CREDIT RISK MANAGEMENT OF

NEPALESE COMMERCIAL BANKS

(With reference to EBL and NIBL)

A Thesis

Submitted By

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RECOMMENDATION

This is to Certify that the thesis

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Entitled:

"Credit Risk Management of Nepalese Commercial Banks"

(With reference to NIBL and EBL)

Has been prepared as approved by this department in the prescribed format of the Faculty of Management. This thesis is forwarded for Examination.

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VIVA-VOCE SHEET

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And found that the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for the Degree of **Masters of Business studies (M.B.S).**

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DECLARATION

I hereby declare that the work reported in this thesis entitled, *"Credit Risk Management of Nepalese Commercial Banks – With reference to NIBL and EBL"* submitted to Shanker Dev Campus, Faculty of management, Tribhuvan University, is my original work. It is done in the form of partial fulfillment of the requirement for the Degree of Masters of Business studies (M.B.S) under the supervision and guidance of **Asst. Prof. Ruchila Pandey**, Shanker Dev Campus, Kathmandu.

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Bimala Dangol

Kathmandu

Date: ……

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ABBREVIATION

A.D	Anno Domini
ADBN	Agriculture Development Bank of Nepal
AMC	Assets Management Company
B.S.	Bikram Sambat
CD	Credit deposit
CIB	Credit Information Bureau
CV	Coefficient of Variation
DRT	Debt recovery tribunal
EBL	Everest Bank Ltd.
Etc.	Etcetera
Fig	Figure
FY-	Fiscal Year
i.e.	For Example
JVBs	Joint Venture Banks
LLP	Loan Loss Provision
MBS	Masters of Business Studies.
NBL	Nepal Bank Ltd.
NPL	Non- performing loan
NP	Net Profit

NRB	Nepal Rastra Bank
PE	Probable Error
RAW	Risk Weighted Assets
RBB	Rastrya Banijya Bank
RI	Risk index
ROA	Return on assets
ROE	Return on equity
SCBL	Standard Chartered Bank Ltd.
S.D.	Slandered Deviation

CHAPTER-l
INTRODUCTION

1.1 Background of the Study

The sources of finance are the most essential elements for the establishment and operation of any profit and non-profit oriented institutions. Profit oriented institution usually obtain these sources through ownership capital, public capital, and financial institution such as bank in the form of credit and overdraft. Banking sector plays a vital role for the country's economic development. The pace of development of any country in this modern era largely depends up on the level of financial development, which is essential for economic growth and prosperity.

Financial institutions are resource mobilizing institution, which accept deposit from various sectors and must them in to the field of trade, industry, tourism etc. the world business scenario has been changing day by day very fast. The volume of international trade has been increasing year by year due to the globalization and economics liberalization: many international companies have been actively operating their business across the national boundaries. For example dominance of the joint venture banks in Nepal.

"Banking sector is largely responsible for collecting household saving in term of different type of deposit and regulating them into the society by lending them in different sectors of the economy. The banking sector has been expand in the most remote areas of the country and has experimental a good deal in the growth of the economy by lending its resources in small scale industries under intensive banking program that has enable the banks to share economic growth of the country. "*(Shrestha, 1993:32)*

Credit risk is most simply defined as the potential that a bank borrower or counter party will fail to meet its obligations in accordance with agreed terms. Anthony Saunders defines the credit risk as "the risk that the promised cash flows from loans and securities held by FIs (Financial institutions) may not paid in full". Credit risk involves inability or unwillingness of a customer or counter party to meet commitments in relation to lending, trading, hedging, settlement and other financial transactions. "credit risk is generally made up of transaction risk or default risk and portfolio risk."santomero(1997) Portfolio risk in turn comprises intrinsic and concentration risk. The portfolio risk depends on both external and internal factors. The external factors are state of the economy, wide swings in commodity/equity

prices, foreign exchange rates and interest rates, trade restrictions, economic sanction, Government policies etc. The internal factors are deficiencies in loan policies/administration, absence of prudential credit concentration limits, inadequately defined lending limits for loan officers/credit committees, deficiencies in appraisal of borrowers' financial position, excessive dependence on collateral and inadequate risk pricing, absence of loan review mechanism and post sanction surveillance etc.

