

**RELATIONSHIP BETWEEN MACRO-ECONOMIC VARIABLES
AND PERFORMANCE OF COMMERCIAL BANKS OF NEPAL**

**A Thesis
Submitted to the Central Department of Economics,
Faculty of Humanities and Social Sciences,
Tribhuvan University, Kirtipur, Kathmandu, Nepal
in Partial Fulfillment of the Requirements for the Degree of
MASTER OF ARTS
in
ECONOMICS**

**By
SATYA RAJ SHARMA
Roll Number: 09/ 2016
T U Redg. No.: 6-2-327-646-2011
Central Department of Economics
Tribhuvan University
Kirtipur, Kathmandu, Nepal**

July, 2019

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Financial sector is an important area for economic development of any country. Commercial banks are the milestone of financial sector. Banking system is practically necessary for producing desirable effects in the country and uplifting the people's lifestyle. A bank collects money from those who have it to spray or who are saving it out of their income and it leads this money who requires . The relation between profitability and bank size is conflicting. Bank size is generally used to capture potential economies or diseconomies of scale in the banking sector suggest that the effects of a growing bank's size on its profitability might be positive up to a certain limit. Beyond this point, the impact of its size could be negative due to bureaucratic and others factors (Berger and Humphrey, 1992).

Performance of commercial bank in important in order to have the impact on the economy. For example, summarize in one paragraph found that the banks specific determinants (credit risk, liquidity risk, market risk, operating risk, ownership, concentration risk, macro economics variable), with the expectation of size affects the bank's profitability. The impact of its size could be negative due to bureaucratic and others factors. Hence the size and profitability relation might be expected to be non-linear. Meanwhile, some studies shows negative relation between bank size and profitability. Studies from Shaffer (2004) revealed that impact of bank size was negatively related to the profitability of Philippines banks, indicating a negative relation between bank profitability and bank size (Shaffer, 2004).

Among different financial institutions, commercial banks are the main players of banking institution. Commercial banks can be defined as the financial intermediaries that bridge the gap between surplus unit and deficit facing units. It is the financial institution which provides financial services that may be in the forms of accepting deposits, granting loans, providing technical advices, dealing with foreign currency, remitting funds and many more. Commercial banks are the milestone of financial institutions. Commercial banks are practically importance for the wellbeing the country and uplifting

the people's lifestyle. (Grigorian. and Manole, 2008), revealed that capital adequacy ratio has positive effects on profitability and there was negative impact of macro economics indicators on bank's profitability The association of Commercial banks and business cycle is important in order to appraise the soundness and steadiness of the banking sector ((Grigorian. and Manole, 2008). How the capital adequacy ratio is going to affects the performance of bank is the issue in the study. (Saleem and Rehman , 2012) Show positive relationship between liquidity and profitability (Grigorian. and Manole, 2008).

One of the important bank specific factors that determine the performance of commercial bank was management efficiency represented by operating profit to total income ratio significantly affects the performance of commercial banks. The management efficiency is positively related with the banks performance (Fawad and Taqadus, 2013) showed that the capital adequacy, assets quality and management efficiency significantly affects the performance of commercial bank. However, the effects on liquidity on the performance of commercial banks are not strong. The relationship of bank performance with capital adequacy and management efficiency was found to be positive and for assets quality the relationship was negative. This indicates that poor assets quality or high non-performing loans to total assets related to poor bank performance. The impact of its size could be negative due to bureaucratic and others factors. Banks are the institution whose debt usually refers to bank deposits are commonly accepted in final settlement of others peoples debts (Fawad and Taqadus, 2013).

Adopting the economic liberalization in the country in early 1990s, there has been tremendous growth in the number of private sector banks. The share of these banks on total deposits, loans, and total assets has been increasing gradually. The banks are becoming efficient in terms of capital, technologies, products and services and overall management. The competition in the market is getting tougher as the number of these institutions is increasing rapidly and the market size being the same. Therefore, it is felt necessary to strengthen their capacity in terms of product innovation, service delivery and public accountability. As at mid July 2018, the numbers of commercial banks in Nepal are twenty-eight in number (NRB, 2018). The public sector banks, which are three in numbers and have large branch networks throughout the country, have still got substantial share in the total assets of the industry.

With every investment decision, there is not only an anticipated return, but also a certain amount of risk associated with that return. The investment decision therefore, may be characterized as tradeoff between risk and return. It is generally assumed that the larger amount of risk, the larger the anticipated return must be to compensate for this risk. Just as the risk associated with various securities and assets varies widely, the ability and willingness to accept risk also varies substantially from investor to investor. This proposed study aims to look at the role of capital adequacy of the commercial banks in economic development, sustainable future for commercial banks with the maintenance of adequate capital.

1.2 Statement of Problems

In context of Nepal banking sector is an essential element and well functioning infrastructure for economic growth as well as development. A good banking system is supposed to mobilize savings from households and business in low cost of financing activities and channel funds to the most productive investment opportunities. Bank is monetary institutional vehicle for domestic resources mobilization of the country. Modern day bank's business is not confined in borrowing deposits and lending advances only, it performs a host of other financial activities which has immensely contributed to achieve industrial and commercial progress of every country.

With the prevailing economic recession in the country, there has been lower investment in the agriculture, manufacturing, industrial and financial sectors. Despite the better performance of commercial bank, there are still problem, which need to be resolved.

Every business form can take advantage through appropriate capital mix because long run profitability depends on its capital structure besides other factors. The depositors deposit their money in a bank for security of their money. Banking and financial statistics shows that the amount deposited in various banks of the country is Rs. 610,032.7 million by the end of FY 2016/17. But the question arises, if the bank go bankrupted, what will happen to the depositors of such money? Thus an adequate capital fund is required to safeguard the money of depositors.

NRB issued a set of directives to commercial banks consisting of eleven parts. Out of eleven directives, the directives no.1 has been issued for norms on capital adequacy to be

followed by commercial banks. The capital adequacy ratio is based on the total risk weighted assets. Capital adequacy is the core subject for long-term sustainability of any organization. It is an emerging topic in financial sector. It can play a vital role for the success of commercial banks. To bridge the gap of implementing and supervisory bodies for their effective results in performance, this research is conducted.

Due to differences in economic, political and financial situations, legal and other restrictions, government policies, risky business, management ownership and control and other environmental variables, provisions of capital adequacy may be different in different years.

Performance of the bank is mostly measured by their earning and how profitable they are. Profitability is simply the difference between total revenue and total cost. Thus the factors which affect commercial bank profitability would be those that affect the banks revenue and cost. Hence, the impact of the external and internal determinants of commercial bank profitability is analyzed with the view to show their impact on bank's revenue and costs. This is followed by the internal determinants of commercial bank profitability.

Fawad and Taqadus (2013), found that the banks specific determinants (credit risk, liquidity risk, market risk, operating risk, ownership, concentration risk, macro economics variable), with the expectation of size affects the bank's profitability. Fawad and Taqadus (2013), revealed that capital adequacy ratio has positive effects on profitability and there was negative impact of macro economics indicators on bank's profitability.

Habtamu (2013), showed that the capital adequacy, assets quality and management efficiency significantly affects the performance of commercial bank. However, the effects on liquidity on the performance of commercial banks are not strong. The relationship of bank performance with capital adequacy and management efficiency was found to be positive and for assets quality the relationship was negative. This indicates that poor assets quality or high non-performing loans to total assets related to poor bank performance. On the other hand, Klein (2013) showed that there exists the negative relationship between capital adequacy ratio and bank performance. How the capital

Adequacy ratio is going to affect the performance of bank is the issue in the study (Saleem and Rehman , 2012)) showed positive relationship between liquidity and profitability. Contrary to which (Goddard, Molyneux and Wilson, 2004)) revealed that bank that maintain high capital to assets or liquidity ratios tended to record relatively low profitability. Klein, (2013) documented that capital adequacy negatively impact bank profitability.

One of the important bank specific factors that determine the performance of commercial bank was management efficiency represented by operating profit to total income ratio significantly affects the performance of commercial banks. The management efficiency is positively related with the banks performance (Klein, 2013).

The relation between profitability and bank size is conflicting. Bank size is generally used to capture potential economies or diseconomies of scale in the banking sector. Sontakke and Tiwari (2013) suggest that the effects of a growing bank's size on its profitability might be positive up to a certain limit. Beyond this point, the impact of its size could be negative due to bureaucratic and others factors. Hence the size and profitability relation might be expected to be non-linear (Sontakke and Tiwari, 2013)). Meanwhile, some studies shows negative relation between bank size and profitability. Studies from Sontakke and Tiwari (2013), revealed that impact of bank size was negatively related to the profitability of Philippines banks, indicating a negative relation between bank profitability and bank size.

Prior Studies were carried out regarding the international comparison of developed countries and emerging country. So, the earlier studies have not analyzed many aspects of profitability of commercial bank to represent the entire market of Nepal. Bank specific and macro economics variables are related with the performance of the Nepalese commercial banks which cannot be ignored. To provide a basis to concluding on problems statement stated above, the study seeks to answer the following research question:

1. What are the trend patterns and structure of commercial banks performance in Nepal?
2. How are the bank specific, macro-economic variables and performance of commercial bank of Nepal are related?

1.3 Objectives of the Study

The objectives of this study are:

- To examine the relationship between bank profitability and macro economics variables.
- To examine the trend patterns and structure of commercial bank performance in Nepal.

1.4 Significance of the Study

Banks are the most important financial intermediaries in the most economy that provide bundles of different services. As financial intermediaries, banks play a crucial role in the operation of most economy. The efficiency of financial intermediation can also affect economic growth. Beside, banks insolvency can result in systematic crisis. Economies that have a profitable banking sector are better able to withstand negative shocks and contribute to the stability of the financial system. Therefore, it is important to understand the determinants or micro economics factors of banking sectors profitability.

Banking sector has been one of the major contributors to national economy by providing variety of disbursement to different sectors, enabling to boost the GDP. Hence, the performance of this sector needs to be above the par to any others field. The financial performance of commercial bank should be very much capable in enhancing the capital market as well. It is therefore, imperative that this study bears importance to lenders and borrowers of these banks, management of these banks, shareholders, customers and general public and others financials users.

1.5 Limitations of the Study

The limitations of the study are as below:

- The significant size of the sample and observation in the study are only from the commercial bank. It doesn't cover others financial institution.
- Here only seven year data are taken from year 2012 to year 2018.
- In this research only few bank officers are involved in opinion based questionnaires.
- Due to the merging and acquisition trend in banking sector this study doesn't include past data.

1.6 Organization of the Study

This study is divided into five different chapters. The first chapter is the introductory chapter. There is background of the study, statement of the problems, object of the study, limitation of the study, significance of the Study and organization of the study. The second chapter deals with the review of literature that covers the both theoretical and empirical aspect where Factors Affecting the Provisions for capital adequacy in commercial banking sector in Nepal as per on-site inspection manual of Nepal Rastra bank, capital and capital adequacy, loan classification and provision and so on . Review of related literature is divided into both internal and external context separately. The fourth chapter presents the presentation and data analysis of tax revenue in Nepal. Finally, fifth chapter includes the summary of the findings, conclusion, and recommendation of the study.

CHAPTER – II

REVIEW OF LITERATURE

Chapter two, deals with the review of literature where literature is reviewed on the basis of the critical analysis of a segment of a published body of knowledge through summary, classification, and comparison of prior research studies, review of the literature, and theoretical article. The purpose of the literature review is to objectively report the current knowledge on topics and base this summary on previously published research conceptual frame work.

2.1 Conceptual Review

Investment management of bank is guided by the investment policy adopted by the bank. The investment policy of the bank helps the investment operation of the bank to be efficient and profitable by minimizing the inherent risk. So that, an investment word is attach in economics risk and return theory of future result. The commercial banks are inspired with the goal earning profit. There are many reasons after the goal of gaining profit. A bank is a legal person. The shareholders are the owner of the bank. The board of directors is the agent of the bank. It operates the ban. To run the banks many employees are appointed. It needs a great amount of expenses to run the bank, whether it is direct or indirect, there is continues expanse in the bank. In addition to it, the aim of any person or institution to invest the money to the bank is to earn more profit only. A bank established without the aim of gaining the profit is the central bank. Other banks are inspires with the objective of earning profit and helping the economic development and finally to take the social responsibility. They should have the ability to use the policy of banking investment and to implement it such more carefully otherwise a bank may be unsuccessful in its goal (Hennie and Sonja, 2010).

2.1.1 Factors Affecting the Provisions for Capital Adequacy in Commercial Banks in Nepal as per On-Site Inspection Manual of Nepal Rastra Bank

Capital adequacy shows the condition of having sufficient permanent resources to continue operations despite financial losses or non-availability of external funding.

Capital adequacy cannot be determined wholly on the basis of a numeric formula or calculation of a ratio. The following factors come into play when considering the sufficiency of capital for the banks/non banks.

a. Competent and Effective Management

The competence and effectiveness of management including the board of directors, is a key determinant of capital adequacy. A competent and effective management team would chart the proper course of operations and establish efficient systems with effective internal controls to guide the bank towards growth and a planned asset/liability structure. By so doing, the bank should retain sufficient reserves to cover unanticipated losses and reduce the probability of capital erosion. The board of directors must decide on the financial objectives and strategies to be pursued in the longer term, as well as make sure that the bank has a competent management team to carry out day-to-day operations in accordance with the business plan. It is critical that the board and management work together as a team. However, each must also understand their separate, distinct roles and responsibilities. The directorate bears the ultimate responsibility for the conduct of the bank's affairs and provides independent checks and balance over the activities of the management team.

b. Growth Trends and Operating Targets

Capital needs depend upon a great deal on the volume and size of the bank's operations. In order to maintain adequate capital, asset growth should be supported by capital growth. Fixed assets and the long-term infrastructural investments of the bank/nonblank should be supported by capital or long term loans (preferably subordinated debt) rather than deposits. Growth that outpaces the bank ability to maintain a sufficient level of capital means that the bank/nonblank is highly geared and depends too much on less permanent funds as deposits are sometimes quite volatile. Such dependence is unsafe and imprudent. Therefore, banks/non-banks should not only target asset growth but should also plan adequately for their additional capital needs.

c. Earnings Performance and Expectation

Profitability is a fundamental component of capital adequacy. Profits contribute to the accumulation of revenue reserves that constitute the main ingredient of capital growth. A trend of sustained profitability may be a sign of well-managed operations and may be a reflection of competent and efficient management. However, the components of profits should be analyzed to determine the quality of earnings. That is profits should be separated into operating profits and extraordinary profits. Obviously, profits from a stable source of operational earnings provided a better defense against losses than the occasional sale of assets or opportune gains from investments.

d. Balance Sheet Composition

The asset/liability mix as reflected in the balance sheet is a good indicator of the bank/non-bank's long term financial stability. The components of the balance sheet and the proportion of each category of assets and liabilities should be consistent with the objective and targets of the bank. Furthermore, the balance sheet composition should also be fairly consistent over time, thereby reflecting a conscious effort to pursue good asset/liability management. Assets and liabilities inconsistent with the usual operations of the bank reflect a shift in business emphasis. Significant fluctuations in the asset/liability mix over time may indicate that the bank/non-bank lacks clear, long term objectives and is pursuing poor operational strategies that may put the bank/non-bank at greater risk of loss.

e. Assets Quality and Risk Estimations

Although the overall risk-mix inherent to assets appearing on the balance sheet is important in evaluating capital adequacy, possible weakness attached to individual assets are essential to consider. An indicator of asset quality problems is the amount of credit that has been classified and the relative severity of these classifications in relation to capital. Delinquency and foreclosure trends, the level of non-accrued interest or non-performing loans, and the decline in the market value of securities are also signals with respect to asset quality. Consideration must be given to signs of deterioration in asset quality and its potential impact on the bank/non-bank's capital.

f. Off Balance Sheet Exposures

Off-balance sheet activities should be examined along with on balance sheet activities to determine the overall level of risk within a bank. Off-balance sheet activities can be a source of instability. Each activity must be viewed in the light of its contribution to risk and the ability of management to administer it. The major risks include: credit risk, interest rate risk, country risk, and foreign exchange risk. Currently, the risk based capital adequacy ratio only considers capital requirements in relation to credit risk. It is important, therefore, for management to implement controls and procedures to identify, monitor, and manage all risks relating to the activities of the banks/non-banks.

