller Machine
BS	:	BikramSambat
CB	:	Commercial Banks
CRR	:	Compulsory Reserve Ratio
EBL	:	Everest Bank Limited
EPS	:	Earning Per Share
GDP	:	Gross Domestic Products
II	:	Interest Income
IT	:	Information Technology
JVBs	:	Joint Venture Banks
L & A	:	Loan and Advance
LLP	:	Loan Loss Provision
Ltd.	:	Limited
NABIL	:	Nabil Bank Limited
NIBL	:	NepalInvestment Bank Limited
NPL	:	Non – Performing Loan
NRB	:	Nepal Rastra Bank
SD	:	Standard Deviation
TA	:	Total Assets
TU	:	Tribhuvan University

CHAPTER I

INTRODUCTION

1.1 Background of the study

Credit or default risk is the risk that the promised cash flows from loans and securities held by financial institutions may not be paid in full. Should a borrower default, both the principal loaned and the interest payments expected are at risk. The potential loss a financial institution can experience suggests that financial institutions need to collect information about borrowers whose assets are in their portfolios and to monitor those borrowers overtime. Credit risk is the uncertainty associated with borrower's loan repayments. In general when borrowers' asset values exceed their indebtedness they repay loans but when borrowers' assets values are less than loan values, they do not repay and they could therefore exercise their option to default (Sinkey, 2002).

Credit risk 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. Increases in credit risk will raise the marginal cost of debt and equity, which in turn increases the cost of funds for the bank (Shrestha, 2004).

There is no clear definition of what credit management is. It is usually regarded as assuring that buyers pay on time, credit costs are kept low, and poor debts are managed in such a manner that payment is received without damaging the relationship with that buyer. A trade credit insurance company does all that. Either directly or in conjunction with a company's credit department. An approved credit management policy can offer assurances to a financing bank, which may facilitate financing.

A function performed within a company to improve and control creditpolicies that will lead to increased revenues and lower risk including increasing collections, reducing credit costs, extending more credit to creditworthy customers, and developing competitive credit terms. It also called credit control. Policies should be periodically reviewed and revised to accommodate changes in the bank's strategic direction, risk tolerance, or market conditions. Policy review should consider the organizational structure, breadth and complexity of lending activities, capabilities

andskills of lending personnel, and strategic portfolio quality and earnings objectives. All policy reviews should include the organizational unit responsible for assessing compliance with policy.

Credit risk management is very important area for the banking sector and there are wide prospects of growth. Banks and other financial institutions are often faced with risks that are mostly of financial in nature. Management of risk has been very important component of business plan for the banks and an undercurrent of risk mitigation and planning has always been part of the banking business.Risk management plays a vital role in a bank's credit management. Banking professionals have to maintain the balance between the risks and the returns. For a large customer base banks need to have a variety of loan products that are reasonable enough. If the interest rates in loan products are too low, the bank will suffer from losses (Horcher, 2005).

Credit risk management is one of the major and most challenging functions of the Commercial Bank. This is because they receive customer's deposits and are under obligation to pay them on demand. No consumer will accept excuses that his money account is paid on demand on the ground that it has been borrowed out on loan to another customer. So, there is the need for proper management of loan by the Commercial Banks. Credit risk management is crucial and it is instrumental in ensuring the success or failure of any credit institution. The key to successful lending for business is a systematic loan analysis, which deals with the process of investing those factors that give rise to non-payment of debts. The efficiency of loan decision shall be all standards depend upon sound judgments of the officer or manager.

Effective credit risk management is the process of managing an institution's activities whichcreate credit risk exposures, in a manner that significantly reduces the likelihood that suchactivities will impact negatively on a bank's earnings and capital. Credit risk is not confined to a bank's loan portfolio, but can also exist in its otherassets and activities. Likewise, such risk can exist in both a bank's on-balance sheet and itsoff-balance sheet accounts (Bessis, 2003).

1.2 Introduction of sample banks

1.2.1 Everest Bank Limited (EBL)

Everest Bank Limited was registered on November 17, 1992, come into operation on October 18, 1994 with an objective of extending professionalized, and efficient banking services to various segments of the society. Today the bank has grown to become one of the leading banks in Nepal.

Panjab National Bank (PNB) joined hands with EBL as a Joint Venture in 1997 and turned it around to a highly profitable bank. There has been no looking back since then. PNB provides top management support under the Technical Service Agreement. PNB joint venture partner of EBL one of the largest nationalized bank in India having 114 years of banking history, holds 20 percent equity. The ownership pattern is 49.11 percent from local customer, 30.86 percent from public shareholder and remaining 20.03 percent from Punjab National Bank, India.

The objective of the bank is growth through banking for all. Everest Bank has recognized the value of offerings a complete range of services and has pioneered in extending various customer friendly products such as home loan, education loan, EBL flexi loan, EBL property plus (future lease rental), Home equity loan, vehicles loan, Loan against share, loan against life insurance policy and loan for professional. The bank is providing customer friendly services. The bank also offers debit card, credit card, ATM services, deposit participants services, inward and outward service as well as indo remit, locker facility and E-services etc. Everest Bank Limited was the first bank to introduce Any Branch Banking System (ABBS) in Nepal. All the branches of the bank are connected with ABBS which enables the customers to do all their transactions from any branches other than where they have their account (Everest Bank Ltd., 2019/20).

1.2.2 Nepal Investment Bank Ltd. (NIBL)

Nepal Investment Bank Ltd. (NIBL), previously, Nepal Indosuez Bank Limited, was established in 21 January 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50 percent of the capital of NIBL) was credit Agricole Indosuez, a subsidiary of one of the largest banking groups in the world.

Later, in 2002 a group of Nepalese companies comprising of bankers, professionals, industrialists and businessmen acquired the 50 percent shareholding of Credit

Agricole Indosuez in Nepal Indosuez Bank Ltd., and accordingly the name of the Bank also changed to Nepal Investment Bank Ltd. At present the bank's shareholdingpattern is 69 percent from promoters and remaining 31 percent from general public. As regards capital, the bank has Rs.15000 million authorized capital and paid up capital is Rs.10645 million. The bank's shares are publicly traded as an 'A' category company in the Nepal Stock Exchange.

The vision or mission of the bank is to be the most preferred provider of Financial Services in Nepal. Then, talking about strategic objectives, the bank has own objectives such as to develop a customer oriented service culture with special emphasis on customer care and convenience, to increase our market share by following a disciplined growth strategy, to leverage our technology platform and pen scalable systems to achieve cost-effective operations, efficient MIS, improved delivery capability and high service standards, to develop innovative products and services that attracts our targeted customers and market segments and to continue to develop products and services that reduce our cost of funds, to maintain a high quality assets portfolio to achieve strong and sustainable returns and to continuously build shareholders' value and finally, to explore new avenues for growth and profitability. The bank also offers debit card, credit card, ATM services, internet banking, lockers facility, travel card share application, enterprises e-banking, foreign exchange rate, letter of credit etc.(Nepal Investment Bank Ltd., 2019/20).

1.2.3 Nabil Bank Limited (NABIL)

Nabil Bank Limited, the first foreign joint venture bank of Nepal, started operations in July 1984 under the company act 1964. The initial foreign partner handed its share to Emirates Bank Limited and now its shares are transferred to National Bank Limited in January 1, 2002. The bank was renamed as Nabil Bank Limited; previously it was named Nepal Arab Bank Limited. Out of total share, National Bank Limited (Bangladesh) holds 50 percent share and remaining 30 percent by general public and 20 percent by financial institution.

At Nabil, our Vision is to be a bank for all across all geopolitical zones and socioeconomic strata of the nation that can provide myriads of financial solutions and create values for all our stakeholders, to stand in the community with our economic and civic roles. We look forward to emerging as a first rate bank across all strata of

the nation. NABIL was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, NABIL provides a full range of commercial banking services. NABIL, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. Operations of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System, Bangalore, India, Internet banking system and Tele banking system. The bank also offers, travel card, Nabil installment, Nabil phone loan, Nabil viber banking, electronic payment, Nabil remit, western union, etc. (Nabil Bank Ltd., 2019/20).

1.3 Problemstatement

Credit plays an important role in the lives of many people and in almost all industries that involve monetary investment in some form. Loan and advances, the major credit parts of banks, are mainly granted by private commercial banks including to several other functions like deposit mobilizations, local transfers, international transfers, foreign currency exchange services. Hence, the issue of credit management has a thoughtful implication both at the micro and macro level (Abayomi, Joseph &Tolulope, 2018).

Weak credit risk management is the primary cause of many commercial banks' failures. Pradhan and Shah (2019) carried out study and found out that the consistent element in the failures was the inadequacy of the bank's credit risk management system in the controlling of loan quality.

Saundeers (2005) indicated that the very nature of the banking business is so sensitive because more than 85% of their liability is deposits from depositors. Banks use these deposits to generate credit for their borrowers, which in fact are a revenue generating activity for most banks (Saundeers, 2005). This credit creation process exposes the banks to high default risk which might led to financial distress including bankruptcy. All the same, beside other services, banks must create credit for their clients to make

some money, grow and survive stiff competition at the market place (Saundeers, 2005).

The study made by Ifeanyi and Francis (2017) focuses on credit risk management and its impact on performance on commercial banks. The study found that a significant relationship between bank performance and credit risk management. Besides, better credit risk management results in better bank performance. However, the study examined only the extent at which credit risk affected by profitability of banks and only used private commercial banks.

Credit evaluation decisions are important for the financial institutions involved due to the high level of risk associated with wrong decision. The process of making credit evaluation decision is complex and unstructured. This complex and unstructured decision making process of credit evaluation needs proper credit management by the concerned banks (Singh, 2013).

Eva and Jaroslav (2014) stated that adequately, managing credit in financial institutions (FIs) is critical for the survival and growth of the FIs. In the case of banks, the issue of credit management is of even greater concern because of the higher levels of perceived risks resulting from some of the characteristics of clients, business conditions and economic environment in which they find themselves.

Credit management policy is a comprehensive process that deals with identifying the target markets, credit extension; credit monitoring and identifying the proceeds. Credit management policy entails the mechanisms, standards and parameters that guide the bank officers in granting loans and managing the loan portfolio under the banking discipline. It is a set of guidelines designed to maximize cost associated with credit while maximizing benefits from it (Ejoh, Okpa&Inyang, 2014). Han (2016) further added that credit management policy assist financial institutions' credit department in the extension of credit privileges governed by rules and guidelines established by top management.

The major statements to be analyzed in this study will definitely be the credit management adopted by Nepalese commercial banks. For the statement of the problem, the following research questions have been raised:

1. What is the credit efficiency and profitability position of NABIL, NIBL and EBL?

2. What is the relationship among loan and advances, non-performing loan, loan loss provision and net profit of sample banks?
3. What is the impact of loan and advances, non-performing loan, loan loss provisionon net profit of sample banks?

1.4 Objectives of the study

The main objective of the study is to evaluate the credit risk management of commercial banks of Nepal. In order to achieve the basic objective, the following are the additional objectives to determine the main objectives.

1. To analyze the credit efficiency and profitability position of NABIL, NIBL and EBL.
2. To examine the relationship among loan and advances, non-performing loan, loan loss provision and net profit of sample banks.
3. To analyze the impact of loan and advances, non-performing loan, loan loss provision on net profit of sample banks.

1.5 Research hypothesis

The researcher expected with better credit management with net profit and lower non-performing loan (NPL).With the help of data the study was established and tested the following hypothesis:

H_{01}: Loan & advance has no effect on net profit of the bank.

H_{02}: There is no significant relationship between loan and advance and non-performing loan and loan loss provision.

H_{03}: Loan loss provision has no effect on net profit of the bank.

H_{04}: There is no significant relationship between loan and advance and loan loss provision.

H_{05}: Non-performing loan has no effect on net profit of the bank.

H_{06}: There is no significant relationship between non-performing loan and loan loss provision.

1.6Rationale of the study

Credit is the major sources of income in any commercial bank. There is no doubt that the profit earned by any bank depends on the volume of the good lending. Study on commercial bank's lending practice carry a great significance to shareholders, professionals, bankers themselves and the student eager to know about credit practices

and their management. This study is based on measuring the efficiency of Nepal Investment Bank Ltd., Nabil Bank Ltd. and Everest Bank Ltd.in the practices of credit.

The study will be mainly beneficial to the shareholders, depositors and other creditors to identify the productivity of their funds in the Nepal Investment Bank Ltd., Nabil Bank Ltd. and Everest Bank Ltd.Likewise, other financial agencies, e.g. financial experts are also interested in the performance of banks. Besides them, the study will also help the management of the bank to analyze the effectiveness of its loan management and policies of the bank in comparison to competitors. The study will also be equally significant to the central bank to formulate the new credit policy, as there are certain loopholes as a result of which the non-performing assets has been regarded as the main problem of the commercial banks in these days.

1.7 Limitations of the study

The limitations of this study are listed below:

1. The study is limited to only three commercial banks of Nepal, Nepal Investment Bank Ltd., Nabil Bank Ltd. and Everest Bank Ltd.
2. The study based on only the past ten years data from F/Y 2010/11 to F/Y 2019/20.
3. The study mainly focuses on the factors relating to credit risk management.
4. The study is based on secondary data such as annual report, financial statement etc.