Another variant of credit risk is counter party risk. Counter party risk comes from non-performance of trading partner. The non-performance may arise from counter party's refusal to perform due to an adverse price movement caused by systematic factors, or from some other political or legal constraint that was not anticipated by the principals. Diversification is the major tool for controlling nonsystematic counter party risk.

Counter party risk is like credit risk, but it is generally viewed as a more transient financial risk associated with trading than standard creditor default risk. In addition, counter party's failure to settle a trade can arise from other factors beyond a credit problem.

So, the goal of credit risk management is to maximize a bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual creditors or transactions. Bank should also consider the relationship between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization.

1.2 Brief Profiles of Banks Under Study

1.2.1 Everest Bank Ltd.

Everest bank limited (EBL) started its operations in 1994 with a view and objectives of extending professional zed and efficient banking service to various segment of the society. The bank is providing customer-friendly service through its branch network. All the branches of the bank are connected through anywhere branch-banking system (ABBS), which enables costumers for operational transaction from any branches. With an aim to help Nepalese citizens working abroad, the bank has entered into arrangement by the Nepalese citizens in countries like UAE, Kuwait, Bahrain, Qatar, Saudi Arabian, Malaysia, Singapore and U.K banks has set up its representative offices at bank has set up its representative offices at a new

Delhi (India) to support Nepalese citizens remitting money and advising banking related services.

1.2.2 Nepal Investment Bank ltd.

Nepal Investment Bank ltd. (NIBL), previously Nepal induces bank ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital) was credit areoles endorsee, a subsidiary of one the largest banking group in the world.

With the decision of credit areoles endorsee to divest, a group of companies comprising of bankers, professional, industrialists and businessman, has acquired on April 2002 the 50% shareholding of a credit areoles endorsee in Nepal indorse bank. The Nepal investment bank Ltd. upon approval of bank's annual general meeting, Nepal Rastra Bank and company registrar's office with the following shareholding structure.

- A group of companies holding 50% of the capital.
- Rastriya Banijya bank holding 15% of the capital.
- Rastriya Bema Sansthan holding the same percentage.

The remaining 20% being held by the general public (which means the NIBL is a company listed on the Nepal stock exchange.

1.3 Focus of the Study

The risk on banking industry has also made a mark all together in our context the present situation of Nepalese economy is not so good for any kind business. Banking business also depends up on the lending business too. So, it is also known as a risky business. At present situation most of Nepalese bank has suffered from the credit risk, which associated with non-payment and default of loan by the borrowers. Due to the excessive amount of non-performing assets in commercial bank, there is the wide extend doubt on the performance of the commercial banks. The presented study is main focus of the follows:

- The risk exists throughout the banking business.
- The techniques of credit risk management.
- The framework of risk management.
- The present central banks plans to control banks credit risk portion.
- The present scenario of commercial bank with regard to credit risk management.

1.4 Statement of Problem

Nepal is a small and landlocked country with small economic market. Economic condition of country is decreasing due to the political conflict since 2052 B.S. still now. Overall economic sector either manufacturing or commercial have heavy losses. But financial institutions are increasing regularly. Liquidity is at maximum level with the financial institution
Due to the unhealthy competition the recovery of bank credit is going towards negative. Non-performing credit of commercial banks are increasing day by day. The source and failure of commercial banks depends up on the total credit risk management of commercial banks. It is important to determine the factors affecting the default risk and its management. This study relates how the joint venture bank of Nepal manages the credit risk. Specially, the study is expected to reveal the following research questions.