2.1.2 Capital and Capital Adequacy

Capital is a part of wealth or money or property, which may be used for the production of more wealth and additional wealth. It consists of those kinds of wealth other than free gifts of nature, which yield income. Capital is a stock resource that may be employed in the production of goods and services and the price paid for the use of credit or money, respectively.

Patheja has defined banks capital as common stock plus surplus plus undivided profits plus reserves for contingencies and other capital reserves. In addition since a bank's loan-loss reserves also serves as buffer for absorbing losses, a broader definition of bank capital include this account (Patheja, 2010).

Hennie and Sonja (2010) have indicated that the general public is interested in the higher profitability and safety of the funds of a bank, because the public expects the shareholders to assume all the risks. Lower profitability of a bank fills the faith of the prospective depositors and all their incentive for investing t in the various deposit schemes.

The Basel Committee sets a standard for all the banking norms, which will be accepted by central bank of all big industrialist countries. The first (An Explanatory Notes, 1988) was issued in 1988 and was implemented by 1992. The committee has now issued New Basel Capital Accord which will be implemented by 2006 to overcome the drawbacks of

the current capital accord. Central banks of developing underdeveloped countries follow these standards Nepal Rastra Bank also follows these standards and accordingly sets standard for commercial banks in Nepal.

According to the directive issued by Nepal Rastra Bank, the bank capital has been categorized in to two par parts: core capital and supplementary capital. This categorized is also known as core capital for Tier-1 capital and supplementary capital for Tier-2 capital.

The Tier-1 capital consists of the following components:

1. Share Capital,
2. Share Premium,
3. Non- Redeemable Preference Shares,
4. General reserve Found, and
5. Accumulated Profit and Loss Goodwill amount to be deducted, if any.

The Tier -2 capital consists of the following components:

1. General Loan Loss Provision,
2. Exchange Equalization Reserve,
3. Assets Revaluation Reserve,
4. Hybrid Capital Instruments,
5. Interest Rate Fluctuation Fund, and
6. Other free Reserves

The total of Tier-1 and Tier-2 capital is considered for calculating capital adequacy ratio. The capital adequacy ratio is based on total risk-weighted assets (NRB, 2018).

Adequate capital is required to the efficient operating and functioning of the bank in the modern competitive environment, is always the matter of controversial debate. In one hand holding excess capital keeps the firm in low profit position, on the other hand inadequate capital limits the firm to meet the public demand of loan and low earning capacity. Capital adequacy aims at setting optimum level of capital as a function of risks. Thus capital should be risk based.

Capital is adequate either when it reduces the chances of future insolvency of an institution to some predetermine level of alternately when the premium paid by the banks to an insurer is 'fair', that is, when it fully covers the risks borne by the insurer. Such risks, in turn, depend upon the risk in the portfolio selected by the bank, on its capital and on term of the insurance w.r.t. when insolvency will be determined and what loss will be paid (Sontakke and Tiwari, 2013).

Clark has defined capital adequacy as legal requirement that a financial institution (such as a bank) should have enough capital to meet all its obligations and fund the services it offers (Clark, 2013).

The capital adequacy ratio is calculated using the following basic formula:

$$\text{Capital Adequacy Ratio} = \frac{\text{Total Capital Fund}}{\text{Total Risk - Weighted Asscets}} * 100\%$$

Total risk-Weighted assets (TRWA) = Assets held by a financial institution to which degree of risk have been assigned, so that adequate provision can be set aside.

2.1.3 Definition of Capital Fund for Commercial Banks

For the purpose of calculation of Capital Fund, the capital of the banks is divided into two components, Core Capital and Supplementary Capital.

Core Capital:

Core Capital of commercial banks includes:

- Paid up capital
- Share premium
- Non-redeemable preference shares
- General Reserve Fund
- Accumulated Profit and Loss Account

The amount of goodwill shall be deducted from; the; amount of core capital, if amount of goodwill exists at all.

Supplementary Capital:

Supplementary Capital of Commercial banks includes:

- General Loan loss provision:

Previously, total amount of loan loss provision made for all the six categories of loan used to be included in the supplementary capital but not with the new directives, the amount of general loan loss provision shall be included in the supplementary capital as per the following time table:

Time Period	Provision available for inclusion in the supplementary capital
For FY 2001/02 (058/59)	Doubtful loans
For FY 2002/03 (059/60)	Sub-Standard and Doubtful loan
From FY 2003/04 (060/61) to 2017/18	Pass loan

The amount of general loan loss provision shall not exceed 1.25 percent of the total risk weighted asset

- Exchange Equalization Reserve
- Assets Revaluation Reserve

The asset revaluation reserve can be included in the supplementary capital but is limited only up to 2 percent of the total supplementary capital including this reserve amount

- Hybrid Capital Instruments

There are two types of instruments includes under this, they are:

- Unsecured, fully paid up instruments issued by the bank which are subordinated to (priority of payment after) depositors and creditors, not available to absorb losses as well as convertible into ordinary capital.
- Instruments which are non-redeemable at the option of the holder except with the approval of NRB

- Perpetual or long term preference stock (share) convertible into common shares if the profit and loss account becomes negative.

- Unsecured Subordinated Term debt

Unsecured and subordinated debt instruments (priority of payment after the depositors) issued by bank with a minimum maturity period of five years and limited life redeemable preference shares. In order to show the diminishing value of these instruments, banks are required to amortize the value of the instruments at the rate of 20 percent every year.

- Other free resources not allocated for a specific purpose.

Review of NRB Capital Adequacy Norms for Commercial Banks

With the objectives to build up a strong, capable and secured banking system for promoting economic growth of the country as well as to protect the interests of depositors, as provide under section 23 (1) of Nepal Rastra Bank Act 2012 relating to development and regulation of banking system. This directive is respects to maintenances of minimum capital fund by commercial banks have been issued in exercise of authority under (NRB, 2018).

Commercial banks need to maintain the prescribed proportion of minimum capital fund in the basis of the risk weighted assets. As per the directives issue by the Central Bank, the banks need to follow the following time table:

Time Table	Core Capital	Total Capital Fund
For FY 2058/59(2001/02)	4.5%	9.0%
For FY 2059/60(2002/03)	5.0%	10.0%
For FY 2060/61(2003/04)	5.5%	11.0%
From FY 2061/62(2004/05) to 2017/18	6%	12.0%

Since, the capital of the bank is divided into two categories core and supplementary capital. Core capital is known as Tier-1 capital and Supplementary capital is known as Tier-2 capital. The core capital is the summation of share capital, share premium, non-redeemable preference shares, general reserve fund and accumulated profit/loss.

Similarly supplementary capital has been defined to include general loan loss provision, exchange equalization reserve, assets revaluation reserve, hybrid capital instruments, unsecured subordinated term debt, interest rate fluctuation fund and other fee reserves.

The sum of Core and Supplementary capital is measured to be total capital fund. For the purpose of calculation of capital fund, the risk-weighted assets have been classified in two parts on –Balance Sheet Risk-Weighted Assets and Off-Balance Sheet Risk Weighted Items. As stated by the norms, the capital fund ratio would measure the total capital fund on the basis of total risk-weighted assets. The capital fund ratio shall be determined as follows:

$$\text{Capital Fund Ratio} = \frac{\text{Core Capital} + \text{Supplementary Capital}}{\text{Sum of risk - weighted assets}} * 100\%$$

The sum of risk weighted assets is the sum of total no-balance sheet risk-weighted assets and total off-balance sheet risk-weighted items. The bank shall, at the end of Ashoj (mid October), push (mid January), Chaitra (mid April) and Ashad (mid July) of each fiscal year, prepare the statements of Capital Fund and other relevant statements on the basis of the financial statements as per the prescribed Form No. 1 and 2 and submit to the Banking Operations Department and Inspection and Supervision Department of this bank within one month from the end of each quarter. The prescribed form no. 1 and 2 are illustrated in Appendix respectively. In the event of non-fulfillment of Capital Fund Ratio in any quarter, the banks shall fulfill the shortfall amount within next six months. If any bank does not fulfill the minimum Capital Fund within the specified periods, NRB may initiate any of the following actions:

1. Suspension of declaration/ distribution of dividend (including bonus share).
2. Suspension of opening new branch.
3. Suspension of access to refinancing facilities of Nepal Rastra Bank.
4. Restriction on lending activities of the bank.
5. Restriction on accepting new deposits.
6. Initiation of any other actions by exercising the authority under Section 32 of (NRB, 2018).

Loan Classification and Provision

All financial Institutions are required to classify their loan and advances as per the maturity date. Total loan and advances will be classified in to the following four categories.

Pass loan - Loan matured up to 3 months (including restructured and Rescheduled loan)

Sub standard loan- Loan matured up to 6 month

Doubtful loan- Loan matured up to 1 year

Loss loan- Loan matured more than a year

Loan against Gold and Silver, Fixed deposit, NSB and credit card loan shall be categorized as pass loan irrespective of maturity.

Credit card loan matured for more than 90 days should be classified as loss loan.

Pass loan is categorize as performing loan and all other three categories are categorize as non-performing loan.

Additional condition for loss loans

- Any loan and advances not matured but if any of the following condition is prevailed, it will be classified as loss loan.

- Insufficient collateral.
- Borrowers become bankrupt.
- Whereabouts of the borrower is not known.
- If the loan is miss-utilized
- Six months after the auction process initiated.
- Loan provided to blacklisted parties.
- If the funded projects are not in existence.
- B\P and non funded loan if converted to funded and not settled within 90 days.

Loan on installment basis

If the loan is provided on installment basis, whole principle should be classified as per the maturity of installment. Any loan provided for more than one year period must be in installment basis.

Loan loss provision Loan loss provision will be set aside for all categories of loan and advances as per the following percentages.

Pass	1%
Substandard	25%
Doubtful	50%
Loss	100%

Loan against personal guarantee

Loan and advances provided against personal guarantee needs details net worth of the guarantor and additional 20% provision. Personal guarantee taken on top of other collateral for additional security also have same treatment.

Current A\C overdrawn

Realization of interest and principle by overdrawing the current account and\or OD accounts not allowed, in case of such practiced is followed by the bank it should be classified one level down if it is not settled within one month.

Restructuring and rescheduling

All restructured and rescheduled loans needs 12.5% loan loss provision. There must be written proposal and sufficient collateral and projected cash flow for restructuring and rescheduling of loan. At least 25% interest must be recovered for such restructuring. In case of loan classified as sick industry by the committee formed by Nepal government 12% interest recovery will be sufficient for restructuring but 25% provision is required. If such loan is regular for 2years, it can classify as good.

Provision for NBA

Non banking assets acquired on or before 2059\60 shall be make 100%provision within next three years providing equally during 2060\61, 2061\62 and 2062\63. If the limit of maximum holding (i.e.7 years for banks and 5 years for FIs) is expiring during these periods, 100% provision shall be made irrespective of above mentioned 3 years grace period.

Non banking assets acquired after 2059\60 shall provide 100% provisions within 4 years in equal installment including the year of acquisition (i.e. 25% in each year). If the NBA is sold provision set aside for such assets shall be adjusted in the year of sale.

Writing back of provision

Provision can be write back in the following circumstances only

If the loan is write off,

If the loan is repaid,

If the classification of loan is changed (surprisingly removed),

Change of classification due to restructuring and rescheduling of loan cannot write back the provision already made at least for two years till the interest payment is regular. Such written back provision cannot be utilized for distribution of dividend and bonus.

2.2 Review of Related Literature

2.2.1 International Context

Bank performance has always been observed closely to see the financial stability of the economy. Most of the study has measured the bank performance by ROA, ROE, and NIM. There found about the performance of the bank has been highlighted which shows the major literature review associated with the bank performance. Imperial studies outside Nepal have established a strong significant relationship between credit risk and bank performance In the study of the Kenyan banking industry, Kithinji, (2010) showed that there is an indirect relationship between non-performing loan, an indicator of credit risk with profitability. Imperial studies outside Nepal have established a strong significant relationship between credit risk and bank performance.

Batra (2010), in the article entitled “Developing the Asian markets through Investment policy: Developments in India” studied about developments of NPA in India along with the Asian markets. The author found that Indian banks had disturbing amount of NPAs during the last twenty years. As on 31st March of 2008, total approximate NPAs was worth 1, 10,000 crore while it was around 63,883 crore as on 31st March of 2009 due to implementation of proper investment policy.

Batra also analyzed the factors resulting to NPA in the early nineties and concluded that public sector banks performed commendably even though there were limitations set for them. But during early nineties, PSB’s were suffering from severe capital inadequacy representing negative profitability. This situation occurred as the restrictions which were set for their functioning were incomplete which did not project the dominant needs of corporate targets. Incorrect target perception and identification lead them to the wrong way resulting NPAs. PSBs were functioning under control and as per the direction of Finance Ministry during Pre-reform era. Along with Reserve Bank of India (RBI), it directed all aspects of working of the working of the banks. Banks were not free to price their products in competition with each other. They could not provide loans to division of their choice disallowing them invest their funds in their best interest. Finance Ministry and RBI used to take major policy decisions. Even if directors were appointed from the specific sectors to make decision, there was political invasion in either the decision making itself or on the appointment of directors. Audit and inspection was done only for formality and it was unable to correct the effect of serious errors in policies and directions. Banks could not build up itself in terms of skills and expertise to regulate the credit growth which increased by 160 times (i.e. from 3,000 crore in 2000 to 475113 crore on 2009). Need for credit information was not felt and not made which disabled banks to publish names of the defaulters to other banks in the financial system.

Kagri (2011), evaluate the impact of credit risk on the profitability of Nigerian banks. Financial ratio as measures of bank performance and credit risk where collected from the annual report and accounts of sampled banks from 2004-2008 and analyzed using descriptive, correlation and regression technique. The finding revealed that credit risk management has a significant impact on the profitability of Nigerian banks. It concluded that bank profitability is inversely influenced by the level of the loan and advances, non-

performing loans and deposit there by exposing them to great risk of liquidity and distress.

Nimer, Warrad and Omari (2013), investigated the impact of liquidity through quick ratio on profitability through return on assets and found the profitability of bank is significantly influenced by liquidity. However, many studies such as Adebayo O. et al. (2011) study which located that profitability in commercial bank is significantly influenced by liquidity and vice versa.

Vincent & Gemechu (2013) has found management efficiency has positive and significant impact over bank performance. The objective of the study was to examine the effects of bank specific factors and macro economic factors on the performance of commercial banks in Kenya. Using the panel data from 2001 to 2010 the study found that the relationship between bank performance and capital adequacy and management efficiency was found to be positive and for assets quality the relationship was negative. This indicates that poor assets quality or high non-performing loan to total assets related to poor banking performance. Thus, it is possible to conclude that those banks with high assets quality and low non-performing loan are more profitable than the others.

The direction and effects of macroeconomic variables on the performance of commercial banks in Kenya was inclusive. It was found that GDP has a negative correlation with ROA and NIM and positive relation with ROE.

Selma and Journi (2013) conducted a study on Italy, Greece and Spain for the period of 2004-2008 via panel data model and found a significant negative impact of return on assets on problem loans. However, Makri et.al.,(2014) identified the factors affecting problem loans on Eurozone's banking system through difference generalized method of the moment estimation. Their study found that return on assets did not show any significant impact on problem loans.

2.2.2 National Context

Shrestha and K. Chowdhury (2007), found that capital adequacy ratio has positive and significant relationship with net interest margin. The objective of the study was to identify the determinants of Nepalese banks profitability. He used quantitative research method to perform his research. He conducted a study on Nepal Rastra Bank Guidelines

on Investment Policy of Commercial Banks in Nepal. The study found that the performance of NIBL regarding deposit collection, granting loan and advances and investment is quite satisfactory but does not seem to follow a definite policy. NIBL had not efficiently utilized its equity capital hence return on equity was not satisfactory because of lack of sound investment policy for mobilization of its equity capital. Interest earned to total operating income of NIBL was high. From the analysis of coefficient of correlation, there was positive and significant relation between total deposit and loan and advances and current assets and current liabilities and loan loss provision and loan & advances.