1.8Chapter plan

The study is divided into five different chapters. First chapter includes background of the study, introduction of sample banks, problemstatement, objectives of the study, rationale of the study, limitations of the study and chapter plan. This chapter presents conceptual review, empirical review like books, dissertation, articles, journals, report and magazines etc. Research gap also incorporates in this chapter. The third chapter deals with research methodology to be adopted for the study to satisfy the objectives of the study. It consists of theoretical framework, research design, sample and population, sources and types of data, data procedure and methods of data analysis. The fourth chapter is most important and plays vital role in this study. This chapter deals with results and discussion, the data as required by the objectives stated in this study. These collected data have been analyzed and interpreted by the help of various

statistical and financial tools and techniques. It also includes discussion of the findings of the study. Finally, in the fifth chapter whole study was summarized. Conclusion of the whole study and supply of valuable implication for the improvement were done. At the end of the study, references and appendices have also been incorporated.

CHAPTER II

LITERATUREREVIEW

Literature review is a stocktaking of available literature in one's field of research. Review of literature is an important part of any research work. It provides the boundary line for any research. Previous studies provide the foundation for present study. So, previous studies cannot be ignored. There must be continuity in research.

This continuity in research is insured by linking the present study with past research studies. From this, it is clear that the purpose of literature review is to find out what research studies have been conducted in one's chosen field of study and what remains to be done. The review of literature is a crucial aspect because it denotes planning of the study. The main purpose of literature review is to find out what works have been done in the area of the research problem under stuffy and being undertaken. For review study, the researcher uses different books, reports, journals and research studies published by various institutions, unpublished dissertations submitted by master level students have been reviewed (Pant, 2016).

The major function of commercial banks is to collect deposits or funds and disburse it to investors as credit. This credit is main sources of income. Credit dominates the assets side of balance sheet of any bank. Same way earning from loans and advances occupy a major portion of the income statement of the banks. This asset generates income to the bank. So, it also determines profitability of banks. Loan and advances granted to customers earns interest. This interest is major source of income of banks. Loan is granted as overdraft cash credits and direct loans. Banks grant loan on the base of collateral underlying the loan. Banks make careful assessment before granting loans to investors or business enterprises.

Credit is the amount of money lent by the creditor to borrower either on the basis of security or without security. Credit and advances is an important item on the asset side of the balance sheet of a commercial bank. Bank earns interest on credits and advances which is one of the major sources of income for banks. Bank prepares credit portfolio; otherwise it will not only effect debts but also affect profitability adversely (Nwankwo, 1991).

Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return of obligation repay on specified date on demand. Bank generally grants credit on four ways: overdraft, cash credit, direct credit, discounting of bills (Chhabra&Taneja, 1991).

For bank's overall corporate strategy and strategic plan at least three critical components are needed. They are business plan, framework for risk management and strategies for corporate control.These are the basic components provide a solid foundation for managing value and risk planning, it focuses in just an operating and competing in the financial services industry. The modern strategic approach also includes a framework for risk management and strategic for completing in the component fits for the modern idea of the basic business of banking as measuring, managing and accepting risk. The bank's objective is to manage value and risk by maximizing those or eliminating those that destroy value (Nwankwo, 1991).

There are several types of risk prevailed in the banking industry, but the major area of the risk are widely recognized, i.e. credit risk, market risk and operating risk etc. The credit risk is the potential financial loss resulting from the failure of customers to honors fully the terms of loan or contract. On the other hand, the market risk includes balance sheet risk and trading risk such as potential risk to earning and capital resulting from changes in interest rate, liquidity conditions, impact of foreign exchange rate fluctuations etc. Meanwhile operating risk arises from the natural disasters, errors in processing and settlement of transactions safeguarding of assets, system failure, fraud and forgery (Pandey, 2010).

Credit risk is defined as the possibility that a borrower will fail to meet its obligations in accordance with the agreed forms and condition. Credit risk is not restricted to lenders doing activities only but includes off balance sheet and interbank exposures. The goal of CRM is to maximize the bank risk adjusted rate of return by maintaining the CRE within acceptable parameters. For most banks, loan is the largest and most oblivious resources of credit. However, other sources of credit risk exist throughout the activities of banks including in the banking book and in the trading book and also in both on and off balance sheet (Michel et al., 2001).

Banks are increasingly facing credit risk or counterpart risk in various financial instruments other than loans including acceptance, interbank transactions, trade

financing, foreign exchange transaction and guarantee and the settlement of transactions. Credit is regard as the most income generating assets especially in commercial banks. Credit is regarded as the heart of commercial bank in the sense that, it occupies large volume of transaction. It covers the main part of investment. It is the main factor for creating profit and determining the profitability. It affects the overall economy(Horcher, 2005).

In today's context, it also effect on national economy in some extent because if the bank provides credit to retailer, it will make the customer status. Similarly, it provides cash to trade and industry too. The government will get tax from them and help to increase national economy. It is also the security against depositors. It is supposed from the very beginning that Credit is the wealth maximization derivative. However, other factors can also affect profitability and wealth maximization but the most effective factor is regarded as credit risk. It is the most challenging task because it is backbone in commercial banking.

It is stated that a credit risk strategy should clarify the types of credit the bank is willing to grant and its target markets as well as the required characteristics of its credit portfolio. These strategies should reflect the bank's tolerance for risk and the level of profitability the bank expects to achieve for incurring various credit risks.Credit risk strategies and policies should be effectively communicated throughout the organization. All relevant personnel should clearly understand the bank's approach to granting and managing credit and should be held accountable for complying with established policies and procedures. Moreover, establishing an appropriate credit environment also indicates the establishment of a good credit culture inside the bank, which is the implicit understanding among personnel about the lending environment and behavior that are acceptable to the bank (Richard, 1996).

The Basel Committee (2000) asserts that in order to maintain a sound credit portfolio, a bank must have an established formal transaction evaluation and approval process for the granting of credits. Approvals should be made in accordance with the bank's written guidelines and granted by the appropriate level of management. There should be a clear audit trail documenting that the approval process was complied with and identifying the individual(s) and/or committee (s) providing input as well as making the credit decision.

A sound credit granting process requires the establishment of well-defined credit granting criteria as well as credit exposure limits in order to assess the creditworthiness of the obligors and to screen out the preferred ones. In this regard banks have traditionally focused on the principles of five Cs to estimate borrowers' creditworthiness. This model was developed in the 1970 i.e. character, capacity, capital, collateral and condition.

Credit administration is a critical element in maintaining the safety and soundness of a bank. Once a credit is granted, it is the responsibility of the bank to ensure that credit is properly maintained. This includes keeping the credit file up to date, obtaining current financial information, sending out notices and preparing various documents such as loan agreements, and follow-up and inspection reports. Credit administration can play a vital role in the success of a bank, since it is influential in building and maintaining a safe credit environment and usually saves the institution from lending sins (Pradhan, 1994).

In order to ensure adequate controls over credit, there must be credit limits set for each officer whose duties have something to do with credit granting. Material transactions with related parties should be subject to the approval of the board of directors and in certain circumstances reported to the banking supervisory authorities. The means for guaranteeing adequate controls over credit risk in banks lay in the establishment of different kinds of credit reviews. Regular credit reviews can verify the accordance between granted credits and the credit policies, and an independent judgment can be provided on the asset qualities(Michel et al., 2001).

Thus effective management of credit should seriously be considered. Management is the system which helps to complete the task effectively. Credit risk management is also the system which helps to manage credit effectively, in other words, credit risk management refers the management of credit exposure arising from loans, corporate bodies, and credit derivatives. Credit exposures are the main sources of investment in commercial banks and return on such investment is supposed to be main sources of income (Batra&Dass, 2003).

2.1 Theoretical review

In this section, reviewing the general theories of credit risk management can provide a clearer picture on how banks carry out their credit risk management, despite of the

specific approaches that may differ among banks. The theories of credit risk management are as follows;

2.1.1 Commercial loan theory

The oldest theory of banking is the commercial loan theory, also called the real bills doctrine. The commercial loan theory holds that banks should lend only on short term, self-liquidating, commercial paper. According to Hosna&Manzura, (2009), the commercial loan theory is geared to influence persuasively both the bank lending and the general economic activities. Strict adoption of this theory will reveal that it is expected to serve as a monetary supply to changes in aggregate economic activity. The popularity of this doctrine among Deposit-Money Banks (DMBs) in Nigeria is evident. Nigerian bankers believe that since their resources were repayable at short notice, such depositors' monies should be employed accordingly in short-term loans.

Kargi, (2011) posited that the strong tie to this conception is rather orthodox if consideration is given to the fact that at the time of the supremacy of the theory, there were little or no secondary reserve assets, which could have served as a liquidity buffer for the bank. Moreso, this theory fails to consider the credit needs of Nigeria's developing economy. It has not encouraged banks to fund the purchases of plants, equipment, land, and home-ownership. For a theory to maintain that all loans should be liquidated in the normal course of business shows its failure to recognize the relative stability of bank deposits. Whereas, demand deposits are on demand, all depositors are not likely to demand payment at the same time. Thus, stability of deposits enables a bank to extend funds for a reasonable long period without danger of illiquidity. Though, with its flaws, the commercial loan theory, or real bills doctrine has been a persistent theory of banking. Vestiges of it still remain in the structure of bank regulatory agencies, bank examination procedures and the thinking of many bankers. One cannot understand contemporary banking without an understanding of our banking history, and cannot understand banking history without an understanding of the commercial loan theory.

2.1.2The anticipated income theory

Out of a comprehensive study in 1949, Prochnow formulated a new loan theory which he called "the Anticipated Income Theory". According to AfriyieandAkotey, (2011), they found in their study that: In every instance, regardless of the nature and character

of the borrower's business, the bank planned liquidation of term loans from anticipated earnings of the borrower. Liquidation is not by sales of assets of the borrower as in commercial or traditional theory of liquidity or by shifting the term loan to some other lenders as in the shiftability theory of liquidity but by anticipating income of the borrower. In effect, this theory assumes that banks should make loans on the basis of the anticipated income of the borrower and not on his present value. In the words of Kolapo, Ayeni, andOke, (2012), one striking thing with this theory is its "future-oriented approach" to bank loans and advances. It is also generally known as "cash flow approach" to lending. Properly understood, this theory was a rival only to the commercial loan theory, not the shift ability theory. It does not question the shiftability view that a bank's most fundamental source of liquidity is its secondary reserves. Rather, it again focused attention on the types of loans appropriate for a bank to make but came to quite a different conclusion than that reached by the advocates of the commercial loan theory (Moti, Masinde, &Mugenda, (2012).

2.1.3The credit risk theory

Credit risk according to SalasandSaurina, (2002) refers to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily that of the lender and includes lost principal and interest, disrupt loss may be complete or partial and can arise in a number of circumstances, such as an insolvent bank unable to return funds to a depositor. To reduce the lenders risk, the lender may perform a credit check on the prospective borrower, may require the borrower to take appropriate insurance, such as mortgage insurance or seek security or guarantees of third parties. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt (Owojori, Akintoye&Adidu, (2011).

2.1.4 The liability management theory

This theory holds that it is unnecessary to observe traditional standards since reserve money can be borrowed or obtained in the money market using short term debt instruments whenever a bank experiences reserve deficiency. According to Shafiq& Nasr, (2010), it does not mean that the bank manages only its liabilities and passive with respect to its assets. Rather, the theory continues to recognize that the asset structure of the bank has a prominent role to play in providing the bank with liquidity.

But the theory takes a one dimensional approach to liquidity and argues that the bank can also use its liabilities for liquidity purposes. A bank wants liquidity for deposit withdrawal purposes and also to meet the reasonable loan requests of its customers. Not only are bank loans profitable but a bank that won't or can't make loans to its depositors when they need funds is not likely to keep those depositors for very long.

2.2 Empirical review

The study is carried out to demonstrate the credit risk management of commercial bank of Nepal. The aim of the study is to analyze the impact of credit on profitability of sample banks. The study has reviewed some of the articles on related subject matter. The study was designed by deriving variables from the unified theory of acceptance and use of technology model. The summary of the major articles on this subject matter is presented in *Table 1*.

Table 1

Review of empirical studies

Study	Major Findings
Francis (2014)	Revealed that commercial banks in Kenya make use of credit risk management practices that include; thorough loan appraisal, asking for collateral and checking the credit history of the borrowers.
Thapa (2014**)**	Found that credit management of Everest Bank Limited. It is found that there is decreasing in interest income to loan and advances and decreasing in recovery of outstanding interest both.
Shakya (2015)	Found that most of the banks are of Nepal nowadays are focusing on consumer lending NBL also falls on the same category. This is because of weak credit policy.
Uwuigbe, Uwuigbe&Oyewo(2015)	Revealed that while ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and unsecured loan ratio and bank's performance was not significant.
Alshatti (2015)	Further concluded that the credit risk management indicators considered in this research have a significant effect on financial performance of the Jordanian commercial banks. Based on findings, the researcher recommends banks to improve their credit risk management to achieve more profits, in that banks should take into consideration, the indicators of Non-performing loans/Gross loans, Provision for facilities loss/Net facilities and the leverage ratio that were found significant in determining credit risk management.
Manandhar (2015)	Found that EBL has disbursed highest credit and advances than others. At the mean time HBL has utilized the total deposit maximally than other banks in granting loan and advances.
Shrestha (2016)	Found that NIB has lowest non-performing loan to total loan and advances, this NIB is the best performance than NIC. If non-performing loan increases the overall banking business
Pathak (2017)	

	will be affected.
	) Found that BOK has maintained higher credit and advances to total deposit. This study also can be concluded that Fixed deposit is the main source of granting credit for both banks.
Ifeanyi& Francis (2017).	) Found that loans and advances and loan loss provision have positive and insignificant effect on profitability, while non-performing loan has a negative and insignificant effect on profitability. The overall estimates of the two regressions have good fit and are adequate statistically.
Zhu, Wang, Yu, Z.Q., & Wu. (2017)	) Demonstrated that the banking sector grew consistently in three aspects of operation: operating performance, profitability performance, and risk management in the last five years of the subject period. These results showed that the overall banking sector was capable of pursuing growth in both operations and profits while accounting for risk management.
Dhungana,&Pradhan(2017)	) Showed that bank lending has positive effect on the inflation in Nepal. Major conclusion of this study is that there is positive impact of bank lending on inflation in Nepal.
Abayomi,Joseph, &Tolulope(2018)	) Found that inadequate loan supervision and monitoring is not a major cause ofSmall Scale Enterprises bad debt and also that credit management affects the performance of small scaleenterprises. The study revealed that inability for the some small scale enterprises to pay outstanding facilities.
Daniel, Ezekiel, Musa, Muneer&Bashiru(2018)	) Observed that profitability of commercial banks in Sierra Leone is significantly influenced by the efficiency of credit management. The findings from this study noted the need for banks in Sierra Leone to have in place a good credit policy in order to improve their profitability. It has focused the agricultural sector which is considered the back bone of the economy is gaining gradual recognition.
Honey, Tashfeen, Farid&Sadiq(2019)	) Indicated that larger boards in Pakistani banks provide ineffective governance through increased loan loss provisioning, while independent directors and director attendance at meetings do not seem to matter. The study concludes that effective corporate governance plays an important role in credit risk management in banks.
Tawiah, & Asante (2019)	) Revealed that the key credit risk sources the surveyed microfinance institutions were exposed to in their operations were corporate, individual and SMEs commercial loans. Also, it was established that most of these microfinance institutions relied mostly on accounting based method and subjective analyses to quantify their organization risk exposures.
Rakhimzhanova, , Makysh, &Saparova(2020)	) Found that the amount of overdue debt remains an urgent problem for all countries that had been considered in the article over the past few years. Both banks and government agencies were trying to solve it, and certain successes had already been achieved, but stability was still a long way off.

Francis (2014) examined that commercial banks in Kenya make use of credit risk management practices that include; thorough loan appraisal, asking for collateral and checking the credit history of the borrowers. Additionally, the bankers use covenants, credit rationing, loan securitization, and loan syndication as risk management defensives. The factors that influence effectiveness of credit risk management systems used by commercial banks in Kenya include establishment of a credit policy that

clearly outline the scope and allocation of bank credit facilities, maintenance a credit administration system that with adequate controls over credit; top management support; communication of credit guidelines to every officer in the credit department, screening of potential borrowers, employing well trained staff, constant review of the borrowers' liquidity and the use of supportive technology in credit analysis. The internal performance measures of bank lending used by commercial banks in Kenya include the Basel II criteria and bank profitability, including return on equity, return on assets and return on investment. Other indices are the developed benchmarks that include cost per each completed loan, cost per thousand dollars of loans, non-interest revenue from each loan, loans per employee.

Thapa (2014**)** analyzed the credit management of Everest Bank Limited. It is found that there is decreasing in interest income to loan and advances and decreasing in recovery of outstanding interest both. Then, the ratio of Loan and advances to current assets is above 50% each fiscal year indicates the good lending performance. It is also found that Interest expenses to total interest income ratio is increasing trend throughout the study period. The higher ratio shows unfavorable profitability situation of the bank.

Shakya (2015)studied on Credit Management of Nepal Bank Ltd. It is found that financial reengineering process of NBL, loan investment policy has been brought. New policy of lending focuses on cash flow lending by passing out collateral based. Similarly, it is also found that most of the banks are of Nepal nowadays are focusing on consumer lending NBL also falls on the same category. This is because of weak credit policy. Then, NBL has invested money in growing credit and advances but the recovery process of the bank is slow. Efficiency in management is not satisfactory. Moreover, most of the credit customers of NBL are satisfied with the banks. Customers said that the main strength of NBL is Lending Interest Rate. The Lending Rate of NBL is found low in comparison of other Banks.

Uwuigbe, Uwuigbe,andOyewo, (2015) assessed the effects of credit management on bank's performance in Nigeria. In achieving the objectives identified in this study, the audited corporate annual financial statement of listed banks covering the period 2007-2011 were analyzed. More so, a sum total of ten (10) listed banks were selected and analyzed for the study using the purposive sampling method. However, in an assessing the research postulations, the study adopted the use of both descriptive

statistics and econometric analysis using the panel linear regression methodology consisting of periodic and cross sectional data in the estimation of the regression equation. Findings from the study revealed that while ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and unsecured loan ratio and bank's performance was not significant. Hence, the study recommends that banks management should put in place or institute sound lending framework, adequate credit administration procedure and an effective and efficient machinery to monitor lending function with established rules.

Alshatti (2015) examined the effect of credit risk management on financial performance of the Jordanian commercial banks. Two mathematical models have been designed to measure this relationship, the research revealed that the credit risk management effects on financial performance of the Jordanian commercial banks as measured by ROA and ROE. The research further concludes that the credit risk management indicators considered in this research have a significant effect on financial performance of the Jordanian commercial banks. Based on findings, the researcher recommends banks to improve their credit risk management to achieve more profits, in that banks should take into consideration, the indicators of Non-performing loans Gross loans, Provision for facilities loss/Net facilities and the leverage ratio that were found significant in determining credit risk management. Also, banks should establish adequate credit risk management policies by imposing strict credit estimation before granting loans to customers, and banks in designing an effective credit risk management system, need to establish a suitable credit risk environment; operating under a sound credit granting process, maintaining an appropriate credit administration that involves monitoring, processing as well as enough controls over credit risk, and banks need to put and devise strategies that will not only limit the banks exposition to credit risk but will develop performance and competitiveness of the banks.

Manandhar (2015) studied credit management in commercial banks of Nepal (with reference to NABIL Bank, Standard Chartered Bank, Everest Bank and Himalayan Bank). It is found that EBL has disbursed highest credit and advances than others. At the mean time HBL has utilized the total deposit maximally than other banks in granting loan and advances. It is also found that SCBNL has remained more effective

in managing credit to gain highest interest income. At last this study found that the interest income on credit and advance to total assets has indicated that Credit and advances is major source of income in banks.

Shrestha (2016) analyzed the functions, procedures and activities of commercial banks credit policy. It can be concluded that NIC has maintained higher loan and advances to total deposit which shows that NIC seems to be strong to mobilize its total deposit as loan and advances. This study found that NIB has lowest non-performing loan to total loan and advances, this NIB is the best performance than NIC. If non-performing loan increases the overall banking business will be affected. So provision amount will increase and profit will decrease. It is also found that Correlation coefficient between non-performing loan and loans of NIB is moderate, negative correlation. It indicates that non-performing loan and loans were moderately, negatively related with each other.

Ifeanyi and Francis (2017) examined the nexus between credit management and profitability (ROA) of DepositMoney Banks (DMBs) in Nigeria context for the period of 2006 to 2015. Secondary data weresourced from Central Bank of Nigeria Statistical Bulletins and the Annual Reports of all theexisting DMBs studied. The study employed multiple regression technique in analyzing thedata that gathered, the analysis was done using ordinary least square with E-View 9Econometric tool. The study found that loans and advances and loan loss provision havepositive and insignificant effect on profitability, while non-performing loan has a negativeand insignificant effect on profitability. The overall estimates of the two regressions havegood fit and are adequate statistically. The R2squared which measures the overall goodnessof fit of the entire regression shows the value of 84% and 79% in models one and tworespectively. While the Durbin Waston statistic with value of 2.808450 and 2.499545 showsthat there is no auto correlation among the considered variables and the overall regression isstatistically significant. Thus, the study concluded that sound credit management heightensprofitability and holds the financial strength of the DMBs.

Pathak (2017)analyzed credit Management of Joint Venture Commercial Banks (With Reference to Nepal Investment Bank and Bank of Kathmandu). It is found that BOK has maintained higher credit and advances to total deposit. This study also can be concluded that Fixed deposit is the main source of granting credit for both banks.

Then, credit loss provisioning is in decreasing trend so, it indicates efficient credit policy. Moreover, Interest rate effects amount of deposit and credit which is statistically significant.

Zhu, Wang, Yu, and Wu (2017**)** analyzed the relationship between banks' performance and their nonperforming loans (NPLs). The banks' performance through a network production process structure with NPLs is developed. With increasing NPLs in recent years, the quality of lending assets is a key significant and influencing factor for banks' operational risk. The research methodology is to integrate the radial and non-radial measures of efficiency into the network production process framework with NPLs; this study utilizes network epsilon-based measure model to evaluate the banking industry performance. In addition, the key characteristics of the bank industry including those of financial holding companies and privatized government banks are needed to be figured out and to provide insight into what causes imperfectly competitive conditions for some banks. The results demonstrate that the banking sector grew consistently in three aspects of operation: operating performance, profitability performance, and risk management in the last five years of the subject period. These results showed that the overall banking sector was capable of pursuing growth in both operations and profits while accounting for risk management. The potential applications and strengths of network data envelopment analysis in assessing financial organizations are also highlighted.

Dungana andPradhan (2017**)**examined the effect of commercial bank lending on inflation in Nepal. The study has conducted correlation and regression analysis using panel data of twenty four commercial banks during the period of 1996 -2015. The empirical results show that bank lending has positive effect on the inflation in Nepal. The study implies that central bank willing to contain inflation should curtail excessive bank lending on unproductive and speculative sector. Major conclusion of this study is that there is positive impact of bank lending on inflation in Nepal. However interest rate has negative impact on inflation. Therefore it can be recommended that central bank willing to contain inflation should curtail excessive bank lending on unproductive and speculative sector.

Abayomi, Joseph and Tolulope (2018)analyzed a framework for understanding the importance of credit management as it affects the performance of small-scale enterprises. Invariably credit management involves the matter of bad debts and its

management. No matter how efficient managers of credit are, there is always the incidence of bad debts; evaluation of credit management therefore must involve methods of debt recovery. Credit management examines how financial institutions respond to credit facilities given to their customers and how the small scale enterprises react to methods of credit management. Small-scale enterprises are basically grass-root businesses that support the livelihood of entrepreneurs and in turn create jobs and reduce poverty to a large extent. It is essential that credit facilities extended by the financial institution to the small-scale enterprises are properly managed in order to ensure repayment of facilities and growth of the small-scale business. This brings us to how the management of credit influences the performance of such businesses. Primary Data were utilized through the Questionnaires administered on deposit money banks, micro finance banks as well as selected small-scale business owners. Descriptive statistics were employed to analyze the data using SPSS so as to test the hypotheses. It was observed that most small-scale owners do not have the expertise to maintain proper records of their activities. Banks should enlighten their customers on importance of proper record keeping, utilization of the credit facilities given to them, and the necessity for prompt repayment of facilities. The study is expected to be useful to entrepreneurs, players in financial institutions and policy makers of the economy.

Daniel, Ezekiel, Musa, Muneer and Bashiru (2018)analyzed the impact of efficient credit management on profitability of commercial banks in Sierra Leone. For this purpose, the Rokel Commercial Bank was selected as a case study. Collection of secondary data was mainly from the five years financial statements of the bank for period 2010 to 2014, and annual reports of the bank. The analysis of the data was quantitatively as well as qualitatively done usingratios analysis and charts. Results show that profitability of commercial banks in Sierra Leone is significantly influenced by the efficiency of credit management. The findings from this study noted the need for banks in Sierra Leone to have in place a good credit policy in order to improve their profitability. Notwithstanding that, it could be noted that the credit management system of the bank have had room to improve its efficiency in terms of the amount of advances given out thereby impacting greatly on profitability. Though this was done by giving preference to particular sectors, the distribution was becoming more

equitable with time. The agricultural sector which is considered the back bone of the economy is gaining gradual recognition.

Credit management is undoubtedly the heart of banking business in the country. Bank credit management is influenced by three factors namely regulators, institutional constraints, and macroeconomic policies. Bank business is perhaps the most regulated of all the businesses in Sierra Leone. In effect, therefore, Rokelcommercial bank has management skills which appear to benefit the bank's overall performance. Optional branch network, lending opportunities, staff strength are all factors considered by Rokel Commercial Bank S/L Ltd in their credit management.

Honey, Tashfeen, Farid, andSadiq (2019) examined the impact of corporate governance on the Loan Loss Provisions (LLPs) of banks. Linear regression model is applied on a strongly balanced panel data obtained from eighteen commercial banks of Pakistan for the years 2011-2016. The study considers several corporate governance mechanisms such as independent directors, board of directors, Chairman-CEO duality, attendance in board meetings etc. and takes LLPs as proxy for credit risk. Our findings suggest that with reference to Pakistani banks, corporate governance does have an influence on loan loss provisioning.

Rakhimzhanova,Makysh, &Saparova (2020)This study has found that the amount of overdue debt remains an urgent problem for all countries that had been considered in the article over the past few years. Both banks and government agencies were trying to solve it, and certain successes had already been achieved, but stability was still along way off. It has discusses issues of managing problem loans in the countries of the Eurasian Economic Union. The main goal was to solve problems for realizing the positive effects of easing the conditions of bank lending, identifying barriers and constraints taking into account the current policy to free the banking sector from unscrupulous participants. Therefore, the relevance of the topic determines that the problems raised by the authors in the article require a comprehensive study and comprehensive analysis preparing a scientific justification.Based on the identified goal, the authors analyzed approaches to determining problem assets in the banking system, the dynamics of indicators for the development of the banking sector, the share of problem loans in the banking system of the countries of the Eurasian

Economic Union, a consolidated report on the profit and loss of commercial banks, the problems of unsuccessful and problem loans - NPL. Based on the study, conclusions are drawn and recommendations are given. The solution to these problems involves the prevention of banking risks, assessing the adequacy of the formation of provisions for possible losses on loans and the compliance of the business models used by credit organizations with their capabilities.