Shrestha (2007) found that there is a situation of continuously positive profit in Nepal Bank Limited from the FY 2014/15. Therefore, all the indicating factors to represent the profitability are in positive in Nepal Bank Limited due to effectiveness of investment policy. NBL was generating interest income from its credit on average of 7.0%. If we take the volume of net profit in NBL, It was 1323 million in the FY 2012/13. Because of the positive profit from 2014/15, NBL has positive earnings per share. But from the FY 2015/16, it can earn profit and its earnings per share are further positive. Credit and Investment to total deposit ratios of Nepal Bank Limited was 78% on an average for the study period.

Devkota (2018), conducted study that is based on comparative analysis of investment policy of Nepalese commercial banks. The study found that the profitability position of SCBNL & NABIL is better than that of NIBL in terms of return on total assets and total deposits. During the study period, NIBL was found to be the highest deposit holding bank. In other words, Total deposits of NIBL exceeded the other two banks under study. The total deposits trend of NABIL explained that its deposit is declining by NRs. 389.22 million each year. Other financial indicators like Earning per share (EPS), Dividend per share (DPS) and Book Value per share of SCBNL was found in the better position as compared to that of NABIL & NIBL. The SCBNL has dominated in this regard during almost the whole period of study except for one or two cases where NABIL took off. The loan loss provision of SCBNL had been least during the whole period under analysis among the three selected Joint Venture Banks signifying that it had fewer amounts of bad loans, which is obviously good for any bank.

Upreti (2018), conducted a study on Effectiveness of Investment Policy of Public sector Commercial Banks. The study found that the share of RBB and NBL in the assets and liabilities of the banking sector was around 50% before implementation of sound investment policy. After international financial experts have been managing these banks, the performance especially for reducing NPA was satisfactory. The management teams were supposed to bring NPA level to 5% level. The NPA to total credit ratios of RBB decreased from 60.15% in FY 2009/10 to 20.17% in FY 2014/15. Investment policy of both the management teams is unsatisfactory; they have improved in other areas. Credit related financial indicators in NBL and RBB seem relevant in comparison with the specified standard of NRB. Various acts and regulations were enacted for the financial sector reform but implementation of policies and directives like directed sector credit, sufficient provision for loan loss, volume of NPA is vital because of the increasing trend of NPA in commercial banks.

Adhikary et. al., (2018) found that the major cause of problem loans of government owned banks were lack of proper knowledge among the employees for the evaluation of the project documents and lending with the influence of government and other forces. The study showed that with the financial sector reform program the government owned commercial banks were able to prepare standard credit manuals, loan recovery guidelines, problem loan guidelines, loan write off policies and inspection manuals and to implement them. With this implementation some changes were found in terms of lending procedures. In addition to collateral based lending practices were also gradually replaced by objective lending.

2.3 Research Gap

Various studies have been conducted on the performance of banking system in international platform. The studies on profitability measurement on banking sectors are scarce in Nepalese context. There are only few hands of studies made focusing on the impact of Nepalese bank Performance.

Few studies have been conducted on the determinants of profitability of the commercial banks in Nepal. Most of the studies were focused on measuring the performance of bank rather than finding the factors affecting the profitability. In addition, such studies were based on smaller sample (mainly two or three) bank to determine the factors influencing

profitability. Even through those studies showed that there is possibility to conduct a meaningful analysis of bank profitability, some issue are not dealt sufficiently.

In most of the studies, the econometric methodology was not adequately described which implies that the estimates obtained may be biased and inconsistent. Finally, most of the studies were all based on quantities analysis; this study somehow present some analysis related with qualitative analysis. The approach acts as open frontier for other study to determine the profitability by quantities as well as qualitative methods. Thus, this study has attempted to deal with some of the major issues that have been untouched by the previous studies. These studies also based on primary and secondary data but many other studies focus only in secondary analysis.

The study focus on the bank specific variables like capital adequacy ratio, assets quality, management efficiency, liquidity management, total assets, employee expanses, other operating expenses, credit risk and macro economic variables like GDP and inflation rate to see its effects on bank performance. Profitability is the bank of bank performance.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology sets out overall plan associated with a study. It provides a basic framework on which the study is based. Before presenting the analysis and interpretation of data, it is necessary that research methodology be described first. In the absence of methodology, it is likely that the conclusions drawn may be misunderstood. This chapter therefore explains the methodology employed in this study. In this chapter, the context of the study is presented, which provides the background against which the findings of the study were assessed from which reliability and dependable conclusions were made. Thus, this chapter provides a description of research plan and design, nature and sources of data, selection of enterprises, method of analysis and empirical models for the study.

3.1 Research design

The study has employed descriptive and causal relational research designs to deal with the fundamental issues associated with problem loans and cost efficiency as well as factors influencing these parameters in the context of Nepal. The descriptive research design has been adopted for fact finding and searching adequate information about link between problem loans and cost efficiencies in Nepalese commercial banks. Descriptive research is a process of accumulating facts. It describes phenomenon as they exists. Such design involves the systematic collection and presentation of data to give clear picture of a particular situation. Descriptive research design helps to reduce data into manageable from.

This study has also employed causal relational research design to determine the effect of bank specific variables like capital adequacy ratio, percentage of loan to deposit, return on assets, bank size, risk weighted assets, priority sector lending, foreign ownership, credit growth and percentage of loan loss provision on problem loans and cost efficiency of commercial banks. This research design has been adopted to examine the causal relationship between problem loans and cost efficiency in commercial banking sector of Nepal and to investigate the possible causes affecting the problem loans and cost efficiency by observing the existing consequences and searching for the possible factors leading to change in these parameters.

3.2 Tools and Methods of Data Collection

During taking the sample size of influence of bank specific and macroeconomics variables on the performance of commercial banks of Nepal, I will focus on secondary data and interview methods. Besides this, reports from the banks are the crucial things that help during the data collection.

a) Secondary data

Secondary data is available from other sources and may already have been used in previous research, making it easier to carry out further research. It is time-saving and cost-efficient: the data was collected by someone other than the researcher. Administrative data and census data may cover both larger and much smaller samples of the population in detail. The benefit of using secondary data is that much of the preliminary work is done. The data may have already been sorted in an electronic format, published and reviewed with case studies already conducted. Secondary data can quickly become more or less public knowledge through use in the media. Due to its exposure and public examination, secondary data can carry more legitimacy than primary research data and is often used as verification of primary data.

b) Primary data:

Primary data are collected from different NRB officials, commercial banks staffs, investors, depositors and academicians. More than one respondent have been included from the same organization as far as possible.

3.3 Selection of the Enterprises

In order to examine the role of different bank specific variables and control variables on problem loans and cost efficiency of banks, this study contains a sample of 19 commercial banks of Nepal selected by random sampling method, whose respective data are collected within the time period from 2012 to 2018 which make 133 observations. Likewise, respective data for control variables are collected from World Bank development indicators database within the time period of 2012 to 2018 which constitutes of 14 observations with total number of 147 firm year observations.

Table 3.1.
Lists of Enterprises Selected for the Study

S.N.	Name of Bank	Year	No. of observation
1	Nabil Bank Ltd.	2012-2018	7
2	Nepal Investment Bank Ltd.	2012-2018	7
3	Standard Chartered Bank Ltd.	2012-2018	7
4	Nepal SBI Ltd.	2012-2018	7
5	Nepal Bangladesh Bank Ltd.	2012-2018	7
6	Everest Bank Ltd.	2012-2018	7
7	Bank of Kathmandu Ltd.	2012-2018	7
8	Machhapuchhre Bank Ltd.	2012-2018	7
9	Kumari Bank Ltd.	2012-2018	7
10	Laxmi Bank Ltd.	2012-2018	7
11	Siddartha bank Ltd.	2012-2018	7
12	Agricultural Development Bank Ltd.	2012-2018	7
13	Global IME Bank Ltd.	2012-2018	7
14	Citizen Bank Ltd.	2012-2018	7
15	Prime Commercial Bank Ltd.	2012-2018	7
16	Sunrise Bank Ltd.	2012-2018	7
17	Prabhu Bank Ltd.	2012-2018	7
18	NMB Ltd.	2012-2018	7
19	Nepal Bank Ltd.	2012-2018	7
20	World Bank Data	2012-2018	14
	Total Number of Observation	-	147

3.4 Method of Data Analysis

The main purpose of data analysis in this study is to explore the predictive power of bank specific variables (capital adequacy ratio, percentage of loan to deposit, return on assets, bank size, risk weighted assets, priority sector lending, foreign ownership, credit growth and percentage of loan loss provision) and control variable (inflation, real GDP

growth) in explaining the problem loans and cost efficiency in commercial banks of Nepal. Besides, the study also attempts to identify and analyze causal relationship between problem loans and cost efficiency. Therefore, this section deals with statistical and econometric models used for the purpose of analysis of secondary data.

3.5 Model Specification

The econometric models used in this study tries to explain the relationship between the independent variables which are categorized into bank specific variables and macroeconomic variables as control variables and the dependent variable which are problem loans and cost efficiency.

This study uses least square regression model to test which of the hypotheses are consistent with data. As each hypothesis in this study imply unique time-ordered and signed relationship among pairs of two important variables (problem loans and cost efficiency), regression model may help to indicate which of the hypotheses are generally consistent or inconsistent with the data.

In order to explain the effect size of bank specific variables and macroeconomic variables on problem loans and cost efficiency, following regression models have been used.

Model 1:

In this model, the dependent variable is the problem loans indicated by percentage of non-performing loans to total loans. The impact of capital adequacy ratio, credit growth, return on assets, priority sector lending, risk weighted assets, percentage of loan to deposit and control variable (inflation, real GDP growth) on problem loans is tested. The model is presented as:

$$PL = \beta_0 + \beta_1 * CAR + \beta_2 CG + \beta_3 ROA + \beta_4 PSL + \beta_5 RWA + \beta_6 LDP + \beta_7 I + \beta_8 GDP + \epsilon \dots \dots (1)$$

Where,

PL represents problem loans

CA represents capital adequacy ratio

CG represents the credit growth

ROA represents return on assets

PSL represents priority sector lending

RWA represents risk weighted assets

LDP represents loan to deposit percentage

I represent inflation

GDP represents the real GDP growth

ε is the error term

Model 2:

In this model, the dependent variable is the percentage of operating expense to total assets as a proxy of cost efficiency. The impact of problem loans, capital adequacy ratio, and bank size, percentage loan loss provision to total loans, foreign ownership and macroeconomic variables as control variable (inflation, real GDP growth) on cost efficiency of commercial banks is tested. The model is presented as:

$$OE = \beta_0 + \beta_1 PL + \beta_2 CAR + \beta_3 BS + \beta_4 LLP + \beta_5 FO + \beta_6 I + \beta_7 GDP + \varepsilon \quad \text{.....(2)}$$

Where,

OE represents operating expense of the bank and higher OE represents lower cost efficiency.

PL represents problem loans

CAR represents capital adequacy

BS represents bank size

LLP represents loan loss provision

FO represents foreign ownership

I represent inflation

GDP represents the real GDP growth

ε is the error term

3.6 Assumption and Operational Definition

Various variables used in these studies are described below under the heading of bank performance indicators, bank specific variables and macro economic variables.

3.6.1 Bank Performance Indicators

Profit is the ultimate goal of the commercial banks. All the strategies designed and activities performed are meant to realize these grand objectives. However, this does not mean that commercial bank has no others goals. Commercial bank could also have additional social and economical goals. The intension of this study is related to the first objective, profitability, assets, returns on equities and net interest margin are the major ones.

Return on Equity (ROE)

ROE is financial ratio that refers to how much profit of a company earned compared to the total amount of the share holder equity invested or found in the balance sheet. ROE is what the share holder look in returns for their investment. A business that has a high return on equity is more likely to be one that is capable to generate cash internally. Thus, the higher the ROE the better the company is in term of profit generation. It represents the rate of return earned on the funds invested in the bank by its stakeholders. ROE reflects how effectively a bank management is using shareholder's fund. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital.

Returns on Asset (ROA)

ROA is also another major ratio that indicates the profitability of bank. It is a ratio of income to its total asset. It measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resource of the company is used to generate the income. It further indicate

the efficiency of the management of the company is generating net income from all the resource of the institution state that a higher ROA shows that the company is more efficient in its resource.

Net Interest Margin (NIM)

NIM is a measure of the difference between the interest income generated by bank or others financial institutions and the amounts of the interest paid out to their lenders (for example, deposit), relative to the amount of their (interest earning) assets. It is usually expressed as a percent of what the financial institution earns on loans in a time period and others assets minus the interest paid on borrowed fund divided by the average amount of the assets on which it earns income in that time period(the average earning assets).

Despite the rising importance of fee based income as the proportion of total income for many banks, net interest margins (NIM) remain one of the principle elements of bank net cash flow and after tax earnings.

3.6.2 Bank Specific Factors/Internal Factors

The determinants of banks performance can be classified into bank specific (internal) and macroeconomic (external) factors.. These are the stochastic variable that determines the output. Internal factors are individual bank characteristics which affects the banks performance. These factors are basically influences by internal decision of management and the board. As explained above, the internal factors are bank specific variables which influence the profitability of specific bank. These factors are within the scope of the bank to manipulate them and that they differ from the bank to bank. These include capital size, size of deposit liability, size and composition of credit portfolio, interest rate policy, labor productivity, and state of information technology, risk level, management quality, bank size, ownership and management efficiency.

Capital Adequacy Ratio (CAR)

Capital is one of the banks specific factoring that influence the level of the bank profitability. Capital is the amount of own fund available to support the bank business and act as buffer in case of adverse situation. Bank capital creates liquidity for the bank

due to the fact that deposits are most fragile and prone to the bank runs. Moreover, greater bank capital reduces the chance to distress. Capital adequacy ratio has positive and significance relationship with the bank performance and profitability.

Asset Quality (AQ)

The bank's asset is another bank specific variable that affects the profitability of a bank. The bank assets include among other current assets, credit portfolio, fixed asset, and others investment.

Loan is the major assets of commercial banks from which they generate income. The quality of loan portfolio determines the profitability of the banks. Assets quality has positive and significant relationship with bank performance.

GDP

The macroeconomic indicators GDP, inflation, interest rate, political instability, remittance, etc are also other macroeconomic variable that affects the performance of banks. For example, the trend of GDP affects the demand of bank assets. During the decline GDP growth the demand for credit fall which in turn negatively affects the profitability of banks. On the contrary, in the growing economy as expressed by positive GDP growth, the demand for credit is higher due to the nature of business cycle. During the boom the demand of credit is high due to the rapid incensement in the economics activities in the economy with comparison to recession phase of business cycle. The some author's state in relation to the Greek situation that the relationship between inflation level and bank profitability is remained to be debatable.

Inflation

Conceptually, inflation refers to the situation in which the value of money is falling and value of goods and services are increasing for a long time period. The price of goods and services is increasing in the economy. A moderate level of inflation is necessary in the country because of the positive effects on the economics activities. If there is positive change in the economics there also is positive change in the profitability condition of the bank. However the high rate of inflation can be determinately to investment. The import of this is that the return on investment will significantly influence by inflation.

Thus, inflation is another macro economics variable that affects the performance of the commercial banks.

Bank Specific Factors/External Factors

The external factors are a sector-wide or country wide factor which are beyond the control of the company and affects the profitability of the banks. The overall financial performance of bank is improving. However, this does not mean that all banks are profitable; some banks are suffering from losses. Studies have shown that bank specific and macro economic factors affect the performance of commercial banks. In this regard, the study of Habtamu (2013) in Kenya focus on sector specific factors that affect the performance of commercial banks.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

This chapter provides systematic presentation, interpretation and analysis of secondary data in order to deal with various issues associated with the analyzing the link between problem loans and cost efficiency and their determinants. The purpose of the chapter is to analyze and interpret the data collected during the study. Various statistical tools described in chapter three have been used for this purpose. This chapter is divided in to five sections. The first section deals with structure and pattern analysis of data, second section deals with descriptive statistics, third section deals with the correlation analysis, fourth section deals with step wise regression analysis and the final section wraps up this chapter with concluding remarks about the result derived for the secondary data.