The results clearly indicate that larger boards in Pakistani banks provide ineffective governance through increased loan loss provisioning, while independent directors and director attendance at meetings do not seem to matter. On the other hand where one strong family member dominates, the CEO-Chairman duality appears to induce a reduction in the percentage of LLPs and therefore causes decreases in credit risk. This reflects that the separation of these two positions could lead to higher accountability and responsibility, where there is higher transparency with segregation of duties. The paper concludes that effective corporate governance plays an important role in credit risk management in banks and recommends that regulations are needed to further endorse the validity of CEO-Chairman duality in Pakistan.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically it is necessary for the researcher to know not only the research methods but also the methodology. When we talk about the research methodology we not only talk of research methods but also consider the logic behind the methods. We use in the context of our research study and explain why we are using a particular method or techniques and why are not using other so that research result are capable of being evaluated either by the researcher himself or by others. The study of research methodology gives the student the necessary training in gathering material and arranging them participating in the field work which required, and also training in techniques for collection of data appropriate to particular problem in the use of statistics and controlled experimentation and in recording evidence sorting it out and interpreting (Kothari, 1990).

The research methods section describes actions to be taken to investigate a research problem and the rationale for the application of specific procedures or techniques used to identify, select, process, and analyze information applied to understanding the problem, thereby, allowing the reader to critically evaluate a study's overall validity and reliability. This section of a research paper answers how was the data collected or generated and how was it analyzed. It may include publication research, interviews, surveys and other research techniques, and could include both present and historical information. It consists of six different sections. First section includes the description of research design under the first sub-topic. Second section is about the population and sample of the research and section three consists of the explanation of nature and sources of data used in the research. The fourth, fifth and sixth sections include definition of variables, methods of analysis and limitations of the study respectively.

3.1 Research framework and definition of the variables

From the theoretical and empirical literature reviews, the following conceptual frameworkof the study is developed by the researcher. It has been shown in below figure:

Loan & Advance

Non-performing Loan (NPL)Net Profit

Loan Loss Provision (LLP)

Figure 1. Research framework of the study

3.1.1 Loan and advance

Banks provide the required capital to the economy in the form of loan and advances which might have some probability to fail to be paid back which is termed as credit risk, the chance that a loan will not be repaid timely. Hence the main concern of the banks is credit risk and its management as credit or loans and advances are the main source of income for them. Every loan disbursed should be collected including its return, if the lending bank has to sustain as a going business concern.Lending activities require banks to make judgment related to the credit worthiness of a borrower. However, the judgment does not always prove to be accurate and the credit worthiness of a borrower may decline overtime due to various factors. Consequently, banks face credit risks that the borrower may fail to meet the terms of the underlining loan agreement.Hence, there is positive relationship between increase in loan and advance and banks profitability.

3.1.2 Non-performing loan

Non-performing loan are those 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 repayment of the principal creates 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 classified as non-performing. Banking sector is seriously affected by the non-performing loans/assets. If non-performing assets or loan increases, the overall banking business will be affected. So, provision amount will get increased and profit will decrease. It may generally be assumed that there is always a negative relationship between the two.

3.1.3 Loan loss provision

Loan loss provision is reserve created to save individual and households savings. Commercial banks have to maintain certain percentage as loan loss provision on the basis of the nature of loan. Higher the NPA higher will be Loan loss Provision. The provision for loan loss reflects the increasing probability of non-performing loan. The increment in loan loss provision result a decreased profit and thereby decrease in dividend payment but its positive impact is that it strengthens financial conditions of the banks by controlling credit risks related to deposits.

3.1.4 Net profit

The profit of a bank after operating expenses and all other charges including taxes, interest and depreciation has been deducted from total revenue and also called net earnings or net income. Any profit that is gained goes to the business's owners, who may or may not decide to spend it on the business. It there is problem in credit processing includes lack of thorough credit assessment, absence of testing and validation of new lending techniques, there will be no profit. It means positive relationship between credit and net profit. Therefore, by considering the importance of credits in the banking sector and their severe economic impact, it is extremely important to find the relation and impact of credit with/on profitability of the bank.

3.2 Research design

Decision regarding, what were; when how much by means concerning an enquiry or a research study constitutes a research design “A research design is the arrangement of conditions for collection and analysis of data in manner that aims to combine relevance to the research purpose with economy in procedure”. In fact the research constitute the blue print for the collection, measurement and analysis of data as such the design includes an outline of what the researcher will do writing the hypothesis and its operational implications to the final analysis of data. The study is based on both descriptive and analytical research design to achieve the specific objective of the study.

3.3 Population and sampling

At present, there are 27 commercial banks operating in Nepal. They constitute the population. Among of them, Nepal Investment Bank Ltd., Nabil Bank Ltd. and Everest Bank Limited are selected for the study of credit risk management as

sample.Ten years data are taken to conduct the study from 2010/11 to 2019/20 on the basis of random sampling method.

3.4Nature and sources of data

There are two types of data. One is primary and another is secondary data. The study uses the secondary data to fulfill its objectives. Secondary data are those data that are collected by someone else or used already and made available to other in the form of published statistics such as annual reports, periodicals, newspapers, magazines etc. Once a primary data is used, it loses its originality & becomes secondary. This study is mainly depends on the use of secondary data that consists of annual reports of the concerned banks. Besides the annual reports various other sources of data have also been used for the purpose of the study plan documents, newspaper, magazine, economic journals, NRB reports etc.

3.5Tools used

To make the study more specific and reliable, the researcher uses following types of tools for analysis;

3.5.1 Arithmetic mean

The arithmetic mean or simple mean of set of observations in the sum of all the observation divided by the number of observations. It is the best value, which Represent to the whole group means is the arithmetic average of a variable.Arithmetic mean of a series is given by:

$$\text{Mean } (\bar{X}) = \frac{\phi x}{n}$$

Where,

$\bar{X}$= Sum of the variables 'x'

N = No. of Observation

3.5.2 Standard deviation

Thestandarddeviationistheabsolutemeasureofdispersion in whichthe drawback presentinothermeasureofdispersionasitsatisfiedmostoftherequisitesofagood measure of dispersion. Standard deviation is defined as the positive square root of the mean as square of the deviation takes from the arithmetic mean. It indicates the ranges and size

ofdeviancefromthemiddleof mean.It measurestheabsolutedispersion. Higher the standard deviation Higher will be the variabilityand vice versa. Dispersion measures the variation of the data from the central value. In other words, it helps to analyze the quality of data regarding its variability. It is calculate as:

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\phi(X - \bar{X})^2}{n}}$$

3.5.3 Coefficient of variation (CV)

Standard deviation is the absolute measure of dispersion. The relative measure of dispersing based on the standard deviation is known as the measurement of coefficient ofstandarddeviation.Thepercentageofmeasureofco-efficientofsoiscalledco- efficient of variation. Less CV is the more uniformity and consistency and vice versa. Only standard deviation is not appropriate to compare two pairs of variables but also CV iscapabletocomparetwovariablesindependentlyintermsoftheirvariability.Coefficient of

$$\text{Variation (C.V.)} = \frac{\text{S. D.}}{\bar{X}} \mid 100$$

3.5.4 Correlation coefficient (r)

Correlationcoefficientisdefinedastheassociationbetweenthedependentvariable and independent variable. It is a method of determining the relationship between these two variables.Ifthetwovariablesaresorelatedchangeinthevalueofindependent variablecausethechangeinthevalueofdependentvariablethenitissaidtohave correlation coefficient.

$$\text{Correlation Coefficient (r)} = \frac{n\phi xy - \phi x \phi y}{\sqrt{n\phi x^2 - (\phi x)^2}\sqrt{n\phi y^2 - (\phi y)^2}}$$

3.5.5 Trend Analysis

Trend analysis measures the scenario of the variables for the different period. This tool is used to find out the trend of different financial indicators. To find out the actual situation of the different factors for various years, trend analysis is most useful. It does not provide the analytical figures as cause and effects but it shows the actual figures. It may be down ward sloping, upward sloping of constant over the period.

CHAPTER IV

RESULTSAND DISCUSSION

In this chapter, the data have been analyzed and interpreted using financial and statistical tools following the research methodology dealt in the third chapter. In the part of analysis, various tables have been used to present the data collected from various sources have been inserted in the required tables according to their homogenous nature. The outcomes of the analysis have been compared with conventional standard with respect to ratio analysis, directives of NRB and other factors. Furthermore, many suitable graphs, and diagrams have also been used to clarify the actual position and performance of the bank.

4.1 Analysis of data

Ratio analysis is one of the most important tools of financial analysis which shows the significant relationships between various items of balance sheet and helps to know the financial position and performance of the company. In other word, it involves the methods of calculating and interpreting financial ratios in order to assess the firm's performance and status. The basic input to ratio analysis is the firm's income and expenditure statement and balance sheet for the periods to be examined. The study consists of the following ratios to analyze the credit risk management of the Nepal Investment Bank Ltd., Everest Bank Ltd. and Nabil Bank Ltd.

4.1.1 Credit efficiency ratios

Credit efficiency means efficient allocation of credit and support the viability and profitability of their business. The quality of loans and advances provided to the borrowers is important to maintain adequate liquidity and also to improve the profitability of banks. This section focuses how credit-deposit ratio and NPLs to loan and advances ratio are useful in analyzing the credit efficiency of the banks.

4.2.1 Loans and advances to total deposit ratio

This ratio is used to find out how successfully the banks are utilizing their deposited fund on credit or loan for profit generating purpose as loans and advances yield high rate of return. Higher CD Ratio implies the better utilization of total deposits and better earning. Hence 70 percent to 80 percent CD ratio is considered as more appropriate.

Table 2

Loan and advance to total deposit ratio

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	76.53	81.97	75.52
2011/12	75.61	73.03	71.81
2012/13	72.90	74.32	75.18
2013/14	72.55	70.46	76.60
2014/15	62.84	73.06	65.57
2015/16	69.02	78.67	72.50
2016/17	75.59	83.25	81.28
2017/18	83.56	86.10	80.89
2018/19	81.25	83.54	86.04
2019/20	79.72	82.93	82.27
Mean	74.96	78.73	76.76
SD	6.07	5.56	6.02
CV	8.10	7.07	7.84

Source: Appendix- IV

Figure 2. Loan and advance to total deposit ratio

Table 2 and Figure2 exhibit that the sample bank's loan and advances to total deposit ratio are in fluctuating trend. The ratio of NABIL ranges the highest of 83.56 percent in the fiscal year 2017/18 and the lowest of 72.55 percent in the fiscal year 2013/14. Similarly, the ratio of NIBL ranges the highest of 86.10 percent in the fiscal year 2017/18 and the lowest of 70.46 percent in the fiscal year 2013/14. Likewise, the ratio of EBL ranges the highest of 86.04 percent in the fiscal year 2018/19 and the lowest of 65.57 percent in the fiscal year 2014/15. The mean ratio of NABIL, NIBL and EBL are 74.96 percent, 78.73 percent and 76.76 percent respectively. It can be concluded

that NIBL is the most successful among them to mobilize its total deposit as loan & advances and acquiring highest profit. The standard deviation of NABIL, NIBL and EBL are 6.07, 5.56 and 6.02 respectively. It indicates that NIBL has the lowest risk among them. By the coefficient of variation of the ratios, it can be concluded that NIBL has seen the most consistent in the ratios with the lowest CV of 7.07 percent among them.

4.1.1.2 Loans and advances to total assets ratio

This ratio indicates the volume of loans & advances out of the total Assets. A high degree of the ratio indicates that the bank has been able to mobilize its fund through lending function. However lending always carries a certain risk of default. Therefore a high ratio represents low liquidity and low ratio represents low productivity with high degree for safety in terms of liquidity.

Table 3

Loan and advance to total assets ratio

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	65.42	70.42	67.17
2011/12	65.84	63.32	64.34
2012/13	63.31	63.43	66.01
2013/14	62.67	60.37	67.53
2014/15	56.47	63.46	54.95
2015/16	59.78	65.85	59.67
2016/17	64.05	69.37	66.34
2017/18	67.20	70.29	65.04
2018/19	66.40	68.41	65.86
2019/20	64.75	68.96	64.35
Mean	63.59	66.39	64.12
SD	3.28	3.57	3.91
CV	5.16	5.38	6.09

Source: Appendix- V

Table 3 and Figure 3 depict that the ratio of loan & advance to total assets ratioof sample banks. The ratio of NABIL ranges the highest of 67.20 percent in the fiscal year 2017/18 and the lowest of 56.47 percent in the fiscal year 2014/15. Similarly, the ratio of NIBL ranges the highest of 70.42 percent in the fiscal year 2010/11 and the lowest of 60.37 percent in the fiscal year 2013/14. Likewise, the ratio of EBL ranges the highest of 67.53 percent in the fiscal year 2013/14 and the lowest of 54.95 percent in the fiscal year 2014/15. The mean ratio of NABIL, NIBL and EBL are

63.59percent, 68.96 percent and 64.35 percent respectively. It can be concluded that NIBL is the best mobilizing of fund as loans and advances and it seems quite successful in generating highest ratio among them. The SD of NABIL, NIBL and EBL are 3.28 percent, 3.57 percent and 3.91 percent respectively which means NABIL has the lowest risk among them. By measuring CV, NABIL is the most uniform in the ratios or low risk among them since NIBL has least CV of 5.16 percent.

Figure 3. Loan and advances to total assets ratio

4.1.1.3 Loan loss provision to loan and advances ratio

Loan loss provision is the compulsion factor in lending practices and Non-Performing Loan is the evil factor in banks. If they are high then they will decrease the amount of profit which the bank's target to receive? This ratio measures the portion of provisioned loan with non-performing Loan. Since, all loan are needed to made provision, it is the compulsion part. Rather the difference part as compare to Non-Performing loan is not so good to result a sound profit.The provision for loan loss reflects the increasing probability of non-performing loan. Increase in loan loss provision decreases its profit and result to decrease in dividends. But its positive impact is to strengthen the financial conditions of banks by controlling the credit risk and reduced the risks related to deposits. The low ratio indicates the good quality of assets in total volume of loan &advances. High ratio indicates more risky assets in total volume of loan & advances.

Table 4

Loan loss provision to loan and advances ratio

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	2.29	1.93	1.94
2011/12	3.03	3.05	1.97
2012/13	2.75	2.80	1.86
2013/14	2.76	2.77	1.85
2014/15	2.53	2.22	1.62
2015/16	2.13	1.81	1.41
2016/17	1.80	1.97	1.29
2017/18	1.53	2.26	1.20
2018/19	1.60	3.40	1.13
2019/20	1.93	4.55	1.52
Mean	2.24	2.68	1.58
SD	0.52	0.84	0.32
CV	23.42	31.48	19.98

Source: Appendix- VI

Figure 4. Loan loss provision to loan and advances ratio

Table 4 and Figure 4 highlight that the loan loss provision to loan & advance ratio of selected commercial banks over the ten year study period. The ratio of NABIL has highest 3.03 percent in the fiscal year 2011/12 and lowest 1.53 percent in the fiscal year 2017/18. Similarly, the ratio of NIBL ranges the highest of 4.55 percent in the fiscal year 2019/20 and the lowest of 1.81 percent in the fiscal year 2015/16. Likewise, the ratio of EBL ranges the highest of 1.97 percent in the fiscal year 2011/12 and the lowest of 1.13 percent in the fiscal year 2018/19. The mean ratio of NABIL, NIBL and EBL are 2.24 percent, 2.68 percent and 1.58 percent respectively.

Here, average loan loss provision to loan and advance ratio of NIBL is the highest among them. NIBL has huge amount to be made for provision for loan losses. Therefore, NIBL has not been able to earn a profit from the point of view average. But these three banks can be managed and bring them below 5 percent by managing loan properly in final year. The standard deviation of NABIL, NIBL and EBL are 0.52, 0.84 and 0.32 respectively. It indicates that EBL has the lowest risk among them.By measuring coefficient of variation, EBL is the most uniform in the ratios among them since EBL has least CV of 19.98 percent.

4.1.1.4 Non-performing loans to loan and advances ratio

As the NRB directives given to the commercial banks, standard, sub-standard, doubtful and bad loans are categorized under non-performing loans.NRB has directed all the commercial banks to create loan loss provision against the doubtful and bad debts. This ratio helps in minimizing the non-performing loans and helps to control the credit. It is also called credit risk ratio which measures the possibility that loan will not be repaid or that investment will deteriorate inequality or go into default with consequent loss to the bank. Actually, credit risk ratio shows the proportion of non-performing assets in total loan advance of the bank.

Table 5

Non-performing loan to loan and advance ratio

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	1.81	0.96	0.35
2011/12	2.40	3.42	0.85
2012/13	2.19	1.97	0.64
2013/14	2.30	1.82	0.99
2014/15	1.86	1.27	0.67
2015/16	1.17	0.69	0.39
2016/17	0.81	0.85	0.26
2017/18	0.54	1.38	0.20
2018/19	0.74	2.86	0.16
2019/20	0.99	3.00	0.22
Mean	1.48	1.82	0.47
SD	0.71	0.97	0.29
CV	47.77	53.35	62.34

Source: Appendix- VII

Figure5. Non-performing loan to loan and advance ratio

Table 5 and Figure 5 show that the non-performing loan to loan and advance ratio of sample banks. The ratio of NABIL ranges the highest of 2.40 percent in the fiscal year 2011/12 and the lowest of 0.54 percent in the fiscal year 2017/18. Similarly, the ratio of NIBL ranges the highest of 3.42 percent in the fiscal year 2011/12 and the lowest of 0.69 percent in the fiscal year 2015/16. Likewise, the ratio of EBL ranges the highest of 0.99 percent in the fiscal year 2013/14 and the lowest of 0.16 percent in the fiscal year 2018/19. The mean ratio of NABIL, NIBL and EBL are 1.48 percent, 1.82 percent and 0.47 percent respectively. EBL has the lowest NPL ratio among them thus EBL performing good or maintaining their NPLs perfectly which shows EBL has lowest credit risk among them. The standard deviation of NABIL, NIBL and EBL are 0.71, 0.97 and 0.29 respectively. It indicates that EBL has the lowest risk among them.By measuring coefficient of variation, NABIL is the most uniform in the ratios among them since NABIL has least CV of 47.77 percent.

4.1.1.5 Loan loss provision to non-performing loan ratio

Loan loss provision is the compulsion factor in lending practices and Non-Performing Loan is the evil factor in banks. If they are high then they will decrease the amount of profit which the bank's target to receive? This ratio measures the portion of provisioned loan with non-performing Loan. It is compulsory to make loan loss provision on all loans which do not affect the performance of bank but non-performing loan doesn't result sound profit.

Table 6

Loan loss provision to non-performing loan ratio

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	126.23	200.51	554.13
2011/12	126.20	89.12	229.97
2012/13	125.71	142.39	291.67
2013/14	120.30	151.95	186.81
2014/15	135.95	174.29	240.05
2015/16	182.68	261.21	362.12
2016/17	221.70	231.87	501.01
2017/18	284.04	164.20	600.53
2018/19	216.65	118.87	715.25
2019/20	195.52	151.68	681.95
Mean	173.50	168.61	436.35
SD	55.75	51.31	198.03
CV	32.13	30.43	45.38

Source: Appendix- VIII

Figure 6. Loan loss provision to non-performing loan ratio

Table 6 and Figure 6 present that the loan loss provision to non-performing loan over the ten year study period. The ratio of NABIL ranges the highest of 284.04 percent in 2017/18 and lowest ratio is 125.71 percent in 2012/13. Similarly, the ratio of NIBL ranges the highest of 261.21 percent in 2015/16 and lowest ratio is 89.12 percent in 2011/12. Likewise, the ratio of EBL ranges the highest of 681.95 percent in 2019/20 and lowest ratio is 186.81 percent in 2013/14. The mean loan loss provision to non-performing loan of NABIL, NIBL and EBL are 173.50 percent, 168.61 percent and 436.35 percent respectively. EBL has the highest ratio signifies that the bank is safeguarded against future contingencies but it reduces profit. But it can be said that

NABIL, NIBL and EBL are really doing well in NPL management. The standard deviation of NABIL, NIBL and EBL are 55.75, 51.31 and 198.03 respectively. It indicates that NIBL has the lowest risk among them. By measuring CV, NIBL is the most uniform in the ratios among them since NIBL has least CV of 30.43 percent.

4.1.2 Profitability ratios

Profitability ratio is one of the main indicators to analyzing the financial performance of a firm. It calculates to measure the earning performance and operational efficiency of the bank. A bank should be able to produce adequate profit on each rupee of investment, if investments do not generate sufficient profits, it would be very difficult for the bank to cover operating expenses and interest charges. The profitability of the bank should also be evaluated in term of its investment in assets and in term of capital contributed by creditors.

4.1.2.1 Return on total assets ratio (ROA)

This ratio is related to net profit after tax (NPAT) and total assets. How efficiently the assets of a firm will able to generate more profit are measured by this ratio. This ratio is calculated by dividing NPAT by Total Assets. This ratio provides the foundation necessary for a company to deliver a good return on equity.

Table 7

Return on Total Assets

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	2.30	2.02	2.01
2011/12	2.67	1.58	1.95
2012/13	3.03	2.62	2.24
2013/14	2.66	2.25	2.20
2014/15	1.81	1.88	1.59
2015/16	2.21	1.97	1.52
2016/17	2.57	2.06	1.72
2017/18	2.36	2.13	1.78
2018/19	2.11	1.79	1.80
2019/20	1.46	1.19	1.36
Mean	2.32	1.95	1.82
SD	0.46	0.38	0.29
CV	19.69	19.69	15.81

Source: Appendix- IX

Figure 7.Return on total assets

Table 7 and Figure 7 reveal that the return on assets of the sample banks over the ten year study period. The ratio of NABIL ranges the highest of 3.03 percent in the fiscal year 2012/13 and the lowest of 1.46 percent in the fiscal year 2019/20. Similarly, the ratio of NIBL ranges the highest of 2.62 percent in the fiscal year 2012/13 and the lowest of 1.19 percent in the fiscal year 2019/20. Likewise, the ratio of EBL ranges the highest of 2.24 percent in the fiscal year 2012/13 and the lowest of 1.36 percent in the fiscal year 2019/20. The mean ratio of NABIL, NIBL and EBL are 2.32 percent, 1.95 percent and 1.82 percent respectively. It indicates that, NABIL could manage their overall operations due to highest ratio among them. The standard deviation of NABIL, NIBL and EBL are 0.46, 0.38 and 0.29 respectively. It indicates that EBL has the lowest risk among them. By measuring coefficient of variation, EBL is the most uniform in the ratios since it has highest CV i.e. 15.81 percent among them.

4.1.2.2 Return on equity ratio (ROE)

Total shareholder's equity consists of preference share capital, ordinary share capital, share premium and reserve and surplus less accumulated losses. This ratio can be computed as Net profit after tax (NPAT) divided by average total shareholder'sequity.

Table 8

Return on equity

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	29.30	22.81	29.90
2011/12	31.02	17.17	26.12
2012/13	33.17	27.26	30.47
2013/14	30.36	24.48	28.40
2014/15	22.07	20.01	22.84
2015/16	24.31	15.66	20.32
2016/17	25.63	16.65	17.38
2017/18	19.34	14.71	16.00
2018/19	18.28	13.00	17.33
2019/20	13.39	8.92	13.50
Mean	24.69	18.07	22.23
SD	6.42	5.59	6.20
CV	25.99	30.94	27.92

Source: Appendix- X

Figure 8.Return on equity

Table 8 and Figure 8 present the result of return on equity of the sample banks. The ratio of NABIL ranges the highest of 33.17 percent in the fiscal year 2012/13 and the lowest of 13.39 percent in the fiscal year 2019/20. Similarly, the ratio of NIBL ranges the highest of 24.48 percent in the fiscal year 2013/14 and the lowest of 8.92 percent in the fiscal year 2019/20. Likewise, the ratio of EBL ranges the highest of 30.47 percent in the fiscal year 2012/13 and the lowest of 13.50 percent in the fiscal year 2019/20. The mean ratio of NABIL, NIBL and EBL are 24.69 percent, 18.07 percent and 22.23 percent respectively. This indicates that the return on equity for the NABIL

is the best or most effective management in earning profit among them. The standard deviation of NABIL, NIBL and EBL are 6.42, 5.59 and 6.20 respectively. It indicates that NIBL has the lowest risk among them.Co-efficient of variation indicates the fluctuating trend or measuring the uniformity of the banks which is 25.99 percent, 30.94 percent and 27.92 percent for NABIL, NIBL and EBL respectively. That's why, NABIL is the most uniform in the ratios among them.

4.1.2.3 Net profit to loan and advances ratio

Net Profit reveals the performance of bank. It shows efficiency of management. It shows the capacity of management has been able to utilize deposits. Net profit increment plays vital role of the bank. The ratio of net profit to total loan and advances reveals profit in comparison to total loan and advance disbursed.

Table 9

Net profit to loan and advance ratio

(In percent)

Fiscal Year	NABIL	NIBL	EBL
2010/11	3.52	2.86	3.00
2011/12	4.06	2.50	3.04
2012/13	4.79	4.13	3.39
2013/14	4.24	3.73	3.26
2014/15	3.20	2.96	2.89
2015/16	3.70	2.98	2.55
2016/17	4.02	2.98	2.60
2017/18	3.50	3.03	2.74
2018/19	3.17	2.61	2.73
2019/20	2.25	1.73	2.11
Mean	3.65	2.95	2.83
SD	0.70	0.65	0.37
CV	19.13	22.05	13.12

Source: Appendix- XI

Table 9 and Figure 9 depict that the net profit to loan and advance over the ten year study period. The ratio of NABIL ranges the highest of 4.79 percent in the fiscal year 2012/13 and the lowest of 2.25 percent in the fiscal year 2019/20. Similarly, the ratio of NIBL ranges the highest of 4.13 percent in the fiscal year 2012/13 and the lowest of 1.73 percent in the fiscal year 2019/20. Likewise, the ratio of EBL ranges the highest of 3.39 percent in the fiscal year 2012/13 and the lowest of 2.11 percent in the fiscal year 2019/20.

The mean ratio of NABIL, NIBL and EBL are 3.65 percent, 2.95 percent and 2.83 percent respectively. NABIL has the highest ratio among them. So, NABIL is best performance among the sample banks. In other word, NABIL has effective decision-making by senior management, effective credit review process and success to monitor borrowers or collateral values.The standard deviation of NABIL, NIBL and EBL are 0.70, 0.65 and 0.37 respectively. It indicates that EBL has the lowest risk among them.By measuring coefficient of variation, EBL is the most uniform in the ratios since it has the lowest CV 13.12 percent.

Figure 9.Net profit to loan and advance ratio

4.2 Correlation analysis

In this section, the correlation between the dependent variables and the independent variables havebeen presented and analyzed. Correlation between two variablesmeasures the degree of linear association between them. To find the association of the independent variables with dependent variables Pearson ProductMoment of Correlation Coefficient was used in this study. Correlation coefficient between twovariables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship)and a correlation coefficient of zero, indicates that there is no linear relationship between the twovariables. For this study, loan and advance, non-performing loan, loan loss provisions are the dependent variables and net profit is the independent variable.