4.1 Structure and Pattern of Bank Specific Variables

This section deals with the structure of factors determining problem loans and cost efficiency in commercial banks of Nepal. The structure has been shown year wise along with average value and standard deviation.

The structure of dependent variable are problem loans and cost efficiency where independent variable are capital adequacy ratio, percentage of loan to deposit, return on assets, bank size, risk weighted assets, priority sector lending, foreign ownership, credit growth and percentage of loan loss provision and control variables inflation and real GDP growth are included in this section.

i) **Problem loans**

Percentage of problem loan has been computed by dividing non-performing loan of bank by total loans of the respective bank.

4.1.1 Structure and Pattern of Problem Loans in Selected Nepalese

Commercial Banks (in percentage).

This table shows the percentage of problem loans of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.1

Structure and pattern of problem loans in selected Nepalese commercial banks (in percentage).

Banks/Year	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	8.9	5.9	2.3	5.3	5.8	4.5	5.8	5.50	1.97
NABL	0.8	0.8	0.1	1.8	2.3	2.1	2.2	1.44	0.87
NIBL	1.1	0.8	0.5	0.6	2	1.9	1.7	1.23	0.63
SCB	0.9	0.7	0.5	0.6	0.7	0.8	0.3	0.64	0.20
SBI	3.6	2	1.5	1.1	0.5	0.4	0.3	1.34	1.18
NBB	31.1	19.3	1.8	19.2	4.3	3.1	1.4	11.46	11.71
EBL	0.6	0.5	0.2	0.3	0.8	0.6	0.6	0.51	0.20
BOK	1.8	1.3	1.2	1.8	2.3	1.5	1.1	1.57	0.42
MBL	1	2.8	1.8	4.5	2.7	2.9	1.7	2.49	1.13
KBL	1.4	0.4	0.4	1.1	2.2	3.9	3.5	1.84	1.42
LBL	0.1	0.1	0.1	0.9	0.6	1.3	1.1	0.60	0.51
SBL	0.6	0.5	0.4	0.6	2.3	2.4	1.7	1.21	0.89
ADBL	11.6	8.8	8.2	8.6	6.4	5.8	5.3	7.81	2.18
GIBL	2.2	0.1	0.6	2.5	1.6	1.6	2.4	1.57	0.92
CZBIL	0	0	0	1.2	2	2	2.4	1.09	1.08
PCBL	0	0	0.2	0.5	0.5	2.2	1.9	0.76	0.91
SRBL	0	0.2	1.3	3.4	3	3.7	4.5	2.30	1.79
PRABHU	2.2	1.6	1.2	1.6	1.2	3.5	19.1	4.34	6.56
NMB	1.5	0.5	0.7	0.3	2.5	1.8	0.5	1.11	0.83
Mean	3.65	2.44	1.21	2.94	2.30	2.42	3.03		
SD	7.31	4.66	1.82	4.47	1.66	1.40	4.21		

Source: Annual audited financial Statements of Commercial Banks

As indicated by the table the average change in problem loan varies widely within the individual banks also. It decreased from for Nepal bank, SCB, SBI, NBB, EBL, BOK, KBL, ADBL, GIBL, CZBIL, for NMB.

Similarly, problem loan increased in NABL, NIBL, LBL, SBL, PCBL, SRBL, PRABHU. Thus the variation in problem loan as indicated by SD is lowest for SCB, EBL, BOK, LBL, NIBL, NMB, NABL, SBL, PCBL, GIBL, CZBIL, MBL, SBI, KBL, SRBL, NBL, ADBL, PRABHU and NBB.

The problem loans is highest for NBB in the year 2012, 2013 and 2015 whereas it is highest for PRABHU in the year 2018. Likewise ,problem is highest for ADBL in the year 2014 and 2016. In the year 2017 problem loan is highest for Nepal bank limited.

The problem loan is lowest for EBL and SBL in the year 2016 whereas it is lowest for LBL in the year 2017 and 2016. Likewise problem loan is lowest for LBL and NBL in the year 2014. In the year 2015 problem loan is lowest for NMB and EBL. Further problem loan is lowest for EBL for the year 2017 and for SCB and SBI in the year 2018.

ii) Operating expenses

Percentage of operating expenses has been computed by dividing total operating expenses of bank by total assets of the respective bank. In this study higher operating expenses include lower cost efficiency.

4.1.2 Structure and Pattern of Operating Expenses in Selected Nepalese Commercial Banks (in percentage).

This table shows the percentage of operating expense of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.2**Structure and pattern of operating expenses in selected Nepalese commercial banks (in percentage).**

Banks/Year	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	5.66	5.74	9.32	6.84	7.68	6.57	6.79	6.94	1.26
NABL	3.86	4.34	5.54	6.91	6.73	4.84	3.87	5.16	1.28
NIBL	1.27	1.09	1.24	1.34	1.23	1.22	1.13	1.22	0.08
SCB	2.46	2.56	2.7	2.55	4.18	3.1	2.67	2.89	0.61
SBI	3.97	3.88	5.04	6.07	6.06	5.22	5.21	5.06	0.88
NBB	7.04	7.98	7.19	7.62	6.96	6.29	5.6	6.95	0.80
EBL	3.75	4.04	5.2	6.95	6.62	4.79	4.71	5.15	1.22
BOK	4.05	4.77	6.35	7.49	7.4	6.02	6.87	6.14	1.31
MBL	4.83	4.88	7.35	10.12	1.95	1.98	1.64	4.68	3.18
KBL	1.58	1.54	1.69	1.86	1.62	1.54	1.49	1.62	0.12
LBL	2.16	1.28	1.35	1.54	1.57	1.6	1.56	1.58	0.28
SBL	4.52	5.64	7.39	9.61	8.65	6.94	5.93	6.95	1.77
ADBL	8.65	11.83	8.43	7.94	9.14	7.49	8.89	8.91	1.40
GIBL	1.99	1.51	2.24	1.8	1.58	0.73	1	1.55	0.53
CZBIL	4.58	4.94	6.94	1.55	1.74	1.69	1.49	3.28	2.20
PCBL	20.53	13.12	11.09	10.77	9.44	10.73	11.32	12.43	3.73
SRBL	1.52	1.18	1.91	2.4	2.23	2.1	2.11	1.92	0.43
PRABHU	1.48	1.03	1.13	1.39	1.23	1		1.21	0.19
NMB	0.71	0.8	1.41	1.54	1.41	1.46	1.52	1.26	0.35
Mean	4.45	4.32	4.92	5.07	4.60	3.96	4.10		
SD	4.41	3.52	3.15	3.41	3.12	2.83	3.01		

Source: Annual audited financial Statements of Commercial Bank

The table shows that operating expenses varied widely from one bank to another bank. The percentage of operating expenses is largest for PCBL (12.43 percent), ADBL (8.91 percent), NBB (6.95 percent), SBL(6.95 percent), NBL(6.94 percent), BOK(6.14 percent), NABL(5.16 percent), EBL(5.15 percent), SBI(5.06 percent),MBL(4.68 percent),CZBIL(3.28 percent),SCB(2.89 percent), SRBL(1.92 percent), KBL(1.62

percent), LBL(1.58 percent), GIBL(1.55 percent), NMB(1.26 percent), NIBL(1.22 percent) and PRABHU(1.21 percent).

As indicated by the table the average change in operating expense varies widely within the individual banks also. It increased from 5.66 percent to 6.79 percent for NBL, 3.86 percent to 3.87 percent for NABL, 2.46 percent to 2.67 percent for SCB, 3.97 percent to 5.21 percent for SBI, 3.75 percent to 4.71 percent for EBL, 4.05 percent to 6.87 percent for BOK, 4.52 percent to 5.93 percent for SBL, 8.65 percent to 8.89 percent for ADBL, 1.52 percent to 2.11 percent for SRBL and 0.71 percent to 1.52 percent for NMB.

Similarly, operating expense decreased from 1.27 percent to 1.13 percent for NIBL, 7.04 percent to 5.6 percent for NBB, 4.83 percent to 1.64 percent for MBL, 1.58 percent to 1.49 percent for KBL, 2.16 percent to 1.56 percent for LBL, 1.99 percent to 1 percent for GIBL, 4.58 percent to 1.49 percent for CZBIL, 20.53 percent to 11.32 percent for PCBL and 1.48 percent to 1 percent for PRABHU. Thus the variation in operating expenses as indicated by SD is lowest for NIBL followed by KBL, PRABHU, LBL, NMB, SRBL, GIBL, SCB, NBB, SBI, EBL, NBL, NABL, BOK, ADBL, SBL, CIZBL, MBL, PCBL.

iii) Capital adequacy ratio

Capital adequacy ratio has been computed by dividing total capital fund of bank by total assets of the respective bank.

4.1.3 Structure and Pattern of Capital Adequacy Ratio in Selected Nepalese Commercial Banks (in percentage).

This table shows the capital adequacy ratio of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.3**Structure and pattern of capital adequacy ratio in selected Nepalese commercial banks (in percentage)**

Banks/Year	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	-10.87	-9.08	-9.69	-8.27	-5.05	-1.25	3.16	-5.86	5.15
NABL	5.35	5.30	5.73	6.26	6.38	6.98	7.14	6.16	0.74
NIBL	4.87	6.26	6.32	7.47	7.40	7.76	7.63	6.82	1.05
SCB	6.17	5.98	7.35	7.45	8.56	8.81	8.39	7.53	1.13
SBI	6.26	4.42	5.44	5.32	4.77	4.82	6.05	5.30	0.68
NBB	-17.86	-6.21	6.94	10.07	9.37	11.95	10.43	3.53	11.25
EBL	3.72	5.44	5.24	5.88	5.50	6.74	6.74	5.61	1.03
BOK	5.41	6.39	7.24	8.10	8.16	9.84	8.24	7.62	1.44
MBL	8.27	8.49	7.84	8.77	10.36	8.39	6.54	8.38	1.14
KBL	10.22	7.11	7.56	8.98	8.28	7.80	7.90	8.26	1.04
LBL	8.04	6.14	8.30	8.52	7.79	7.35	7.25	7.63	0.80
SBL	7.67	6.97	6.41	7.36	6.43	-1.25	5.75	5.62	3.10
ADBL	8.30	14.39	14.82	16.35	15.72	14.19	13.12	13.84	2.66
GIBL	7.91	7.98	8.67	8.64	7.31	8.13	8.37	8.15	0.47
CZBIL	7.41	7.86	7.81	12.25	10.66	8.38	6.88	8.75	1.96
PCBL	10.84	5.35	6.77	10.76	8.88	7.72	7.73	8.29	2.02
SRBL	9.08	5.88	9.11	10.79	9.66	7.83	7.77	8.59	1.58
PRABHU	21.90	17.78	17.83	15.59	11.84	9.57	8.24	14.68	4.97
NMB	12.58	9.23	13.34	13.36	11.63	8.76	7.34	10.89	2.43
Mean	6.07	6.09	7.53	8.61	8.09	7.50	7.62		
SD	8.27	5.85	5.33	5.11	4.07	3.66	1.96		

Source: Annual audited financial Statements Of Commercial Bank

The table shows that percentage of bank's capital varied widely from one bank to another bank. The percentage of bank's capital is largest for PRABHU (14.68 percent) followed by ADBL(13.84 percent),NMB (10.89 percent), CIZBL(8.75 percent), SRBL (8.59 percent), MBL (8.38 percent), PCBL(8.29 percent), KBL (8.26 percent), GIBL (8.15 percent), LBL(7.63 percent) , BOK(7.62 percent), SCB(7.53 percent), NIBL (6.82

percent), NABL (6.16 percent), SBL(5.62 percent), EBL(5.61 percent), SBI(5.30 percent), NBB(3.53 percent) and NBL(-5.86 percent).

As indicated in the table the average change in bank's capital varies widely within the individual banks also. It increased from -10.87percent to 3.16percent for NBL, 5.35percent to 7.14percent for NABL, 4.87percent to 7.63percent for NIBL, 6.17percent to 8.39percent for SCB, -17.86percent to 10.43percent for NBB, 3.72percent to 6.74percent for EBL, 5.41percent to 8.24 percent for BOK, 8.30percent to 13.12percent for ADBL, 7.91percent to 8.37percent for GIBL.

Similarly, bank capital decreased from 6.26percent to 6.05percent for SBI, 8.27percent to 6.54percent for MBL, 10.22percent to 7.90percent for KBL, 8.04percent to 7.25percent for LBL, 7.67 percent to 5.75percent for SBL, 7.41percent to 6.88percent for CZBIL, 10.84percent to 7.73percent for PCBL, 9.08percent to 7.77percent for SRBL, 21.90percent to 8.24percent for PRABHU and 12.58percent to 7.34percent for NMB. Thus, the variation in bank's capital as indicated by SD is lowest for GIBL,SBI,NABL,LBL,EBL,KBL,NIBL,SCB,MBL,BOK,SRBL,CZBIL,PCBL,NMB,ADBL,SBL,PRABHU,NBL and NBB.

The bank's capital is highest for PRABHU in the year 2012, 2013 and 2014, ADBL in the year 2015,2016,2017 and 2018. Similarly, bank's capital is lowest for NBB in the year 2012, NBL in the year 2013,2014,2015,2016 and 2017and 2018.

iv) Credit growth

Percentage of credit growth has been computed by dividing difference of current year's total loans and previous year's total loans of bank by previous year's total loans of the respective bank.

4.1.4. Structure and Pattern of Credit Growth in Selected Nepalese Commercial Banks (in percentage).

This table shows the percentage of credit growth of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.4

Structure and pattern of credit growth in selected Nepalese commercial banks (in percentage).

Banks/ear	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	15.72	24.42	30.18	6.24	10.94	28.06	8.84	17.77	9.73
NABL	37.41	29.29	18.28	17.82	10.23	11.21	17.48	20.25	9.80
NIBL	55.28	33.54	12.25	2.40	2.03	11.43	12.08	18.43	19.32
SCB	26.73	-1.77	21.45	11.08	3.83	25.85	13.80	14.42	10.93
SBI	27.71	22.98	15.66	21.08	21.92	10.39	20.29	20.00	5.54
NBB	1.41	1.04	4.14	12.23	7.34	21.05	45.70	13.27	15.93
EBL	33.82	29.51	15.45	12.10	15.35	19.29	10.51	19.43	8.89
BOK	31.35	17.35	13.11	2.38	4.73	27.60	17.03	16.22	10.75
MBL	21.96	57.16	7.00	-1.50	8.92	35.02	35.06	23.38	20.46
KBL	27.06	28.24	1.32	0.16	19.53	12.77	13.51	14.65	11.22
LBL	49.89	37.43	9.56	3.60	3.83	20.79	14.22	19.90	17.66
SBL	50.02	42.44	25.11	8.90	9.33	88.14	-27.15	28.11	36.68
ADBL	6.90	4.61	2.89	2.58	12.25	21.22	13.64	9.15	6.88
GIBL	94.73	80.89	32.68	5.14	59.93	31.47	58.60	51.92	30.98
CZBIL	133.95	71.16	33.07	14.04	15.18	23.44	30.66	45.93	43.30
PCBL		90.48	43.65	21.05	12.24	13.44	27.97	34.80	29.59
SRBL		120.22	36.37	1.83	18.01	25.61	13.70	35.96	42.87
PRABHU		74.93	16.18	20.45	25.28	26.54	924.72	181.35	364.81
NMB		149.27	49.85	44.05	2.96	42.61	26.80	52.59	50.31
Mean	40.93	48.06	20.43	10.82	13.89	26.10	67.24		
SD	34.18	40.70	13.97	10.89	12.97	17.30	208.36		

Source: Annual audited financial Statements of Commercial Bank

The computed values are presented in the table 4.4. The table shows that percentage of credit growth varied widely from one bank to another bank. The percentage of credit growth is largest for PRABHU (364.81 percent), NMB (50.31 percent), GIBL (51.92 percent), CZBIL (45.93 percent), SRBL (35.96 percent), PCBL (34.80 percent), SBL

(28.11 percent), MBL (23.38 percent), NABL (20.25 percent), SBI(20 percent), LBL (19.90 percent), EBL (19.43 percent), NIBL(18.43 percent), NBL (17.77 percent), BOK (16.22percent), KBL (14.65 percent), SCB(14.42 percent),NBB(13.27 percent)and ADBL(9.15 percent).

As indicated by the table the average change in credit growth varies widely within the individual banks also. It decreased from 15.52 percent to 8.84 percent for NBL, 37.41 percent to 17.48 percent for NABL,55.28 percent to 12.08 percent for NIBL,26.73 percent to 13.80 percent for SCB, 27.71 percent to 20.29 percent for SBI,33.82percent to 10.51 percent for EBL, 31.35 percent to 17.03 percent for BOK, 27.06 percent to 13.51 percent for KBL, 49.89 percent to 14.22 percent for LBL, 50.02 percent to -27.15 percent for SBL ,94.73 percent to 58.60 percent for GIBL, 133.95 percent to 30.66 percent for CZBIL, 90.48 percent to 27.97 percent for PCBL,120.2 percent to 13.70 percent for SRBL and 149.2 percent to 26.80 percent for NMB.

Similarly, it increased from 1.14 percent to 45.70 percent for NBB, 21.96 percent to 35.06 percent for MBL, 6.90 percent to 13.64 percent for ADBL and 74.93 percent to 924.72 percent for PRABHU. Thus, the variation in credit growth as indicated by SD is lowest for SBI, ADBL, EBL, NBL, NABL, BOK, SCB, KBL, NBB, LBL, NIBL, MBL, PCBL, GIBL, SBL, SRBL, CZBL, NMB and PRABHU) Priority sector lending.

The percentage of priority sector lending has been computed for the selected commercial banks from the year 2016 to 2018.The computed values are presented in the table 4.5. Table shows that there is no wide variation in priority sector lending from one bank to another. The percentage of priority sector lending is largest for ADBL (9.59percent), SCB (3.50 percent), PRABHU (3.50 percent), MBL (3.45 percent), KBL (3.44 percent), LBL (3.43 percent), NIBL (3.43 percent), NBL (3.40 percent), NABL(3.39 percent),SBI(3.32 percent), BOK(3.28 percent), PCBL(3.23 percent), NBB(3.19 percent), SRBL (3.17 percent), SBL (3.15 percent), EBL(2.99 percent), GIBL(2.90 percent), NMB(2.88 percent) and CZBIL (2.83 percent).

As indicated by the table the average change in priority sector lending varies within the individual banks also. It increased from 3.785 percent to 4.36 percent for NBL, 2.88 percent to 4.28 percent for NABL, 2.48 percent to 4.55 percent for NIBL, 2.85 percent to 4.36 percent for SCB, 2.84 percent to 4.41percent for SBI, 2.77 percent to 4.07 percent

for NBB, 2.78 percent to 4.56 percent for EBL, 4.18 percent to 4.46 percent for BOK, 3.45 percent to 4.18 percent for MBL, 3.06 percent to 4.45 percent for KBL, 2.89 to 4.58 percent for LBL, 3.09 percent to 4.24 percent for SBL, 0.64 percent to 11.03 percent for ADBL, 2.27 percent to 3.36 percent for GIBL, 0.29 percent to 4.02 percent for CZBIL, 2.53 percent to 3.23 percent for PCBL, 1.73 percent to 4.55 percent for SRBL and 3.61 percent to 4.60 percent for NMB.

Similarly, priority sector lending decreased from 2.75 percent to 0.47 percent for PRABHU. Thus the variation in priority sector lending as indicated by SD is lowest for GIBL, MBL, PCBL, SCB, NABL, KBL, NBL, SBL, SBI, LBL, NIBL, SRBL, NBB, BOK, CZBIL, EBL, NMB, PRABHU and ADBL.

4.1.5. Structure and Pattern of Priority Sector Lending in Selected Nepalese Commercial Banks (in percentage).

Percentage of priority sector lending has been computed by dividing total priority sector lending of bank by total loans of the respective bank. This table shows the percentage of priority sector lending of 19 commercial banks of Nepal within the period of 2012 to 2018.

Priority sector lending is highest for BOK in the year 2012, ADBL in 2013, 2014, 2015, 2016, 2017 and 2018. Similarly, it is lowest for CZBIL in the year 2016, SRBL in the year 2017 and 2014, NMB in the year 2015 and 2016, and SBL in the year 2017 and PRABHU in the year 2018.

Table 4.5**Structure and pattern of priority sector lending in selected Nepalese commercial banks (in percentage).**

Banks/Year	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	3.78	2.67	2.95	3.10	3.37	3.55	4.36	3.40	0.56
NABL	2.88	3.15	3.14	2.89	3.51	3.90	4.28	3.39	0.53
NIBL	2.48	3.09	3.28	3.21	3.41	3.96	4.55	3.43	0.66
SCB	2.85	3.82	3.23	3.12	3.66	3.47	4.36	3.50	0.50
SBI	2.84	2.85	3.15	2.78	3.29	3.93	4.41	3.32	0.62
NBB	2.77	3.63	3.97	3.15	0.86	3.86	4.07	3.19	1.13
EBL	2.78	2.94	3.09	3.08	0.55	3.94	4.56	2.99	1.25
BOK	4.18	3.08	3.25	3.61	0.83	3.57	4.46	3.28	1.19
MBL	3.45	3.16	3.10	3.26	3.42	3.56	4.18	3.45	0.36
KBL	3.06	2.87	3.17	3.14	3.50	3.90	4.45	3.44	0.56
LBL	2.89	2.82	3.14	3.07	3.62	3.88	4.58	3.43	0.64
SBL	3.09	2.88	3.07	2.94	3.43	2.40	4.24	3.15	0.57
ADBL	0.64	9.93	8.85	12.30	11.82	12.35	11.03	9.56	4.14
GIBL	2.37	2.48	2.95	3.04	3.05	3.05	3.36	2.90	0.35
CZBIL	0.29	2.57	2.98	3.00	3.10	3.83	4.02	2.83	1.23
PCBL		2.53	3.11	2.89	3.58	3.93	3.37	3.23	0.46
SRBL		1.73	2.85	2.97	2.98	3.94	4.55	3.17	0.89
PRABHU		2.75	4.55	4.81	4.54	3.88	0.47	3.50	1.52
NMB		3.61	2.89	2.00	0.31	3.88	4.60	2.88	1.41
Mean	2.69	3.29	3.51	3.60	3.31	4.15	4.42		
SD	1.02	1.67	1.35	2.17	2.40	2.02	1.86		

Source: Annual audited financial Statements of Commercial Bank

vi) Risk weighted assets

Percentage of risk weighted assets has been computed by dividing total risk weighted assets of bank by total loans of the respective bank.

4.1.6. Structure and Pattern of Risk Weighted Assets in Selected Nepalese Commercial Banks (in percentage).

Percentage of risk weighted assets has been computed by dividing total risk weighted assets of bank by total loans of the respective bank. This table shows the percentage of risk weighted assets of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.6
Structure and pattern of risk weighted assets in selected Nepalese commercial banks (in percentage).

Banks/Yea	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	51.19	66.64	86.71	85.63	90.21	91.39	94.52	80.90	15.94
NABL	69.99	75.56	49.36	53.26	76.11	80.89	78.76	69.13	12.68
NIBL	85.73	83.77	54.08	61.81	89.68	87.34	86.75	78.45	14.29
SCB	54.04	52.07	41.35	42.89	71.74	81.87	79.48	60.49	16.99
SBI	74.02	52.57	38.46	44.95	59.41	59.45	70.71	57.08	12.90
NBB	83.72	76.79	53.94	95.66	85.58	89.42	92.15	82.47	13.99
EBL	73.69	68.55	49.62	56.41	74.03	69.73	79.54	67.37	10.60
BOK	78.51	82.64	63.22	69.68	86.35	93.07	92.87	80.90	11.32
MBL	85.12	82.35	70.15	80.73	75.06	75.16	78.52	78.16	5.09
KBL	81.26	92.46	54.75	62.12	77.75	76.82	80.26	75.06	12.64
LBL	83.45	79.45	55.38	64.49	82.63	85.88	82.53	76.26	11.61
SBL	86.62	83.92	59.78	62.63	85.14	38.89	80.58	71.08	17.93
ADBL	81.92	116.68	82.09	81.98	112.86	109.43	112.7	99.67	16.67
GIBL	79.01	86.34	76.29	77.18	81.88	83.84	86.76	81.61	4.26
CZBIL	76.96	72.78	69.25	78.68	78.95	76.94	77.53	75.87	3.56
PCBL	90.53	80.30	55.36	65.83	72.44	70.76	80.62	73.69	11.43
SRBL	64.84	49.64	77.56	73.53	85.03	80.22	79.56	72.91	12.06
PRABH	87.58	92.26	74.21	73.43	73.40	79.01	65.13	77.86	9.29
NMB	39.27	49.11	64.50	75.04	82.19	82.11	88.56	68.68	18.55
Mean	75.13	75.99	61.90	68.73	81.08	79.59	83.56		
SD	13.81	17.04	13.54	13.68	10.72	14.36	10.13		

Source: Annual audited financial Statements of Commercial Bank

As indicated by the table the average change in risk weighted assets varies within the individual banks also. It increased from 51.19 percent to 94.52 percent for NBL, 69.99 percent to 78.76 percent for NABL, 85.73 percent to 86.75 percent for NIBL, 54.04 percent to 79.48 percent for SCB, 83.72 percent to 92.15 percent for NBB, 73.69 percent to 79.54 percent for EBL, 78.51 percent to 92.87 percent for BOK, 81.92 percent to 112.75 percent for ADBL, 79.01 percent to 86.76 percent for GIBL, 76.96 percent to 77.53 percent for CZBIL, 64.84 percent to 79.56 percent for SRBL and 39.27 percent to 88.56 percent for NMB.

Similarly, risk weighted assets decreased from 74.20 percent to 70.71 percent for SBI, 85.12 percent to 78.52 percent for MBL, 81.26 percent to 80.26 percent for KBL, 83.45 percent to 82.53 percent for LBL, 86.62 percent to 80.58 percent for SBL, 90.53 percent to 80.62 percent and 87.58 percent to 65.13 percent for PRABHU. Thus the variation in risk weighted assets as indicated by SD is lowest for CZBIL, GIBL, MBL, PRABHU, EBL, BOK, PCBL, LBL, SRBL, KBL, NABL, SBI, NBB, NIBL, NBL, ADBL, SCB, SBL and NMB.

The percentage of RWA is highest for PCBL in the year 2012, ADBL in the year 2013, 2016, 2017 and 2018, NBL in the year 2014, and NBB in the year 2015. Similarly it is lowest for NMB in the year 2016 and 2017, SBI in the year 2014 and 2016, and SCB in the year 2015, SBL in the year 2017 and PRABHU in the year 2018.

vii) Loan loss provision

Percentage of loan loss provision has been computed by dividing total loan loss provision of bank by total loans of the respective bank. It is also known as credit risk of the bank.

4.1.7. Structure and Pattern of Loan Loss Provision in Selected Nepalese Commercial Banks (in percentage).

Percentage of loan loss provision has been computed by dividing total loan loss provision of bank by total loans of the respective bank. It is also known as credit risk of the bank. This table shows the percentage of loan loss provision of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.7**Structure and pattern of loan loss provision in selected Nepalese commercial banks (in percentage).**

Banks/Year	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	13.84	11.36	6.09	5.63	5.74	5.27	5.01	7.56	3.53
NABL	1.88	1.47	2.29	2.43	2.87	2.68	2.71	2.33	0.50
NIBL	1.98	1.61	1.54	1.48	2.01	2.49	2.70	1.97	0.47
SCB	1.84	1.53	1.37	1.32	1.37	1.34	1.34	1.44	0.19
SBI	4.90	3.07	2.60	1.63	1.22	1.39	1.24	2.29	1.35
NBB	39.21	27.93	17.30	17.90	5.74	4.36	2.17	16.37	13.65
EBL	2.64	2.40	2.13	1.92	1.94	1.85	1.83	2.10	0.31
BOK	2.20	2.00	2.30	2.83	2.80	2.09	2.09	2.33	0.35
MBL	2.97	3.71	4.38	2.14	2.79	2.22	1.55	2.82	0.97
KBL	1.66	1.27	1.34	1.99	2.86	3.75	4.11	2.42	1.16
LBL	1.16	1.10	1.20	1.22	1.38	1.86	1.70	1.37	0.30
SBL	1.49	1.27	1.36	1.40	2.02	5.27	2.38	2.17	1.43
ADBL	14.91	16.72	14.57	14.17	13.11	9.44	7.93	12.98	3.16
GIBL	1.01	1.06	1.28	3.19	2.18	2.05	2.67	1.92	0.84
CZBIL	1.00	1.00	1.28	1.95	2.00	2.25	2.45	1.70	0.60
PCBL	1.00	1.00	1.10	1.25	1.45	2.44	2.13	1.48	0.58
SRBL	1.00	1.10	1.47	3.26	3.04	3.67	3.86	2.48	1.25
PRABHU	2.25	1.84	1.81	2.25	1.98	2.61	1.59	2.05	0.35
NMB	2.86	1.73	1.64	1.32	3.57	2.61	1.57	2.19	0.83
Mean	5.25	4.38	3.53	3.65	3.16	3.14	2.69		
SD	9.15	6.99	4.57	4.53	2.73	1.92	1.61		

Source: Annual audited financial Statements of Commercial Bank

The result shows that percentage of loan loss provision varied widely from one bank to another bank. The percentage of loan loss provision is largest for NBB (16.37 percent), ADBL (12.98 percent), NBL(7.56 percent), MBL (2.82 percent), SRBL (2.48 percent), KBL(2.42 percent), NABL (2.33 percent), BOK (2.33 percent), SBI(2.29 percent), NMB (2.19 percent), SBL(2.17 percent), EBL (2.10 percent), PRABHU(2.05 percent), NIBL

(1.97 percent), GIBL (1.92 percent), CZBIL (1.70 percent), PCBL (1.48 percent), SCB (1.44 percent) and LBL (1.37 percent).

As indicated by the table the average change in loan loss provision varies within the individual banks also. It decreased from 13.84 percent to 5.14 percent for NBL, 1.84 percent to 1.34 percent for SCB, 4.90 percent to 1.24 percent for SBI, 39.21 percent to 2.17 percent for NBB, 2.64 percent to 1.83 percent for EBL, 2.20 percent to 2.09 percent for BOK, 2.97 percent to 1.55 percent for MBL, 14.91 percent to 7.93 percent for ADBL, 2.25 percent to 1.59 percent for PRABHU and 2.86 percent to 1.57 percent for NMB.

Similarly, it increased from 1.88 percent to 2.71 percent for NABL, 1.98 percent to 2.70 percent for NIBL, 1.66 percent to 4.11 percent for KBL, 1.16 percent to 1.70 percent for LBL, 1.49 percent to 2.38 percent for SBL, 1.01 percent to 2.67 percent for GIBL, 1 percent to 2.45 percent for CZBIL, 1 percent to 2.13 percent for PCBL and 1 percent to 3.86 percent for SRBL. Thus, the variation in risk weighted assets as indicated by SD is lowest for SCB, LBL, EBL, PRABHU, BOK, NIBL, NABL, PCBL, CZBIL, NMB, GIBL, MBL, KBL, SRBL, SBI, SBL, ADBL, NBL and NBB.

viii) Loan to deposit percentage

Percentage of loan to deposit has been computed by dividing total loans of bank by total deposit of the respective bank.

4.1.8. Structure and Pattern of Loan to Deposit Percentage in Selected Nepalese Commercial Banks (in percentage).

Percentage of loan to deposit has been computed by dividing total loans of bank by total deposit of the respective bank. This table shows the percentage of loan to deposit of 19 commercial banks of Nepal within the period of 2012 to 2018.