Table 10

Pearson correlation coefficients of study variables

	LA	NPL	LLP	NP
LA	1			
NPL	.466** (.009)	1		
LLP	.719** (.000)	.924** (.000)	1	
NP	.848** (.000)	.287 (.125)	.480** (.007)	1

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

Source: Appendix-XII

Table 4.9 reveals the correlation test between both dependent and independent variables using correlation coefficient matrix. The correlation test shows that loan and advance (LA) has significant relation with non-performing loan (NPL) in 1 percent level of significance with correlation coefficients 0.466 which means that there is moderate degree of positive correlation between loan and advance and non-performing loan. At the same time, loan and advance (LA) has significant relation with loan loss provision (LLP) and net profit (NP) in 1 percent level of significance. Likewise, there is insignificant positive correlation between non-performing loan and net profit i.e. 0.287. The correlation matrix also shows that non-performing loan has significant positive correlation with loan loss provision in 1 percent level of significance. Similarly, correlation between loan loss provision and net profit is 0.480 which is also 1 percent level of significance.

4.3 Regression analysis

It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable (net profit) and independent variables (loan & advance, non-performing loan, loan loss provision).

Table 11

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890[a]	.792	.768	441.34540	.953

a. Predictors: (Constant), LLP, LA, NPL
b. Dependent Variable: NP

Source: Appendix-XIII

The multiple regressions co-efficient R square is a summary measure that tells how well the sample regression line fits the data. Typically, however, R^2 lies between 0 and 1 extreme value. The fit of the model is said to be "better" the closer is R^2 to 1. In other word, the R Square statistic tells us the proportion of variance in the dependent variable that is accountedfor by the independent variables. In this case, the model fits (accounts) for 79.2 percent of the variance inthe dependent variable, Net profit. The adjusted R Square is higher, indicating 76.8 percent of thevariance is accounted for by the model. The strength of variables relationship (multiple correlation co-efficient) is based on the value of R statistic. In this study, the R statistic is 0.890, indicatedthat there is a very strong relationship between study variables. This implies that the net profit (NP) was perfectly influenced by its independent variables. Standard error of estimate is flawlesslyassociated with regression analysis. The Durbin-Watson statistic is used to test for independent of residuals or auto correlation. The value of the Durbin Watson statistic ranges from 0 to 4. As a general rule, the residuals are independent if the Durbin-Watson statistic is approximately 2, and an acceptable range is between 1.50 and 2.50. In this study, Durbin-Watson is 0.953, not close to 2 indicates that there is problem of auto correlation in the regression model.

Table 12

Regression coefficient of independent variables on net profit

Variables	**Coefficients**	**t-statistics**	**p-value**	**Collinearity Statistics**	
				Tolerance	**VIF**
(Constant)	510.246	2.550	.017		
LA	.034	7.020	.000	.215	4.650
NPL	.756	2.167	.040	.065	15.341
LLP	-.932	-2.679	.013	.040	24.859

Dependent Variable: NP

Source: Appendix-XIII

Table 4.11 presents the regression coefficient of independent variables loan & advance, non-performing loan, loan loss provision of sample banks and the intercept value of dependent variable net profit. P-value indicates at what percentage or precession level of each variable is significant. Tolerance indicates the percent of variance in the independent variable that cannot beaccounted for by the other independent variable while variance inflation factor (VIF)is the inverse of tolerance. It shows that tolerance values ranged between0.040 and 0.215 with corresponding VIF

values ranging between 4.650and 24.859. Since tolerance values were not above 0.1 and VIF below 10. That's why; there is multicollinearity in the model.

The results of regression model table 4.11 indicated that the relationship between loan and advance (LA) has a positive relationship with net profit by a coefficient estimate of 0.034. This means that holding otherindependent variables constant and when one unit increases in loan and advance, as a result it increases net profit of the banks by0.034and the p value of loan and advance (LA) is 0.000 discloses that itis statistically significant at 1 percent level of significance. Hence, this is significant positive relationship between loan and advance and net profit.

In accordance with the regression result of non-performing loan (NPL) has a negative relationship with net profit by a coefficient estimate of 0.756. This means that holding otherindependent variables constant and when one unit increases in non-performing loan (NPL), as a result it increases net profit of sample banks by0.756and the p value of non-performing loan is 0.04.Testing in the 5 percent significance level p-value is higher and null hypothesis is rejected concluding that non-performing loan do have statistically significant influence on the net profit of sample banks.

According to the regression result of loan loss provision (LLP) has a negative relationship with net profit by a coefficient estimate of -0.932. This means that holding other independent variables constant and when one unit increases in loan loss provision, consequently it decreases net profit (NP) of the banks by 0.932and the p value of loan loss provision (LLP) is 0.013reveals that it is statistically insignificant at 5 percent level of significance. Accordingly, the result supports the working hypothesis that loan loss provisions have negative and statistically insignificant effect on profitability of sample banks.

4.4 Discussion of the findings

On the basis of above analysis of data, the study has following findings.

1. It is found that the average loan loss provision to loan & advance ratio of NABIL, NIBL and EBL are 2.24 percent, 2.68 percent and 1.58 percent respectively. Here, average loan loss provision to loan and advance ratio of NIBL is the highest among them. NIBL has huge amount to be made for provision for loan losses. Therefore, NIBL has not been able to earn a profit from the point of view average. But these three banks can be managed and bring them below 5

percent by managing loan properly in final year. The standard deviation of NABIL, NIBL and EBL are 0.52, 0.84 and 0.32 respectively. It indicates that EBL has the lowest risk among them. By measuring coefficient of variation, EBL is the most uniform in the ratios among them since EBL has least CV of 19.98 percent.

2. In average, the non-performing loan to loan and advance ratio of NABIL, NIBL and EBL are 1.48 percent, 1.82 percent and 0.47 percent respectively. EBL has the lowest NPL ratio among them thus EBL performing good or maintaining their NPLs perfectly which shows EBL has lowest credit risk among them. The standard deviation of NABIL, NIBL and EBL are 0.71, 0.97 and 0.29 respectively. It indicates that EBL has the lowest risk among them. By measuring coefficient of variation, NABIL is the most uniform in the ratios among them since NABIL has least CV of 47.77 percent.
3. The average loan loss provision to non-performing loan of NABIL, NIBL and EBL are 173.50 percent, 168.61 percent and 436.35 percent respectively. EBL has the highest ratio signifies that the bank is safeguarded against future contingencies but it reduces profit. But it can be said that NABIL, NIBL and EBL are really doing well in NPL management. The standard deviation of NABIL, NIBL and EBL are 55.75, 51.31 and 198.03 respectively. It indicates that NIBL has the lowest risk among them. By measuring coefficient of variation, NIBL is the most uniform in the ratios among them since NIBL has least CV of 30.43 percent.
4. The result also reveals that the average return on assets of NABIL, NIBL and EBL are 2.32 percent, 1.95 percent and 1.82 percent respectively. It indicates that, NABIL could manage their overall operations due to highest ratio among them. The standard deviation of NABIL, NIBL and EBL are 0.46, 0.38 and 0.29 respectively. It indicates that EBL has the lowest risk among them. By measuring coefficient of variation, EBL is the most uniform in the ratios since it has highest CV i.e. 15.81 percent among them.
5. This study found that the return on equity of NABIL, NIBL and EBL are 24.69 percent, 18.07 percent and 22.23 percent respectively. This indicates that the return on equity for the NABIL is the best or most effective management in earning profit among them. The standard deviation of NABIL, NIBL and EBL are 6.42, 5.59 and 6.20 respectively. It indicates that NIBL has the lowest risk

among them. Coefficient of variation indicates the fluctuating trend or measuring the uniformity of the banks which is 25.99 percent, 30.94 percent and 27.92 percent for NABIL, NIBL and EBL respectively. That's why; NABIL is the most uniform in the ratios among them.

6. Finding shows that the average net profit to loan and advance ratio of NABIL, NIBL and EBL are 3.65 percent, 2.95 percent and 2.83 percent respectively. NABIL has the highest ratio among them. So, NABIL is best performance among the sample banks. The standard deviation of NABIL, NIBL and EBL are 0.70, 0.65 and 0.37 respectively. It indicates that EBL has the lowest risk among them. By measuring coefficient of variation, EBL is the most uniform in the ratios since it has the lowest CV 13.12 percent.
7. The correlation test shows that loan and advance (LA) has significant relation with non-performing loan (NPL) in 1 percent level of significance with correlation coefficients 0.466 which means that there is moderate degree of positive correlation between loan and advance and non-performing loan. At the same time, loan and advance (LA) has significant relation with loan loss provision (LLP) and net profit (NP) in 1 percent level of significance. Likewise, there is insignificant positive correlation between non-performing loan and net profit i.e. 0.287.
8. The correlation matrix also shows that non-performing loan has significant positive correlation with loan loss provision in 1 percent level of significance. This was consistent with the findings of Berrios(2013)but opposite to the findings of Francis (2014)oncommercial banks in KenyaSimilarly, correlation between loan loss provision and net profit is 0.480 which is also 1 percent level of significance.
9. In this study, the model fits (accounts) for 79.2 percent of the variance in the dependent variable, Net profit. The adjusted R Square is higher, indicating 76.8 percent of the variance is accounted for by the model. In this study, the R statistic is 0.890, indicated that there is a very strong relationship between study variables. This implies that the net profit (NP) was perfectly influenced by its independent variables. At the same time, Durbin-Watson is 0.953, not close to 2 indicates that there is problem of auto correlation in the regression model.
10. It shows that tolerance values ranged between 0.040 and 0.215 with corresponding VIF values ranging between 4.650 and 24.859. Since tolerance

values were not above 0.1 and VIF below 10. That's why, there is multicollinearity in the model.

11. The relationship between loan and advance (LA) has a positive relationship with net profit by a coefficient estimate of 0.034. This means that holding other independent variables constant and when one unit increases in loan and advance, as a result it increases net profit of the banks by 0.034 and the p value of loan and advance (LA) is 0.000 discloses that it is statistically significant at 1 percent level of significance. Hence, this is significant positive relationship between loan and advance and net profit. A positive and significant association between bank profitability and loan and advance has been found in previous study (Alshatti, 2015).
12. In accordance with the regression result of non-performing loan (NPL) has a negative relationship with net profit by a coefficient estimate of 0.756. This means that holding other independent variables constant and when one unit increases in non-performing loan (NPL), as a result it increases net profit of sample banks by 0.756 and the p value of non-performing loan is 0.04. This result is consistent with the results identified by (Dhungana&Pradhan, 2017). This means testing in the 5 percent significance level p-value is higher and null hypothesis is rejected concluding that non-performing loan do have statistically significant influence on the net profit of sample banks.
13. According to the regression result of loan loss provision (LLP) has a negative relationship with net profit by a coefficient estimate of -0.932. Finding goes in line with the literature of Ifeanyi and Francis (2017) concluded that loan loss provisions have negative and statistically insignificant effect on profitability of sample banks.

CHAPTER V

SUMMARY AND CONCLUSION

This final chapter discusses thefindings of summary, conclusions and recommendations. The major findings are drawn from above analysis of data and conclusions are also drawn. Lastly, based on major findings and conclusions, recommendations have been provided.

5.1 Summary

Banks provide the required capital to the economy in the form of loan and advances which might have some probability to fail to be paid back which is termed as credit risk, the chance that a loan will not be repaid timely. Hence the main concern of the banks is credit risk and its management as credit or loans and advances are the main source of income for them. This study therefore seeks to investigate the impact of credit risk management on profitability of banks in Nepal.The other specific objectives are to analyze the credit efficiency and profitability position of NABIL, NIBL and EBL, to examine the relationship among loan and advances, non-performing loan, loan loss provision and net profit of sample banks and to analyze the impact of loan and advances, non-performing loan, loan loss provision on net profit of sample banks.

Relevant thesis, journals, articles, related websites etc. are also used for this research. Similarly in third chapter, research methodologies here signifies the research design, sources of data, data collection technique, data collection methods and tools and techniques employed etc. for this purpose descriptive and analytical research design was adopted. Out of total population of twenty seven commercial banks, three banks are taken as sample using random sampling method. Here three major banks NIBL, EBL and NABIL are selected from private banks. Annual reports and other publications from the basis of secondary data are used. The secondary data has been collected mainly through the loan department and the annual reports of the banks, covering ten year periods, i.e. from the fiscal year 2010/11 to 2019/20.

The data collected from various sources are recorded systematically and presented in the appropriate forms of the tables, charts and appropriate mathematical, statistical, financial, graphical tools have been applied to analyze the data. This study also used

multiple regression analysis. From the above analysis sample banks have managed loans as well as the nonperforming loans. The correlation analysis shows that loan and advance (LA) has significant relation with non-performing loan (NPL) in 1 percent level of significance with correlation coefficients 0.466 which means that there is moderate degree of positive correlation between loan and advance and non-performing loan. At the same time, loan and advance (LA) has significant relation with loan loss provision (LLP) and net profit (NP) in 1 percent level of significance. However, there is insignificant positive correlation between non-performing loan and net profit. The result found that there is significant impact of loan and advance, non-performing loan and loan loss provision on profitability of sample banks.