Table 4.8

Structure and pattern of loan to deposit percentage in selected Nepalese commercial banks (in percentage)

Banks/Year	2012	2013	2014	2015	2016	2017	2018	Mean	SD
NBL	37.69	43.28	58.42	57.05	52.98	60.1	59.85	52.77	8.87
NABL	68.18	73.87	71.17	78.29	77.91	74.9	74.55	74.12	3.57
NIBL	79.91	78.86	81.74	83.54	75.3	76.4	72.4	78.31	3.86
SCB	46.95	39.27	45.98	49.11	55.13	58.63	56.87	50.28	6.94
SBI	88.32	55.84	51.48	51.2	49.62	49.55	65.54	58.79	14.18
NBB	87.01	91.33	78.36	79.78	58.19	66.31	66.59	75.37	12.06
EBL	78.56	73.43	76.24	76.98	73.22	76.57	78.01	76.14	2.09
BOK	80.51	82.65	83.9	85.43	77.3	83.21	84.61	82.52	2.78
MBL	80.74	83.25	80.78	89.77	74.62	79.79	79.56	81.22	4.58
KBL	90.2	94.17	79.45	87.87	82.33	79.47	82.7	85.17	5.67
LBL	89.72	83.88	81.49	84.1	73.13	77.43	75.5	80.75	5.75
SBL	93.03	85.18	83.65	83.43	79.42	83.55	79.02	83.90	4.64
ADBL	112.44	108.93	121.9	117.38	104.06	100.81	94.8	108.62	9.49
GIBL	79.13	77.15	84.82	86.48	75.41	79.13	82.26	80.63	4.05
CZBIL	78.51	71.24	76.86	92.85	83.06	78.97	82.87	80.62	6.71
PCBL	96.75	83.45	78.86	90.35	80.41	75.56	87.73	84.73	7.35
SRBL	94.54	74.53	81.57	92.86	79.01	79.08	81.84	83.35	7.48
PRABHU	89.77	76.68	76.05	81.72	67.76	70.56		77.09	7.91
NMB	120.96	76.78	78.44	88.16	78.01	76.2	76.73	85.04	16.37
Mean	83.84	76.51	77.43	81.91	73.52	75.06	76.75		
SD	19.08	16.36	15.37	15.68	12.64	10.91	9.66		

Source: Annual audited financial Statements of Commercial Bank

As indicated by the table the average change in loan to deposit percentage varied within the individual banks also. It increased from 37.69 percent to 59.85 percent for NBL, 68.18 percent to 74.55 percent for NABL, 46.95 percent to 56.87 percent for SCB, 80.51 percent to 84.61 percent for BOK, 79.13 percent to 82.26 percent for GIBL, 78.51 percent to 82.87 percent for CZBIL.

Similarly, it decreased from 79.91 percent to 72.4 percent for NIBL, 88.32 percent to 65.54 percent for SBI, 87.01 percent to 66.59 percent for NBB, 78.56 percent to 78.01 percent for EBL, 80.74 percent to 79.56 percent for MBL, 90.2 percent to 82.7 percent for KBL, 89.72 percent to 75.5 percent for LBL, 93.03 percent to 79.02 percent for SBL, 112.44 percent to 108.6 percent for ADBL, 96.75 percent to 87.73 percent for PCBL, 94.54 percent to 81.84 percent for SRBL, 89.77 percent to 70.56 percent for PRABHU, 120.96 percent to 76.73 percent for NMB. Thus, the variation in LDR as indicated by SD is lowest for EBL, BOK, NABL, NIBL, GIBL, MBL, SBL, KBL, LBL, CZBIL, SCB, PCBL, SRBL, PRABHU, NBL, ADBL, NBB, SBI and NMB.

LDR is highest for NMB in the year 2012, ADBL in the year 2013, 2014, 2015, 2016, 2017 and 2018. Similarly, it is lowest for NBL in the year 2016, SCB in 2017 and 2018, 2014, 2015 and SBI in 2012 and 2013.

ix) Inflation and real GDP growth

Macroeconomic variables like inflation and real GDP growth have been used in the study as control variables from the year 2012 to 2018. The percentage of inflation and real GDP growth is shown in the table 4.9.

The patterns of selected macroeconomic variables of Nepal are presented on table 4.9. The table shows that inflation varied from 5.62 percent in 2012 to 8.76 percent in 2018. Likewise real GDP growth of Nepal varied from 6.1 percent in 2016 to 5.48 percent in 2018.

Inflation is largest in the year 2013 followed by 2014, 2015, 2017, 2018, 2016 and 2012. Likewise, GDP growth is largest in the year 2012 followed by 2018, 2016, 2014, 2013, 2015 and 2017.

Table 4.9

Structure and pattern of inflation and real GDP growth in Nepal from the year 2012 to 2018 (in percentage).

Year	Inflation	GDP Growth
2012	5.62	6.1
2013	15.91	4.53
2014	15.15	4.82
2015	10.81	3.42
2016	6.56	4.85
2017	6.78	3.01
2018	8.76	5.48
Mean	7.57	4.13
S.D	3.75	1.44

Source: Annual Report of Ministry of Finance

4.2 Descriptive Statistics

Descriptive statistics has been used to describe the characteristics of bank specific and macroeconomic variables during the study period. The descriptive statistics used in this study consists of mean, standard deviation, and minimum and maximum values associated with variables under consideration. Table 4.10 summarizes the descriptive statistics of bank specific and macroeconomic variables used in this study.

This table shows descriptive statistics- mean, standard deviation, minimum and maximum values- of bank specific variables and macroeconomic variables with 147 observations for bank specific variable for the period of 2012 through 2018 and 14 observations for macroeconomic variables for the period 2012 through 2018.

Table 4.10**Descriptive statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Problem loan	129	00	31.10	2.64	4.16
Operating expense	132	0.71	20.53	4.49	3.33
Capital adequacy ratio	133	17.86	21.90	7.36	5.17
Credit growth	28	27.15	924.72	32.47	83.68
Return on assets	33	0.50	27.00	1.91	2.82
Priority sector lending	29	0.29	2.35	3.59	1.88
Risk weighted assets	33	38.46	16.68	75.14	14.94
Loan loss provision	33	1.00	39.21	3.68	5.12
Loan to deposit %	32	37.69	21.90	77.86	14.67
Inflation	33	5.62	5.91	9.94	3.88
Real GDP growth	33	3.80	5.80	4.48	0.69
Bank Size	33	5334.30	108375.50	36180.10	22065.08

Clearly, problem loan ranges from zero to 31.10percent, leading the average problem to be 2.64percent .Likewise, operating expense of the banks ranges for 0.71 percent of the total assets to 20.53percent with an average of 4.49percent.

Capital adequacy ratio in banks ranges from -17.86percent to 21.90percent with an average of 7.36percent. Credit growth in banks ranges from -27.15percent to 924.72percent leading to an average of 32.47percent. The indicator of profitability; Return on assets ranges for -0.50percent to 27percent with an average of 1.91percent. Bank size indicated by total assets ranges from 5334.30 million to 108375.50 million with an average of 22065.08 million. Priority sector lending ranges from 0.29percent to 12.35percent leading to an average of 3.59percent. Risk weighted assets in Nepalese commercial banks ranges from 38.46percent to 116.68percent with an average of 75.14percent. Loan loss provision ranges from 1percent to 39.29percent leading to an

average of 3.68percent. The percentage of loan to deposit ranges from 37.69percent to 121.90 percent leading to an average of 77.86percent.

In case of control variables, inflation ranges for 5.62percent to 15.91percent with an average of 9.94percent and GDP growth ranges from 3.80percent to 5.80percent leading to an average of 4.48 percent. The variation as indicated by SD is highest i.e. 22065.08 million for the bank size and is lowest for real GDP growth i.e. 0.69 percent.

4.3 Correlation Analysis

Having indicated the descriptive statistics, the Pearson correlation coefficients have been computed and results have been computed in the Table 4.11 The specific variables used in this study are particularly, problem loans, operating expenses, capital adequacy ratio, return on assets, bank size, risk weighted assets, priority sector lending, foreign ownership, credit growth, percentage of loan to deposit and percentage of loan loss provision, inflation and real GDP growth. Therefore, it is reasonable to expect some kind of statistically significant relationship among these pairs of variables. This section therefore is devoted to explaining the direction and magnitude of relationship among different pairs of these specific variables. The correlation analysis has been performed for this purpose. Table 4.11 presents the value of bivariate Pearson correlation coefficient between different pairs of specific variables during the period 2012 through 2018.

This table reveals the bivariate Pearson correlation coefficients between different pairs of bank specific variables and control i.e. Macroeconomics variables. PL, OE, CAR, CG, ROA, BS, PSL, RWA, LLP, LDP, FO, I and GDP. The correlation coefficients are based on 147 observations for the period 2012 through 2018. ‘**’ sign indicates that correlation is significant at 1 percent level and ‘*’ indicates that correlation is significant at 5 percent level.

Table 4.11

Correlation analysis

	PL	OE	CAR	CG	ROA	BS	PSL	RW	LLP	LDP	F	I	GD
PL	1												
OE	.301*	1											
CA	-.49**	-.74*	1										
CG	.270*	-.75*	.030	1									
RO	-.41	.45	-.128	.062	1								
BS	.023	.128	-.61**	-.143	-.088	1							
PSL	.136	.223*	.311*	-.15*	-.072	.408*	1						
RW	.243*	.148	.196*	-.083	.012	.064	.408*	1					
LL	.858*	.310*	-.82**	-.111	.027	.093	.306*	.211*	1				
LD	.198*	.133	.450*	-.002	-.046	-.62**	.365*	.339*	.216	1			
FO	.063	.099	-.01*	-.109	-.103	.292*	-.102	-.14**	.143	-.49**	1		
I	-.115	.041	-.023	.010	.278	-.096	-.018	-.81**	.009	-.020	.0	1	
GD	.128	-.014	-.064	.101	-.058	-.81*	-.078	.119	.057	.102	.0	-.15**	1

The highest correlation has been observed to be 0.858 between problem loan and loan to deposit ratio. The lowest correlation of zero is observed between foreign ownership and inflation and foreign ownership and real GDP growth. Problem loan is positively related to operating expenses, credit growth, return on assets, bank size, priority sector lending, risk weighted assets, loan loss provision, and loan to deposit ratio, foreign ownership and GDP growth. Similarly, Problem loan is negatively related to bank's capital and inflation. Operating expenses, credit growth, return on assets, risk weighted assets and loan loss provision are significant at 1percent level of significance and loan to deposit ratio is significant at 5percent level of significance.

Likewise, operating expense is positively related to problem loans, return on assets, bank size, priority sector lending, risk weighted assets, loan loss provision, loan to deposit ratio, foreign ownership and inflation. Operating expense is negatively related to bank's capital, credit growth, and GDP growth rate. Bank's capital, credit growth and priority sector lending are significant at 5percent level of significance and loan loss provision is significant at 1percent level of significance.

The result shows that higher the problem loan higher would be the operating expense of the bank. Similarly, higher the loan loss problem i.e. credit risk, higher would be the problem loans and higher will be the operating expenses. The result also shows that higher the capital adequacy ratio lower would be problem loans because bank's capital provides cushion to the loss incurred by the problem loans. Likewise risk weighted assets is positively correlated to problem loan which indicates that bank with higher risk weighted assets have higher problem loans. From the results it also can be seen that, priority sector lending increases the operating expenses of the bank i.e. it reduces the cost efficiency of the bank. Credit growth is positively related to problem loans which indicate that with the increase in bank's credit there will be the increase in problem loans of the bank. As per the results profitability of banks do not have significant impact on the problem loans of the bank.

4.4 Regression Analysis

In order to test the statistical significance and robustness of the results, this study also relies on secondary data analysis based on regression model specified in chapter 3. It basically deals with regression results from various specifications of the model 1 to

examine the estimated relationship of problem loans with bank specific variables for cross-sectional data of 19 commercial banks that include 133 observations during the period 2016 through 2018. Similarly, it also deals with regression results from various specifications of the model 2 to examine the estimated relationship of operating expenses with bank specific variables for cross-sectional data of 19 commercial banks that include 133 observations during the period 2016 through 2018. This study also includes two macroeconomic variables, inflation and real GDP growth as control variables. In this section, an attempt has also been made to test the validity of the model through statistical test of significance such as t-test, F-test, and adjusted coefficient of determination (Adj. R²). The regression results have been reported in table 4.12 and table 4.13

4.4.1. Estimated Relationship between Problem Loans and Banks Specific Variables

In the table 4.12 model specifications 1 through 8 report the simple regression results, where problem loans have been regressed on various bank specific variables and macroeconomic variables as control variables individually. The specifications 9 through 12 report the multiple regression results, where bank specific and macroeconomic variables are taken together have been used as repressors. The Model is $PL = \beta_0 + \beta_1 CAR + \beta_2 CG + \beta_3 ROA + \beta_4 PSL + \beta_5 RWA + \beta_6 LDP + \beta_7 I + \beta_8 GDP + \varepsilon$ where PL=problem loan, CAR= capital adequacy ratio, CG=credit growth, ROA= return on assets, PSL=priority sector lending, RWA= risk weighted assets, LDP=loan to deposit percentage, I= inflation and GDP= real GDP growth.

The table indicates that the beta coefficients are negative for capital adequacy ratio, return on assets, and inflation. Thus, the results indicate that higher the capital adequacy ratio, lower would be the percentage of problem loans. Similarly, higher the return on assets, lower would be the percentage of problem loans. The beta coefficients are positive for credit growth, priority sector lending, percentage of loan to deposit, risk weighted assets, and real GDP growth. Credit growth and risk weighted assets are significant at 1 percent and percentage of loan to deposit is significant at 5 percent. Hence, the results indicate that higher the credit growth, higher would be the problem loans in the banks. Similarly, higher the risk weighted assets in the bank, higher would be the problem loans. The result also shows that higher the percentage of loan to deposit higher would be the problem loans in the bank.

Table 4.12

Estimated relationship between problem loans and banks specific variables

Model	Intercept	Regression coefficients of								R ²	SEE	F
		CAR	CG	ROA	PSL	LDP	RWA	I	GDP			
1	4.67 (7.88)	-0.27 (4.19)**								0.12	3.91	17.62
2	2.24 (5.78)		0.01 (3.12)**							0.07	4.06	9.66
3	2.76 (6.25)			-0.05 (0.45)						0.02	4.17	0.21
4	1.56 (1.93)				0.30 (1.53)					0.02	4.16	2.35
5	-2.37 (1.30)					0.05 (2.27)*				0.05	4.05	7.93
6	-1.56 (0.85)						0.06 (2.81)**			0.04	3.84	5.15
7	3.88 (3.85)							-0.12 (1.30)		0.01	4.14	1.70
8	-0.89 (0.36)								0.79 (1.45)	0.01	4.14	2.12
9	4.38 (7.41)	-0.31 (4.56)**	0.01 (3.48)**							0.20	3.77	16.01
10	4.76 (7.30)	-0.30 (4.72)**	0.01 (3.58)**	-0.16 (1.36)						0.22	3.76	11.36
11	2.40 (2.99)	-0.40 (6.24)**	0.02 (4.73)**	-0.15 (1.39)	0.80 (4.66)**					0.32	3.50	14.82
12	-2.55 (1.62)	-0.43 (6.88)**	0.02 (5.01)**	-0.18 (1.73)	0.54 (3.02)**		0.08 (3.62)**			0.40	3.33	15.67

Thus, relationship between capital adequacy ratio and problem loan is found to be negative which is as per the priori hypothesis and is consistent with the finding of Makriet.al.,(2018). Similarly, relation between credit growth and problem is found to be positive which contradicts with the finding of Grimardx (2002).A negative relation has been found between ROA and problem loans of bank is found, which is as per the priori hypothesis and is consistent with the finding of Ahmed and Bashir (2017) and Makriet.al.,(2018,) but contradicts with the findings of Boudrigaet. al., (2017) and Selma and Jouini (2017).Similarly, unlike the findings of Louzis et.al.,(2014), the relationship between inflation and problem loan is found to be negative and relationship between GDP growth and problem loan is found to be positive which is not as per the priori hypothesis.

4.4.2. Estimated Relationship between Operating Expenses and Banks Specific Variables

In the table 4.13 model specifications 1 through 7 reports the simple regression results, where operating expenses have been regressed on various bank specific variables and macroeconomic variables as control variables individually. The specifications 8 through 11 report the multiple regression results, where bank specific and macroeconomic variables are taken together have been used as repressors. The Model is $OE = \beta_0 + \beta_1 PL + \beta_2 CAR + \beta_3 BS + \beta_4 LLP + \beta_5 FO + \beta_6 I + \beta_7 GDP + \epsilon$, where PL=problem loan, CAR=capital adequacy ratio, BS=bank size, LLP=percentage of loan loss provision, FO=foreign ownership, I= inflation and GDP= real GDP growth.

Table 4.13

Estimated relationship between operating expenses and banks specific variables

Model	Intercept	Regression coefficients of							R ²	SEE	F
		PL	CAR	BS	LLP	FO	I	GDP			
1	3.78 (12.29)	0.23 (3.53)**							0.09	2.91	12.51
2	5.31 (10.67)		-0.11 (2.01)*						0.03	3.29	4.04
3	-2.42 (0.51)			0.67 (1.47)					0.02	3.31	2.27
4	3.74 (1.97)				0.20 (3.71)**				0.09	3.18	13.80
5	4.29 (12.70)					0.74 (1.14)			0.01	3.32	1.29
6	4.14 (5.18)						0.03 (0.46)		0.002	3.34	0.21
7	4.79 (2.50)							-0.06 (0.16)	0.001	3.34	0.026
8	4.39 (8.01)	0.19 (2.77)**	-0.07 (1.35)						0.10	2.91	7.21
9	-7.65 (1.65)	0.21 (3.02)**	-0.34 (0.63)	1.13 (2.62)*					0.15	2.84	7.32
10	-7.21 (1.56)	0.21 (2.99)**	-0.03 (0.57)	1.08 (2.43)*		0.28 (0.48)			0.12	2.85	5.51
11	-8.76 (1.42)	0.22 (3.22)**	-0.02 (0.43)	1.18 (2.54)*		0.27 (0.45)	0.10 (1.30)	-0.14 (0.33)	0.17	2.83	4.23

The table indicates that the beta coefficients are negative for capital adequacy ratio and real GDP growth. Capital adequacy ratio is significant at 5 percent level of significance. Thus, the result indicates that higher the bank's capital adequacy ratio, lower would be

the operating expenses which indicates higher cost efficiency of bank. The beta coefficients are positive for problem loan, bank size, loan loss provision, foreign ownership and inflation. Problem loan and loan loss provision are significant at 1 percent level of significance. The result thus indicates that higher the problem loans higher would be the operating expense of the banks indicating lower cost efficiency. Similarly, the results also show that higher the loan loss provision i.e. credit risk, higher would be the operating expense indicating lower cost efficiency.

4.5 Analysis of Primary Data

Primary data are collected from listed commercial bank and investors or depositors as well as individual academicians. More than one respondent have been included from the same organization as far as possible. The respondent of the data cover personalities involving in policy formulation with the position of NRB directives.

Table 4.14
No of Respondents

S. No.	Designation	Number
1	NRB Officials	10
2	Staffs of the commercial banks	12
3	Individual investors	6
4	Academicians	4
Total		32

Source: Field Survey, 2019

Table 4.14 shows that all together 32 respondents are selected in this section. In the first query that, How effective is the role of NRB in regulating and supervising of the commercial bank; 22 respondents were with the opinion that, they are highly effective (weight-3) while 10 respondents were with the opinion that, NRB plays good (weight-2) supervisory role for the commercial banks. The second query was that, Which supervisory system is the best; 20 of the respondents shows their both (onsite and offsite inspection) (weight-3) are good for controlling and monitoring; while 7 of the respondents were with the favor of onsite inspection (weight-2) and only 5 respondents were in favor of offsite inspection (weight-1). Third query was; to what extend are the

effect of the NRB Directives on commercial bank; 18 of the respondents agreed that it helps in promoting safe and sound banking system (weight-3), 10 of the respondent agreement to facilitate bank customers (weight-2) and 2 of the respondent agreed with the constraint bank activities (weight-1). The fourth query was what is the reason behind the changes made in the directives?, 16 of the respondents were in opinion with to develop the better financial institutions (weight-3). 12 people opines that to meet the international standard (weight-2) and 4 people said that the constraint bank activities (weight-1) and fifth questionnaire was to survey the opinion of the respondents why NRB directives are necessary to the commercial bank; 14 person said to protect interest of depositors (weight-3), 12 person said to enhance the creditability of the financial system (weight-2) and 4 person said to protect the financial institution (weight-1).

Table 4.15
Primary Data Analysis I

S.N.	Statement	Weight			Mean	Ranking
		1	2	3		
1.	How effective is the role of NRB in regulating and supervising of the commercial bank?	-	10	22	2.69	I
2.	Which supervisory system is the best?	5	7	20	2.47	II
3.	What are the effects of the NRB Directives on commercial bank?	2	10	18	2.38	III
4.	What is the reason behind the change made in the directives	4	12	16	2.37	IV
5.	Why NRB directives are necessary to the commercial bank?	4	12	14	2.19	V

Source: Field Survey, 2019

The respondent of the sample have been presented as it is, sum of the respondents didn't assign the rank for the given alternatives has been shown in the no response column. The first query indicates that the most of the respondent agree with the highly effective supervising and regulating role of NRB on commercial bank. The mean of the first query is near about the rank 5. It means the NRB regulating or supervising role is better for the commercial bank. The second questionnaire indicates that the more than 50 percent of respondents agree that the both onsite and offsite inspection system is the best. So the

NRB has always used to the onsite and offsite supervisory system. The third query finds out that the NRB directives support the commercial bank to promoting safe and sound banking system as well as facilitates the customers and the depositors. The fourth query indicates that the half of the respondent agrees with the better financial institution and most of the remaining respondents agree with to meet the international standard. Finally the fifth query indicate that all commercial banks has to necessarily implement the NRB directives which to protect the interest of depositors and to enhance the creditability of the financial system and to protect the financial institution.

Table 4.16
Primary Data Analysis II

S.N.	Statement	Weight			Mean	Ranking
		1	2	3		
1.	Are the commercial banks implementing the directives issued by NRB?	5	2	25	2.63	I
2.	Do you think it is necessary to implement the directives issued by NRB?	4	9	15	2.09	V
3.	Is there any access or shortfall in NRB directives?	9	5	17	2.19	IV
4.	What is the reason for setting capital adequacy norms?	6	7	18	2.31	III
5.	How your banks wish to meet the increase requirement capital as prescribed by NRB?	10	10	12	2.06	VI
6.	Who will be benefited most by maintaining capital adequacy requirement?	2	10	18	2.3	II

Source: Field Survey, 2019

Among the six alternatives provided, the respondents ranked that, the first query: Are the commercial banks implementing the directives issued by NRB; 25 respondents had the opinion in “yes” 2 respondents were with the negative opinion and 5 respondents were without any opinion. Most of the respondents agreed with the commercial banks were implementing the NRB directives regularly and minority of the respondent doesn't know about the NRB directives. The second query was that Do you think it is necessary to implement the directives issued by NRB; 15 respondent showed that they were agreed with the necessary implementation of the directives and remaining respondent don't

know about the NRB directives as well as they said that it is not necessary to implement the NRB directives on commercial banks.

Table 4.17
Primary Data Analysis III

S.N.	Statement	Weight			Mean	Ranking
		1	2	3		
1.	Are the commercial banks allowed free to set capital adequacy ratio by them?	2	4	25	2.66	I
2.	Whether loan and advance are reviewed on periodic basis?	3	8	20	2.47	IV
3.	Is capital adequacy requirement set by NRB adequate for regulation and supervision of commercial bank?	0	2	25	2.46	V
4.	Does the increase in requirement of Rs. 8 billion capital shall create a barrier for new entrants?	6	4	22	2.5	III
5.	Are the provisions in NRB directives about the black listing of the loan defaulter adequate?	6	10	16	2.31	VII
6.	Are you satisfied with the existing requirement of the percentage of the loan and an loss provision of NRB?	6	2	24	2.56	II
7.	Do you think that commercial bank will be affected by new directives relating to borrower limit?	5	3	24	2.41	VI

Source: Field Survey, 2019

The forth questionnaire was that, what is the reasons for setting capital adequacy norms; 19 respondent agreed with to protect the interest of depositors, 7 respondents said that to protect the interest of the borrowers and 6 respondents were in opinion that, to protect the financial institution. It means that more than 50percent respondent agreed with to protect the interest of the depositors for setting capital adequacy norms. The fifth query was How your bank wish to meet the increase requirement of capital as prescribed by NRB; 12 respondents were in the favor of increasing the core capital 10 respondents

were with their opinion by increasing the supplementary capital and only 10 respondents were in the favor of adopting mergers and acquisitions of the same category commercial banks. It indicates that, all respondents equally emphasized to increase the core capital, supplementary capital and merger and acquisitions of the same types of firms. Finally sixth query that, which will be benefited most by maintaining capital adequacy requirement; 18 respondents agreed that, the depositors would be benefited by maintaining capital adequacy requirement. 10 respondents agreed with the shareholder also be benefited and 2 respondent agreed that the others would be benefited, who are relating to the commercial banks.

The first query was that: Should the commercial bank allow free to set capital adequacy ratio by them; 25 respondents were not in the favor of setting capital adequacy ratio by commercial banks (weight-3). 4 respondents agreed to set Capital Adequacy Ratio by the commercial bank (weight-2) and 2 respondents don't know about the question (weight-1). The 2nd query that whether loan and advance are reviewed on periodic basis; 20 respondents were in the opinion to review the loan & advances on periodic basis regularly (weight-3), 8 respondents were not in the opinion of reviewing the loan & advance on periodic basis (weight-2). The third query was that capital adequacy requirement set by NRB is fit for regulation and supervision of commercial bank; 25 respondent agreed with the right to setting capital adequacy requirement by NRB for its effective regulation and supervision on commercial bank (weight-3) and only 2 respondent did not agree to set the capital adequacy requirement by NRB (weight-2). The fourth query was that Does the increase in requirement of Rs. 8 billion capital shall create a barrier for new entrants; 22 respondents were with the opinion that, although the new capital requirement Act will create a barrier for new entrants but in long-term it will benefit the bank and financial institutions (weight-3). 4 respondents were having neutral opinion regarding the new capital requirement Act (weight-2). 6 respondents were not in the favor of new CRA (weight-1). They were with the opinion that, it will stop the new players to make their entries in the banking industry. The fifth query was that are the provisions in NRB directives about the black listing of the loan defaulter adequate; 16 respondents were confirming that NRB have issued enough provisions to protect the banks from the defaulters (weight-3). 10 respondents still have their opinion that, the existing provision of NRB are not sufficient enough to protect the bank from defaulters (weight-2). 6 respondents were with the view that the NRB provisions can help to

protect the bank only to some extent by the loan defaulters (weight-1). The sixth query that, Are you satisfied with existing requirement for the loan and loan loss provision of NRB; 24 respondents showed their opinion that the loan and loan loss provision of present ratio is adequate to commercial banks (weight-3). More than 50percent respondent satisfied with the NRB loan loss provision directives, only 2 respondents would not satisfied with the present provision in NRB (weight-2) and 6 respondents did not know about the question (weight-1). Finally seventh query was that, Do you think that commercial banks will be affected by new directives related to single to borrower limit; 24 respondents expressed their opinion that it has not affected commercial bank activities (weight-3) and 5 respondents did not know about the question (weight-1); 3 respondents were of the opinion that, it is effecting the bank adversely (weight-2).

4.6 Concluding Remarks

This chapter discussed the results of analysis regarding the impact of Macro Economics Variables and Performance of Commercial Banks of Nepal. In case, structure and pattern of different bank specific and control variables, descriptive statistics, correlation analysis some diagnostic tests for linear regression model assumptions was presented. From the structure and pattern analysis of problem loans, commercial banks in Nepal had increasing pattern of problem loans in recent year. Similar slightly increasing pattern in operating expense in commercial banks of Nepal was noticed within the considered period of 2012 to 2018. From descriptive statistics, the level of problem loans of commercial banks of Nepal is found ranging from zero percent to 31.10 percent with an average of 2.64percent. Likewise, operating expense of the banks ranges for 0.71 percent of the total assets to 20.53percent with an average of 4.49 percent.

Eventually, the result shows that capital adequacy ratio, credit growth, loan to deposit percentage, priority sector lending, and risk weighted assets, were statistically significant factors that determine the problem loans of commercial banks in Nepal. The results indicate that higher the capital adequacy ratio, lower would be the problem loans. Similarly, higher the percentage of loan to deposit higher would be the problem loans. Likewise, higher the percentage of risk weighted assets higher would be the problem loans. However, the result did not support the significant effect of return of assets, inflation and real GDP growth.

Similarly, problem loans, capital adequacy ratio, bank size and loan loss provision were statistically significant factors that determine the cost efficiency of commercial banks in Nepal. The results indicate that higher the problem loans lower would be the cost efficiency of the banks. After the loans become past due or non-accruing, the bank begins to expend additional managerial effort and expense dealing with these problem loans. These extra operating costs include, but are not limited to the additional monitoring of the delinquent borrowers and the value of their collateral, the expense of analyzing and negotiating possible workout arrangements, the costs of seizing, maintaining, and eventually disposing of collateral if default later occurs and the additional costs of defending the bank's safety and soundness record which reduces the cost efficiency of banks. Similarly, higher the capital adequacy ratio higher would be the cost efficiency. However, the results did not support the significant effect of foreign ownership, inflation and real GDP growth.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the brief summary of the entire study and highlights the major findings of the study. In addition, the major conclusions are discussed in another section of this chapter which is followed by some implications and recommendations regarding the link between problem loans and cost efficiency and their determinants. Finally this chapter ends with the scope of the future study in the same field.

5.1. Summary

Financial stability in an economy is largely dependent on the stability and the resilience of the banking system. To accomplish banking stability the banks are required to maintain quality bank assets that aid in achieving profitability and achieve optimum cost efficiency. The failure to ensure banking stability can cause financial fragility and may lead to crisis scenarios in the event of market illiquidity and or bank contagion. The issue of problem loans and cost efficiency has gained growing attention in the last few decades in view of the established fact that the immediate consequence of bubbling up of problem loans in the banking system is bank failure. Many researches like; Demirguc-Kunt (1989) and Barr and Siems (1994) have established that loan quality is a statistically significant predictor of insolvency for the cause of bank failures and the failing banking institutions always have high level of problem loans priori to failure. Further, the problem of problem loans has become synonymous to functional and cost efficiency of financial intermediaries and believed to be the major causes of the economic stagnation problems.

There has been an increase in number of problem loans in banks both at matured and emerging economies. Banking sectors can perform worst as a result of inefficient cost management, low capital adequacy and poor assets quality. Problem loan is also the single largest cause of irritation of the banking sectors. Deterioration in loan quality is much more serious problem of bank unless the mechanism exists to ensure the timely recognition of the problem. It is a common cause of bank failure. Poor loan quality leads

problem loans that can seriously damage a banks' financial position having an adverse effect on bank's operation.

Problem loans have become synonymous to functional inefficiency of financial intermediaries and believed to be the major causes of the economic stagnation problems. As per the global financial stability report of international monetary fund, (IMF, 2017), identifying and dealing with distressed assets, recapitalizing weak but viable institutions and resolving failed institutions are stated as the three important priorities which directly relate to problem loans. It is obvious to note that better loan quality aids improvement in cost efficiency. In order to improve cost efficiency, it is imperative on the banks to manage their loan quality as well as determinants of problem loans as well as cost efficiency.

The objective of the study is to reveal the empirical relationship between problem loans and cost efficiency as well as the impact of various bank specific variables (capital adequacy ratio, percentage of loan to deposit, return on assets, bank size, risk weighted assets, priority sector lending, foreign ownership, credit growth and percentage loan loss provision to total loans) and control variable (inflation, real GDP growth) on problem loans and cost efficiency in commercial banks of Nepal.