5.2 Conclusion

Based on major findings, it can be concluded that NIBL is the most successful in mobilizing its collected deposits as loan and advances among the sample banks. Loan and total ratio is same thing. At the same time, non-performing loan to loan and advance ratio it has been concluded that lending policy of EBL is sound and effective among them. Loan recovery process, efficient management and in depth study are the main causes of low NPL level of EBL. Similarly, from the view point of loan loss provision to loan and advance it has been concluded that the EBL has the best quality of assets in total volume of loan and advances among them. NABIL's profit earning capacity on loan and advances and working fund is the best among three banks. NABIL could manage their overall operations of ROA due to higher ratio than NIBL and EBL at the meantime, return on equity for the NABIL is the best or most effective management in earning profit among them.

After analyzing correlation analysis, it can be concluded that loan and advance (LA) has significant relation with non-performing loan (NPL), loan and advance (LA) has significant relation with loan loss provision (LLP) and net profit (NP) in 1 percent level of significance. Likewise, there is insignificant positive correlation between non-performing loan and net profit. The correlation matrix also shows that non-performing loan has significant positive correlation with loan loss provision in 1 percent level of significance. As regards regression analysis, it can be also concluded that there is significant impact of loan and advance, non-performing loan and loan loss provision on profitability of sample banks. Hence, a good credit risk management of the sample banks can be expected in the future.

5.3 Implications

On the basis of major findings drawn in the fourth chapter and the conclusions drawn in this chapter, the following recommendations have been provided for the enhancement of credit risk management of NIBL, EBL and NABIL.

1. In this analysis, NIBL's loan and advances to total deposit ratio is the highestamong them. So, it is recommended NABIL and EBL should follow liberal policy, invest more and more percentage of total deposit in loan and advances and maintain more stability on the credit policy.
2. Commercial banks have to maintain certain percentage as loan loss provision on the basis of the nature of loan. If loan loss provision is higher, it may decrease the performance of bank. The ratio of loan loss provision to non-performing loan of EBL is the highest in among them. That's why, EBL is recommended to decrease this ratio from every possible way.
3. EBL has the lowest non-performing loan to loan & advances ratio than among the sample banks. Therefore, EBL performing good or maintaining their NPLs perfectly which shows EBL has low credit risk among them. So, it isrecommended NABIL and NIBL to be more cautious and realistic while granting loans and advances. After advancing loans there should be regular supervision and follow up for proper utilization of loan.
4. In this study, profitability ratio of NABIL is the best from the view of return among the sample banks. So, it is recommended NIBL and EBL to increase its interest earning capacity by investing more funds on loan and advance and collect interests in the effective way.
5. The bank should continue to diversify its lending activities and should allocate more funds to the productive sectors of the economy. Private sector businesses should be prioritized and supported accordingly.
6. Since regression analysis found that impact of loan and advance on net profit is significant of sample banks. However, these banks may decrease their NPL in large scale with proper manner, which ultimately helps to increase profit.
7. Nepalese commercial banks should work in collaboration with credit reference bureau in the country to thoroughly investigate the past credit worthiness records of loan applicants so as to reduce the rate of default.

8. Credit risk monitoring and supervision efforts should be intensified by NABIL,NIBL and EBL. The banks should ensure that credit officers perform periodic follow-ups on borrowers to ensure that loans are used for the intended purpose.

REFERENCES

Abayomi, A.A. Joseph, N.T. &Tolulope, I.G. (2018).The evaluation of credit management on the performance of small-scale enterprises in Nigeria.*International E-Journal of Advances in Social Sciences, 4*(10), 130-138.

Afriyie, H., &Akotey, J. (2011).Credit risk management and profitability of selected rural banks in Ghana. Catholic University College of Ghana,pp 1-18.

Alshatti, A. S. (2015). The effect of credit risk management on financial performance of the Jordanian commercial banks.*Investment Management and Financial Innovations,12*(1), 338-345.

Baidya, S. (1999).*Banking management.* Kathmandu: Taleju Publication Pvt. Ltd.

Bajracharya,B. S. (1991). *Monetary policy & deposit mobilization in Nepal*. Kathmandu: RajatjayantiSmarika, RBB.

Batra,M.,&Dass,N.(2003).*Financialmanagement.* NewDelhi:Vikash Publishing House.

Berrios, M. R. (2013). The relationship between bank credit management and profitability and liquidity.*The International Journal of Business and Finance Research,7*(3), 105-118.

Bessis, J. (2003). *Risk management in banking* (2nd ed.).New York: John Wiley & Sons, Chichester.

Bhandari, D.R. (2003).*Banking and insurance management.* Kathmandu: AyushPrakashan.

Boot, A. W. A., &Milboum,T.T.(2001).*Creditratingsascoordination mechanisms.* Amsterdam: Bookman International B.V.

Chhabra, T. N., &Taneja, P. L. (1991).*Law & practice of banking.* New Delhi: J.C. Kaur to DhanaptRai and Sons.

Dahal, B., &Dahal, S. (2002).*A hand book to banking.* Kathmandu: Ashmita Books and Publishers.

Daniel, B. K., Ezekiel, T.J. Musa, A.Y., Muneer, J. &Bashiru, M. K. (2018).Impact of efficient credit management on profitability of commercial banks in Sierra Leone.*Open Journal of Business and Management,34*(6), 139-150.

Dhungana, N. T. &Pradhan, R. S. (2017).Effect of bank lending on inflation in Nepal.*Journal of Advanced Academic Research,4*(2), 27-43.

Ejoh, N., Okpa, I., &Inyang, E. (2014). The relationship and effect of credit and liquidity risk on bank default risk among deposit money banks in Nigeria. *Research Journal of Finance and Accounting*, *5*(16), 142-150.

Eva, C., &Jaroslav, B. (2014). Assessment of credit risk approaches in relation with competitiveness increase of the banking sector. *International Journal of Research in Commerce, Economics and Management,1*(1), 141-156.

Everest Bank Ltd. (2019/20).Annual report.Retrieved from https://www. everestbankltd.com/financialreports/annual-report/.

Francis, O. A. (2014). Credit risk management practices of commercial banks in Kenya.*European Journal of Business and Management,6*(34), 21-61.

Gautam, D. (2004). *Financial management.*New York: Blackwell Publishing Limited.

Gitman, L.J. (1990). *Fundamentals of statistics.* New Delhi: Harper and Row Publishing Publishers.

Gupta, S. C. (2000). *Fundamental of statistics.* New Delhi: Himalayan Publishing House Private Limited.

Honey, D., Tashfeen, R., Farid, S., &Sadiq, R. (2019). Credit risk management: evidence of corporate governance in banks of Pakistan. *Journal of Finance and Accounting Research, 1*(1), 1-18.

Horcher, K. A., (2005). *Essentials of financial risk management*. Hoboken: John Wiley &Sons, Incorporated.

Hosna, A.,&Manzura, B. (2009) Credit risk management and profitability in commercial banks in Sweden.University of Gothenburg, Graduate School of Business, Economics and Law, Master of Science in Accounting.

Ifeanyi, O. N., & Francis, C. O. (2017).Effect of credit management on profitability of deposit money banks in Nigeria.*International Journal of Banking and Finance Research, 3*(2), 137-160.

John, B. (1998). *Managing credit risk.* New York: John Wiley & Sons Ltd.

Johnson, E. (1940). *Commercial bank management.* New York: The Dryden Press Private Limited.

Kargi, H.S. (2011). Credit risk and the performance of Nigerian banks.AhmaduBello University, Zaria.

Keeton, W. R., & Morris, C. S. (1987).*Whydobanksloanlossesdiffer?*.New Work: *Harper and Raw Publisher.*

Kolapo, T.F.,Ayeni, R.K.,&Oke, M.O. (2012). Credit risk and commercial banks' performances in Nigeria: a panel model approach.*Australian journal of business and management research, 2*(2), 31-38.

Manandhar, M. (2015).*Credit management in commercial banks of Nepal: With reference to SCBNL, NABIL, EBL and HBL* (Unpublished Master's Thesis). Tribhuwan University, Kathmandu, Nepal.

Michel, C., Dan, G., & Robert, M. (2001).*Risk management.* New York: MC Grawhill.

Moti, H. O, Masinde, J.S., &Mugenda, N.G., (2012).Effectiveness of credit management systems on loans performance: Empirical evidence from micro finance sector in Kenya. *International Journal of Business, Humanities and Technology 2*(16),99-108.

Nabil Bank Limited (2019/20).Annual report.Retrieved from: https://www.nabilbank.com/component/investor/?view=doclist&catid=157&doctype=Annual%20Reports.

Nepal Investment Bank Limited. (2019). Introduction.Retrieved from: https://www.nibl.com.np/index.php?option=com_content&view=article&id=1&Itemid=9.

Nepal Investment Bank Ltd. (2019/20).Annual report.Retrieved from https://www.nibl.com.np/index.php?option=com_content&view=article&id=16&Itemid=24.

Nepal Rastra Bank. (2018). Risk Management Guidelines. Kathmandu: NRB. Retrieved from: https://www.nrb.org.np/bfr/directives/Guidelines.

Nwankwo, G.O. (1991). *Risk analysis and management, principles and practice.* Lagos: Malt House Press Ltd.

Owojori, A.A., Akintoye, I. R.,&Adidu,F.A. (2011). The challenge of risk management in Nigerian banks in the post consolidation era. *Journal of Accounting and Taxation, 3*(2), 23- 31.

Pandey, I. M. (1979).*Financial management.* New Delhi: Vikash Publishing House Private Limited.

Pant, P. R. (2016). *Social science research and thesis writing.* Kathmandu: Buddha Publications Pvt. Ltd.

Pathak, A. (2017). *Study of credit management of joint venture commercial banks: With reference to BOK and NIBL* (Unpublished Master's Thesis). Tribhuwan University, Kathmandu, Nepal.

Pradhan, S., & Shah, A. (2019).Credit risk management of commercial banks in Nepal.*Journal of Business and Social Sciences Research, 4*(1), 27-37.

Rakhimzhanova, K., Makysh, S., &Saparova, B. (2020). Problem loan management in the countries of the Eurasian Economic Union.*Entrepreneurship and Sustainability Issues, 7*(4), 3286-3308.

Salas, V., &Saurina, J. (2002). Credit risk in two institutional regimes: Spanish commercial and savings banks.*Journal of Financial Services Research, 22*(3), 203-224.

Saundeers, D. (2005). Financial markets and institutions: An introduction to the risk management approach. *McGraw Hill Pub, 1*(2), 36-49.

Shafiq, A., & Nasr, M. (2010). Risk management practices followed by the commercial banks in Pakistan.*International Review of Business Research Papers, 6*(2), 308-325.

Shakya, M. (2015).*A comparative study on credit management of Nepal Bank Ltd.* (Unpublished Master's Thesis). Tribhuwan University, Kathmandu, Nepal.

Shekhar, K.C. (1997).*Banking theory and practice.* New Delhi: Vikash Publishing House Pvt. Ltd.

Shrestha, A. (2016). *A comparative study on credit management of commercial banks: With reference to NIB &NIC Bank* (Unpublished Master's Thesis). Tribhuwan University, Kathmandu, Nepal.

Shrestha, M. S. (2004). *Fundamentals of banking,* (2nd ed.). Kathmandu: Buddha Academic Publication House.

Singh, A. (2013). Performance of credit risk management in Indian commercial banks.*International Journals of Management of Business Research*,*5*(3), 149-156.

Sinkey, J.F. (2002). *Commercial bank and financial management* (8th ed.). New Jersey: Printice Hall Inc.

Smith, G. (1976). *Commercial banking.* New York: Prentice Hall.

Tawiah, A. A., & Asante, K. (2019). Credit management in microfinance institutions: A case study of some selected microfinance institutions in the Ashanti region of Ghana. *Research Journal of Finance and Accounting*, *9*(2), 16-24.

Thapa, R. (2014). *A CASE STUDY ON CREDIT MANAGEMENT of Everest Bank Limited* (Unpublished Master's Thesis). Tribhuwan University, Kathmandu, Nepal.

Uwuigbe , U., Uwuigbe, O. R., &Oyewo, B. (2015)).Credit management and bank performance of listed banks in Nigeria.*Journal of Economics and Sustainable Development*,*6*(2), 27-32.

Van Horne, J.C. (2000). *Financial management and policy.* New Delhi: Prentice World Bank.

Zhu, N., Wang, B. Yu, Z.Q., & Wu, Y.R. (2017). The effects of non-performing loans on dynamic network bank performance.*Journal of Banking and Finance,* 52(3), 61-64.