The study is based on the secondary data which were gathered for a sample of 19 commercial banks of Nepal within the time period from 2012 to 2018, leading to the total of 133 observations. The secondary data have been obtained from Nepal Rastra Bank bulletin published by the central bank of Nepal, annual audited financial statements and websites of respective commercial banks. The pooled cross-sectional data analysis has been undertaken in the study. The research design adopted in this study is causal comparative type as it deals with relationship of bank specific factors like credit growth, loan to deposit percentage, return on assets, capital adequacy ratio, banks size, risk weighted assets, priority sector lending, percentage of loan loss provision and control factors like inflation and real GDP growth with problem loans and cost efficiency. The statistical methods used in the analysis are descriptive statistics, correlation analysis and regression analysis. Based on the analysis of data, the major findings of the study are summarized as follows:

1. The analysis of the structure and pattern of problem loans for the sample banks reveal that there is a wide deviation in problem loans among the banks. The bank with highest average problem loans is Nepal Bangladesh bank with mean of 11.46percent and the bank with lowest average problem loans is Everest bank with mean of 0.51percent.
2. Structure and pattern of operating expenses for the sample banks reveal that there is a wide deviation in operating expenses among the banks. The bank with highest average operating expenses is Prime commercial bank limited with mean of 12.43percent and the bank with lowest average operating expenses is Prabhu bank with mean of 1.21percent.
3. Structure and pattern analysis reveal that commercial banks in Nepal have increasing pattern of problem loans in recent year. Similarly, slightly increasing pattern in operating expense in commercial banks of Nepal has been noticed within the considered period of 2012 to 2018.
4. Structure and pattern of credit growth for the sample banks reveal that there is a wide deviation in credit growth among the banks. The bank with highest average credit growth is Prabhu bank with mean of 364.81percent and the bank with lowest average credit growth is Agricultural Development bank limited with mean of 9.15 percent.
5. Structure and pattern of priority sector lending for the sample banks reveal that there is no wide deviation in priority sector lending among the banks. The bank with highest average priority sector lending is Agricultural development bank limited with mean of 9.59percent and the bank with lowest average priority sector lending is Citizen bank international limited with mean of 2.83percent.
6. There has been significant increase in equity capital in commercial banks of Nepal within the study period but a significant decrease in loan loss provision has been observed during the study period. Similarly, a significant increasing pattern in priority sector lending and risk weighted assets has been observed.
7. From the descriptive analysis it has been revealed that there is wide deviation in the problem loans and operating expenses of commercial banks of Nepal which ranges from zero to 31.10percent and 0.71percent to 20.53percent respectively. Similarly, there is also a wide deviation in capital adequacy ratio in Nepalese commercial banks which ranges for -17.86percent to 21.90percent.
8. A wide deviation in credit risk and credit growth is also observed in commercial bank which ranges from 37.69percent to 121.90 percent and -27.15percent to 924.72percent respectively which shows that different banks have different methods of credit risk

management. Likewise, profitability of banks as indicated by ROA, also has varied widely ranging from -0.50percent to 27percent.

9. The highest correlation has been observed between problem loans and percentage of loan to deposit, which indicates that commercial banks with higher percentage of loan to deposit have higher percentage of problem loans supporting the argument of (Ranjan and Chandra, 2003) that percentage of loan to deposit also measures customer friendliness of banks implies that relatively more customer friendly bank is most likely face lower defaults as the borrower.
10. Similarly, a positive and significant relation between problem loans and risk weighted assets has been observed which indicates that banks with higher percentage of risk weighted assets have higher percentage of problem loans.
11. A negative and significant relationship between capital adequacy ratio and problem loans has been observed, which indicates that well capitalized banks are less incentive to take risk which reduces the percentage of problem loans in such banks. This finding is consistent with the finding of Makriet Al. (2018).
12. On the correlation analysis, a negative relationship has been observed between return on assets and problem loans of banks supporting the arguments of Selma and Jouini (2017) that states deterioration of profitability ratio measured in terms of ROA leads to riskier activities of banks and then raises the level of problem loans.
13. A positive relation has been observed between bank size and problem loans and priority sector lending and problem loans which indicate that larger banks have higher percentage of problem loans and higher the priority sector lending, higher will be the percentage of problem loans. Similarly, a positive and significant relation has been observed between priority sector lending and bank size, which indicate s that lager commercial banks have higher percentage of priority sector lending.
14. From the correlation analysis a negative and significant relation between operating expenses and capital adequacy ratio has been observed which indicates that highly capitalized banks have lower operating expenses i.e. higher cost efficiency, as such banks have enough capacity to cover the risk.
15. Unlike the findings of Hauner (2005), a positive relation has been observed between bank sizes and operating expenses in commercial banks of Nepal which indicates that larger banks in Nepal have higher operating expenses i.e. lower cost efficiency.
16. As per the correlation analysis a positive and significant relation has been observed between loan loss provision and operating expenses which indicates that higher the loan

loss provision (credit risk) higher would be the operating expenses i.e. lower cost efficiency of bank. This finding is consistent with the finding of Kwan (2001).

17. Unlike the findings of (Claessens et. al., 2001), no significant impact of foreign ownership have been observed in commercial banks of Nepal to achieve cost efficiency which indicates that increase in foreign ownership in domestic banks might not help banks to achieve cost efficiency by reducing operating expenses.
18. As per the results of regression analysis, a positive and highly significant impact of problem loans on operating expenses has been observed in case of Nepalese commercial banks which indicates that banks with higher percentage of problems loans incur higher operating expense which results in poor cost efficiency.
19. Macroeconomic variables (inflation and real GDP growth) used as control variables in the study didn't show any significant impact on problem loans and cost efficiency of Nepalese commercial banks, which shows that problems loans and cost efficiency of Nepalese commercial banks are more influenced by internal bank specific factors rather than external macroeconomic factors.

5.2 Conclusion

The major conclusion of this study is that cost efficiency in commercial banks is highly influenced by the problem loans. After the loans become past due or non-accruing, the bank begins to expend additional managerial effort and expense dealing with these problem loans. These extra operating costs include, but are not limited to the additional monitoring of the delinquent borrowers and the value of their collateral, the expense of analyzing and negotiating possible workout arrangements, the costs of seizing, maintaining, and eventually disposing of collateral if default later occurs and the additional costs of defending the bank's safety and soundness record which reduces the cost efficiency of banks.

The study also concludes that that capital adequacy ratio, credit growth, loan to deposit percentage, priority sector lending, and risk weighted assets, are statistically significant factors that determine the problem loans of commercial banks in Nepal. Banks with higher capital are less likely to go for riskier lending and hence will face lower problem loans. Similarly, due to regulatory requirements on priority sector lending, banks are compelled to lend on risky projects which increases the probability of loans becoming

problematic. The result did not support the significant effect of return of assets, inflation and real GDP growth. Similarly, problem loans, capital adequacy ratio, bank size and loan loss provision were statistically significant factors that determine the cost efficiency of commercial banks in Nepal. However, the result did not support the significant effect of foreign ownership, inflation and real GDP growth.

5.3 Recommendation

Based on the findings, the following recommendations have been made:

1. The study revealed that cost efficiency of Nepalese commercial banks is highly influenced by problem loans. Problem loans have negative and significant impact on cost efficiency which means increase in problem loans will increase the operating expenses. Hence, the banks willing to increase cost efficiency should reduce problem loans.
2. The study observed a positive and significant impact of percentage of loan to deposit on problem loans which indicate that commercial banks with higher percentage of loan to deposit have higher percentage of problem loans. So, banks willing to reduce problem loans should be conscious on keeping a balance between loans and deposits and focus on being more customer friendly.
3. The study observed positive and significant relation between problem loans and risk weighted assets which indicate that banks with higher percentage of risk weighted assets have higher percentage of problem loans. Therefore, banks willing to reduce problem loans should reduce investing in risky assets by focusing more on quality of assets and managing its risky portfolio.
4. The study observed a negative relationship between return on assets and problem loans indicating that profitable banks have low problem loans. Therefore, banks willing to reduce problem loans should maximize their profitability so that they don't have to go for lending in riskier assets.
5. The study observed a negative and significant relationship between capital adequacy ratio and problem loans. Hence, banks willing to reduce problem loans should focus on enhancing their capital, as well capitalized banks are less incentive to take risk which reduces the percentage of problem loans in such banks.
6. The study observed a positive and significant relationship between credit risk and operating expenses which indicates that higher the credit risk higher would be the

operating expenses. So, banks willing to increase cost efficiency should minimize risk associated with the credit.

7. The study observed a positive relationship between problem loans and priority sector lending which indicates that higher the priority sector lending higher will be the percentage of problem loans. Hence, banks willing to reduce problem loans should wisely invest in the sector prioritized by the central banks.
8. The study observed a negative and significant relation between operating expenses and capital adequacy ratio which indicates highly capitalized banks have high cost efficiency as such banks will have enough funds to cover risk. Hence, banks willing to increase cost efficiency should focus on enhancing their capital.
9. Empirical result suggests that macroeconomic variables (inflation and real GDP growth) used as control variables in the study didn't show any significant impact on problem loans and cost efficiency of Nepalese commercial banks, which shows that problems loans and cost efficiency are more influenced by internal bank specific factors rather than external macroeconomic factors. Therefore, banks should focus more on improving internal bank specific factors to reduce problem loans and enhance cost efficiency rather than investing their resource trying to control external factors.

REFERENCES

- Adhikary, D.K., R. Pant., and B. R.Daungana, (2018). *Study on Financial Sector reform in Nepal*. Prepared for South Asian Network of Economic Institutes (SANEI). Institute of development Economics. Quaid –i-Azam University, Islambad, Pakistan.
- Batra, S. (2010). *Developing the Asian markets through investment policy: Developments in India*. Retrieved from www.oecd.org, December 4, 2018
- Bennaceur and Neceur . (2008). The Determinants of Commercial Banks Interest Margin and Profitability.
- Berger, A., and D. Humphrey, (1992). Measurement and efficiency issues in commercial banking: Output Measurement in the Service Sectors. *National Bureau of Economic Research and Studies in Income and Wealth*, 56(4), 245-79.
- Besis, J. (2015). *Risk Management and investment policy in Banking*. Chichester: John Wiley and Sons Ltd
- Bhandari, D.R (2013). *Banking and Insurance: Principle and Practice*. Kathmandu: Aayush Publication.
- Chhetri, D. B. (2017). *Investment Policy for Reducing Non performing assets: A need for rationalization*, Kathmandu: Nepal Rastra Bank
- Clark, J. (1999). *International Dictionary of Banking and Finance*. New York: Glenlake Publishing Co. Ltd. and American Management Association.
- Devkota, B. (2018). *Comparative Analysis of Investment Policy of Nepalese Commercial Banks (Standard Chartered Bank Nepal Ltd., Nabil Bank Limited. and Himalayan Bank Ltd.)*, , An Unpublished Master's Degree Thesis, Nepal Commerce Campus, T.U.
- Dhanuskodi, R. (2017). *A Study on Investment policy of Financial Institutions with Special Reference to Commercial Bank of Ethiopia*, Jimma: A Research

Report submitted for the Fourth International Conference on Ethiopian Economy, Jimma University.

Fawad, A., and B. Taqadus, (2013). Explanatory power of macroeconomic variables as determinants of non-performing loans: Evidence from Pakistan. *World Applied Sciences Journal*, 22 (2), 243-255.

Goddard, Molyneux and Wilson. (2004). Dynamics of Growth and Profitability in Banking.

Grewal, T. S. (1974). *Investment policy*, New Delhi: Sultan Chand and Sons.

Grigorian. D and V. Manole (2008), “Determinants of commercial bank performance in transition: An application of data envelopment analysis”, World Bank Policy Research Working Paper 2850, June.

Gupta, S. P. (1991). *Statistical Method*, New Delhi: Sultan Chand and Publishers.

Habtamu, N. (2013): *Determinants of Bank Profitability: An Empirical Study on Ethiopian Private Commercial Banks*: Published thesis (MSC), Addis Ababa University.

Hennie, V. G., and Sonja B. B. (2010). *Analyzing banking risk and investment policy*. New York: The World Bank.

Holland, J. (1999). *International finance Management*. New York: Magrow Hill Book Company.

Kagri, P. (2011). Banking Reform and its Impact on Negeerian Economy; *Journal of African Economic Brief*, 13(4) 61-89.

Karki, B. (2017). *Investment Policy and Status of Non-performing Loans of Nepalese commercial banks*, An Unpublished Master’s Degree Thesis, T.U.

Klein, N. (2013) *Nonperforming loan in CESEE: Determinants and Impact on Macroeconomic Performance*, IMF working Papers 13(72)

Kothari, C R. (1990). *Research Methodology, Methods and Techniques*. New Delhi: Whilley Eastern Ltd.

- Kundu, S. R. (2017). *Investment policy and Performance of Non-Performing Assets*, Islamabad: A Research Article submitted for the Fifth International Conference on Banking Scenario, Islamabad University.
- Lamsal, M. (2017). *NRB Directive: Bankers Plea for Lighter Structure*. Kathmandu: New Business Ag
- Nepal Government, (2018). *Economic Survey*, Ministry of Finance, Kathmandu
- Nepal Rastra Bank. (2002). *Basle Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standard, Basle 1988*. Kathmandu: NRB.
- Nepal Rastra Bank. (2006). *Capital Adequacy Framework*. Kathmandu: Accord Implementation Group, Nepal Rastra Bank.
- Nepal Rastra Bank. (2006). *International Convergence of Capital Measurement and Capital Standards: A Revised Framework, (updated November 2005)*. Kathmandu: Basel Committee on Banking Supervision, NRB.
- Nepal Rastra Bank. (2014). *On Site Inspection Manual For Commercial Banks and Finance Companies*. Kathmandu: NRB, Volume II.
- Nepal Rastra Bank. (2014). *Unified directives issued to banks and financial institutions, issued by Nepal Rastra Bank*. Kathmandu: Bank & Financial Institution Regulation Department.
- Nepal Rastra Bank. (2018). *Banking and Financial Statistics*. Kathmandu: Banks and Financial Institutions Regulation Department.
- Nimer, M.A., L. Warrad, and R.A.Omari,(2013). *The Impact Of Liquidity on Jordan Bank's Profitability Through Return on Assets* methodology. *MPRA Working Paper*,21(12), 2218-2233
- NRB. (2018). *NRB Directive No. 1-2*. Kathmandu.
- Pandey I.M. (1997). *Financial Management*. New Delhi: Bikas Publishing House Pvt.
- Patheja, A. (1994). *Financial Management of Commercial Banks*. New Delhi: South Asia Publication.
- Sapkota, P. (2016). Investment Policy in Commercial Banks: Public versus Private, *Economics Journal of Nepal*, Kathmandu, 2(4):11-13.

- Selma, J. and Journi, T. (2013) *Determinants of Commercial Banks 'lending Behavior: Evidence from Turkey*: Journal of Empirical Research, 3(8):933-943
- Shaffer, S. (2004). External versus Internal Economies in Banking. *Journal of Banking and Finance*, forthcoming.
- Shrestha, M . B. (2017). *Analysis of Investment Policy of Nepal Bank Limited*. An Unpublished Master's Degree Thesis, Nepal Commerce Campus, T.C.
- Shrestha, M. B. (2017). *Nepal Rastara Bank Guidelines on Investment Policy of Commercial Banks in Nepal (A Case Study of Nepal Investment Bank limited.)*, An Unpublished Master Thesis, Shankar Dev Campus, T.U.
- Shrestha, M. B. and K. Chowdhury (2007). A consolidated effort for marketing in commercial banks. Economic review occasional paper, 19, 1-8.
- Sontakke, R., and C. Tiwari, (2013).Trend analysis of nonperforming asset in scheduled commercial banks in India; *International Journal of Application or Innovation in Engineering &Management (IJAIEEM)*,6(27), 30-39.
- Thakur, M. (2017). *Investment Policy of Nepalese Commercial Banks*, An Unpublished Master's Degree Thesis, Central Department of Management, T.U.
- Uprety, K. (2018). Effectiveness of Investment Policy of Public sector Commercial Banks (With Special Reference to Nepal Bank Limited and Rastriya Banijya Bank Limited, An Unpublished Master's Degree Thesis, Central Department of Management, T.U.
- Uprety, P. (2017). Effect of Investment Policy for the big loan defaulters; *Mirmire*, NRB booklet.
- Vaidya, S. (1997). *Money and banking*. Kathmandu: Pratibha Joshi Publication.
- Vincent O.O.& B. K. Gemechu (2013): *Determinants of Bank Long-Term Lending Behavior in the Central African Economic and Monetary Community (CEMAC)*, *Review of Economics &Finance*; 1923-7529-2013-02-107-08,
- Wolf, H. K. and Pant, P. R. (1998). *A Hand Book for Social Science Research and Thesis Writing*. Kathmandu: Buddha Academic Enterprises Pvt.