APPENDICES
APPENDIX – I
Data of Nepal Investment Bank Limited

(Rs. in million)

Particulars	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total Assets	58357	65756	73,153	86,174	104345	129783	150818	171894	185842	203024
Total Deposit	50138	57011	62,429	73,831	90,631	108,627	125669	140328	152183	168824
Loan and Advance	41096	41637	46,400	52,019	66,219	85461	104625	120826	127141	140002
Cash in Bank Balance	8140	11804	13,253	16,745	14,315	13,026	17,898	17999	18946	20473
Cash Balance With NRB	4009	8503	8753	12,653	8993	7767	11383	12507	10861	14322
Total Liquid Fund	4281	3507	4766	4324	5322	5408	6555	5493	8085	6151
Cash in Hand	1719	1964	2173	2171	2661	2286	2478	2929	2613	2840
Non-performing Loan	395	1425	913	947	844	593	888	1665	3641	4199
Loan Loss Provision	792	1270	1300	1439	1471	1549	2059	2734	4328	6369
Total Investment	7423	10438	11435	15,384	21463	29227	25616	13742	17227	26332
Risk Weighted Assets	57994	62704	67995	79,777	98746	121867	156448	179259	197925	200791
Total Equity	5159	6050	7,021	7,926	9,807	16,288	18,707	24871	25579	27173
Net Profit	1177	1039	1914	1,940	1962	2551	3114	3659	3324	2423

(Source: Annual Reports of NIBL)

APPENDIX – II
Data of Nabil Bank Limited

(Rs. in million)

Particulars	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total Assets	58141	63193	73,241	87,275	115986	127300	140332	169076	201139	237680
Total Deposit	49696	55024	63,610	75,389	104,238	110,267	118896	135980	164373	193035
Loan and Advance	38034	41606	46,370	54,692	65,502	76106	89877	113625	133558	153890
Cash in Bank Balance	2436	4276	5,882	9,993	16,004	10,264	13,091	13951	10661	22809
Cash Balance With NRB	1474	3682	4789	7,068	12925	5826	10274	7372	8001	20021
Total Liquid Fund	3415	1420	2727	3663	3403	4828	2817	6579	4695	2788
Cash in Hand	745	1051	1140	1468	1820	1641	1637	6297	2566	2683
Non-performing Loan	690	1000	1015	1256	1221	889	728	614	985	1518
Loan Loss Provision	871	1262	1276	1511	1660	1624	1614	1744	2134	2968
Total Investment	13081	14049	16332	18,277	30972	36528	32594	18506	25461	33791
Risk Weighted Assets	48885	55273	63538	73,854	87766	104040	118828	143877	169954	192208
Total Equity	4567	5444	6,689	7,641	9,486	11,596	14,095	20586	23189	25856
Net Profit	1338	1689	2219	2,320	2094	2819	3613	3982	4239	3463

(Source: Annual Reports of NABIL)

APPENDIX – III
Data of Everest Bank Limited

(Rs. in million)

Particulars	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Total Assets	46236	55813	65741	70,445	99153	113885	116510	144,818	170077	185023
Total Deposit	41128	50006	57720	62,108	83094	93735	95094	116428	130177	144728
Loan and Advance	31058	35911	43393	47,572	54482	67955	77288	94183	112007	119069
Cash & Bank Balance	6123	10364	11215	13,171	25117	23117	21384	28037	30274	25590
Cash Balance With NRB	4706	8160	8205	9,446	17126	13356	14577	18,939	23305	19973
Total Liquid Fund	1417	2204	4297	3725	7991	9761	6807	9098	6969	5617
Cash in Hand	1049	1701	1723	2,050	2066	2515	3061	3370	3396	2416
Non-performing Loan	109	307	276	470	367	264	199	188	177	266
Loan Loss Provision	604	706	805	878	881	956	997	1129	1266	1814
Total Investment	7744	7864	9264	6504	15103	18199	11964	15552	21748	29193
Risk Weighted Assets	34584	41525	49834	56780	63451	79712	88930	110005	123391	132882
Total Equity	3114	4177	4828	5,457	6891	8514	11545	16135	17625	18637
Net Profit	931	1091	1471	1,550	1574	1730	2006	2582	3054	2516

(Source: Annual Reports of EBL)

APPENDIX -IV

Loan and Advance to Total Deposit Ratio

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	Loans & advances	Total Deposit	Ratio %	Loans & advances	Total Deposit	Ratio %	Loans & advances	Total Deposit	Ratio %
2010/11	38034	49696	76.53	41096	50138	81.97	31058	41128	75.52
2011/12	41606	55024	75.61	41637	57011	73.03	35911	50006	71.81
2012/13	46370	63610	72.90	46400	62429	74.32	43393	57720	75.18
2013/14	54692	75389	72.55	52019	73831	70.46	47572	62108	76.60
2014/15	65502	104238	62.84	66219	90631	73.06	54482	83094	65.57
2015/16	76106	110267	69.02	85461	108627	78.67	67955	93735	72.50
2016/17	89877	118896	75.59	104625	125669	83.25	77288	95094	81.28
2017/18	113625	135980	83.56	120826	140328	86.10	94183	116428	80.89
2018/19	133558	164373	81.25	127141	152183	83.54	112007	130177	86.04
2019/20	153890	193035	79.72	140002	168824	82.93	119069	144728	82.27
Mean			74.96			78.73			76.76
SD			6.07			5.56			6.02
CV			8.10			7.07			7.84

(Source: Appendix I, II and III)

APPENDIX -V

Loan and Advance to Total Assets Ratio

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	Loan & Advance	Total Assets	Ratio %	Loan & Advance	Total Assets	Ratio %	Loan & Advance	Total Assets	Ratio %
2010/11	38034	58141	65.42	41096	58357	70.42	31058	46236	67.17
2011/12	41606	63193	65.84	41637	65756	63.32	35911	55813	64.34
2012/13	46370	73241	63.31	46400	73153	63.43	43393	65741	66.01
2013/14	54692	87275	62.67	52019	86174	60.37	47572	70445	67.53
2014/15	65502	115986	56.47	66219	104345	63.46	54482	99153	54.95
2015/16	76106	127300	59.78	85461	129783	65.85	67955	113885	59.67
2016/17	89877	140332	64.05	104625	150818	69.37	77288	116510	66.34
2017/18	113625	169076	67.20	120826	171894	70.29	94183	144818	65.04
2018/19	133558	201139	66.40	127141	185842	68.41	112007	170077	65.86
2019/20	153890	237680	64.75	140002	203024	68.96	119069	185023	64.35
Mean			63.59			66.39			64.12
SD			3.28			3.57			3.91
CV			5.16			5.38			6.09

(Source: Appendix I, II and III)

APPENDIX -VI

Loan Loss Provision to Loan & Advance Ratio

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	Loan Loss Provision	Loan & Advance	Ratio %	Loan Loss Provision	Loan & Advance	Ratio %	Loan Loss Provision	Loan & Advance	Ratio %
2010/11	871	38034	2.29	792	41096	1.93	604	31058	1.94
2011/12	1262	41606	3.03	1270	41637	3.05	706	35911	1.97
2012/13	1276	46370	2.75	1300	46400	2.80	805	43393	1.86
2013/14	1511	54692	2.76	1439	52019	2.77	878	47572	1.85
2014/15	1660	65502	2.53	1471	66219	2.22	881	54482	1.62
2015/16	1624	76106	2.13	1549	85461	1.81	956	67955	1.41
2016/17	1614	89877	1.80	2059	104625	1.97	997	77288	1.29
2017/18	1744	113625	1.53	2734	120826	2.26	1129	94183	1.20
2018/19	2134	133558	1.60	4328	127141	3.40	1266	112007	1.13
2019/20	2968	153890	1.93	6369	140002	4.55	1814	119069	1.52
Mean			2.24			2.68			1.58
SD			0.52			0.84			0.32
CV			23.42			31.48			19.98

(Source: Appendix I, II and III)

APPENDIX -VII

Non-performing Loan to Loan and Advance Ratio

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	NPL	Loan & Advance	Ratio %	NPL	Loan & Advance	Ratio %	NPL	Loan & Advance	Ratio %
2010/11	690	38034	1.81	395	41096	0.96	109	31058	0.35
2011/12	1000	41606	2.40	1425	41637	3.42	307	35911	0.85
2012/13	1015	46370	2.19	913	46400	1.97	276	43393	0.64
2013/14	1256	54692	2.30	947	52019	1.82	470	47572	0.99
2014/15	1221	65502	1.86	844	66219	1.27	367	54482	0.67
2015/16	889	76106	1.17	593	85461	0.69	264	67955	0.39
2016/17	728	89877	0.81	888	104625	0.85	199	77288	0.26
2017/18	614	113625	0.54	1665	120826	1.38	188	94183	0.20
2018/19	985	133558	0.74	3641	127141	2.86	177	112007	0.16
2019/20	1518	153890	0.99	4199	140002	3.00	266	119069	0.22
Mean			1.48			1.82			0.47
SD			0.71			0.97			0.29
CV			47.77			53.35			62.34

(Source: Appendix I, II and III)

APPENDIX -VIII

Loan Loss Provision to Non-performing Loan Ratio

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	LLP	NPL	Ratio %	LLP	NPL	Ratio %	LLP	NPL	Ratio %
2010/11	871	690	126.23	792	395	200.51	604	109	554.13
2011/12	1262	1000	126.20	1270	1425	89.12	706	307	229.97
2012/13	1276	1015	125.71	1300	913	142.39	805	276	291.67
2013/14	1511	1256	120.30	1439	947	151.95	878	470	186.81
2014/15	1660	1221	135.95	1471	844	174.29	881	367	240.05
2015/16	1624	889	182.68	1549	593	261.21	956	264	362.12
2016/17	1614	728	221.70	2059	888	231.87	997	199	501.01
2017/18	1744	614	284.04	2734	1665	164.20	1129	188	600.53
2018/19	2134	985	216.65	4328	3641	118.87	1266	177	715.25
2019/20	2968	1518	195.52	6369	4199	151.68	1814	266	681.95
Mean			173.50			168.61			436.35
SD			55.75			51.31			198.03
CV			32.13			30.43			45.38

(Source: Appendix I, II and III)

APPENDIX -IX

Return on Total Assets

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	Net profit	Total Assets	Ratio %	Net profit	Total Assets	Ratio %	Net profit	Total Assets	Ratio %
2010/11	1338	58141	2.30	1177	58357	2.02	931	46236	2.01
2011/12	1689	63193	2.67	1039	65756	1.58	1091	55813	1.95
2012/13	2219	73241	3.03	1914	73153	2.62	1471	65741	2.24
2013/14	2320	87275	2.66	1940	86174	2.25	1550	70445	2.20
2014/15	2094	115986	1.81	1962	104345	1.88	1574	99153	1.59
2015/16	2819	127300	2.21	2551	129783	1.97	1730	113885	1.52
2016/17	3613	140332	2.57	3114	150818	2.06	2006	116510	1.72
2017/18	3982	169076	2.36	3659	171894	2.13	2582	144818	1.78
2018/19	4239	201139	2.11	3324	185842	1.79	3054	170077	1.80
2019/20	3463	237680	1.46	2423	203024	1.19	2516	185023	1.36
Mean			2.32			1.95			1.82
SD			0.46			0.38			0.29
CV			19.69			19.69			15.81

(Source: Appendix I, II and III)

APPENDIX -X

Return on Equity

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	Net profit	Total Equity	Ratio %	Net profit	Total Equity	Ratio %	Net profit	Total Equity	Ratio %
2010/11	1338	4567	29.30	1177	5159	22.81	931	3114	29.90
2011/12	1689	5444	31.02	1039	6050	17.17	1091	4177	26.12
2012/13	2219	6689	33.17	1914	7021	27.26	1471	4828	30.47
2013/14	2320	7641	30.36	1940	7926	24.48	1550	5457	28.40
2014/15	2094	9486	22.07	1962	9807	20.01	1574	6891	22.84
2015/16	2819	11596	24.31	2551	16288	15.66	1730	8514	20.32
2016/17	3613	14095	25.63	3114	18707	16.65	2006	11545	17.38
2017/18	3982	20586	19.34	3659	24871	14.71	2582	16135	16.00
2018/19	4239	23189	18.28	3324	25579	13.00	3054	17625	17.33
2019/20	3463	25856	13.39	2423	27173	8.92	2516	18637	13.50
Mean			24.69			18.07			22.23
SD			6.42			5.59			6.20
CV			25.99			30.94			27.92

(Source: Appendix I, II and III)

APPENDIX -XI

Net profit to Loan and Advance Ratio

(Rs. in million)

Fiscal Year	NABIL			NIBL			EBL		
	Net profit	Loan & Advance	Ratio %	Net profit	Loan & Advance	Ratio %	Net profit	Loan & Advance	Ratio %
2010/11	1338	38034	3.52	1177	41096	2.86	931	31058	3.00
2011/12	1689	41606	4.06	1039	41637	2.50	1091	35911	3.04
2012/13	2219	46370	4.79	1914	46400	4.13	1471	43393	3.39
2013/14	2320	54692	4.24	1940	52019	3.73	1550	47572	3.26
2014/15	2094	65502	3.20	1962	66219	2.96	1574	54482	2.89
2015/16	2819	76106	3.70	2551	85461	2.98	1730	67955	2.55
2016/17	3613	89877	4.02	3114	104625	2.98	2006	77288	2.60
2017/18	3982	113625	3.50	3659	120826	3.03	2582	94183	2.74
2018/19	4239	133558	3.17	3324	127141	2.61	3054	112007	2.73
2019/20	3463	153890	2.25	2423	140002	1.73	2516	119069	2.11
Mean			3.65			2.95			2.83
SD			0.70			0.65			0.37
CV			19.13			22.05			13.12

(Source: Appendix I, II and III)

APPENDIX -XII

Pearson Correlation Coefficients

Correlations

		LA	NPL	LLP	NP
LA	Pearson Correlation	1	.466**	.719**	.848**
	Sig. (2-tailed)		.009	.000	.000
	N	30	30	30	30
NPL	Pearson Correlation	.466**	1	.924**	.287
	Sig. (2-tailed)	.009		.000	.125
	N	30	30	30	30
LLP	Pearson Correlation	.719**	.924**	1	.480**
	Sig. (2-tailed)	.000	.000		.007
	N	30	30	30	30
NP	Pearson Correlation	.848**	.287	.480**	1
	Sig. (2-tailed)	.000	.125	.007	
	N	30	30	30	30

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

(Source: SPSS version 23)

APPENDIX -XIII

Multiple Regression Analysis of Sample Banks

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890[a]	.792	.768	441.34540	.953

a. Predictors: (Constant), LLP, LA, NPL

b. Dependent Variable: NP

(Source: SPSS version 23)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	510.246	200.059		2.550	.017		
	LA	.034	.005	1.353	7.020	.000	.215	4.650
	NPL	.756	.349	.759	2.167	.040	.065	15.341
	LLP	-.932	.348	-1.194	-2.679	.013	.040	24.859

a. Dependent Variable: NP

(Source: SPSS version 23)