- How the banks under study are managing their credit risk?
- What are the main causes of increasing credit risk in commercial banking sector?
- Is the proper investment policy & practices do assists to decrease credit risk?
- How to make optimal management of credit risk?
- What are the main causes of highly increasing credit risk in commercial banking sectors?
- What is the effective that has been caused by non-performing assets of finance companies on their profitability and liquidity management?

1.5 Objective of the Study

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

1. To study credit risk of selected banks in Nepal.
2. To study the loan loss provision and non-performing assets of management of commercial banks.
3. To explore the composition of securities against loan and advance and risk weighted assets associate loan and advances selected banks.
4. To analyses response on effective credit management.

1.6 Significance of the Study

Lending is one of the major functions of the banks, which play the significant impact in bank liquidity and profitability. In today's competitive scenario several macroeconomic forces such as PESTLE have increased and created challenges to the banking sector. Therefore, the success of any organization depends up on how properly the institution can manage the different risk. It will provide valuable insight to different stakeholder regarding for its management.

- This research identifies credit risk and related factors of commercial banks, their risk management styles & Orb's guidelines.
- Individuals, who have interest to know in Nepalese financial sector and banking sector, will be benefited.
- Investor and depositor also can know about the credit risk with these banks to carryout business.
- Students and teachers will also benefit from this research paper.

1.7 Limitations of the Study

As the study is being carried out in a partial fulfillment of the requirement for the degree, master in business studies, it processes a number of limitations of its own kind. The main limitation of this study is as follows:

- The sample may not fully represent the risk management practices of the Nepalese Commercial banks.
- The study covers recent six years' data 2063/64 to 2068/69 regarding to credit risk management.
- The study depends up on the published documents of banks such as balance sheet, profit and losses account etc.
- The study deals with only two commercial banks and data related to other.
- Lack of the sufficient data time and resources are the major limitations.
- The study has been conducted to meet partial fulfillment of the requirement for the master of business study of faculty of management, T. U.
- The study mainly based on secondary data collected from different sources

1.8 Organization of the Study

The whole study is categorized into five chapters.

Chapter 1: Introduction

This chapter includes background of the study introduction of commercial banking industry of Nepal, brief introduction of joint venture banks, focus of the study, statements of problem, objective of the study, significance of the study, limitation of the study and organization of the study.

Chapter 2: Review of Literature

This chapter described about available literature and review. It is include conceptual / theoretical review, related studies and review of previous studies and previous studies

Chapter 3: Research Methodology

This chapter explains the research methodology used in the study, which includes research design, source of data, population and samples, method of data analysis etc.

Chapter 4: **Data analysis and presentation**

This chapter includes presentation and analysis of data and major finding.

Chapter 5: **Summary, Conclusion and Recommendation**

This chapter summarized the main conclusion that extract from the study, and giving suggestion & recommendations for

CHAPTER- II
REVIEW OF LITERATURE

This chapter presents the conceptual review of credit risk management including different types of risk, that exist in bank, credit risk management system and credit risk management frame work and techniques. The central bank's regulation regarding the risk management has been also reviewed. This chapter focuses on the review of literature relevant to understand credit and credit management of bank. There are some books, journals, articles, legal provision and other studies done related with lending and investment aspect of banks. Some of the relevant studies, literature on lending and investment are review below. This chapter is categories in to two different headings.

- Conceptual framework.
- Review of related studies.

2.1 Conceptual Frameworks

2.1.1. Meaning of Credit

"Credit is the amount of many lent by creditor to borrower either on the basis of security or without security. Credit and advances is an important item on the assets side of the balance sheet of commercial bank. Bank earns interest on credit and advances which is one of the major sources of income for banks. Bank prepares credit portfolio; otherwise it will not only effect debts but also affect profitability adversely." *(Vershney, Swaroop, 1994:6)*
"Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return of obligation repay on specified data on demand. Bank generally grants credit on four ways; *(Chhabra, taneja, 1991:4)*
Overdraft
Cash credit
Discount credit
Discounting of bills

For banks overall corporate strategy and strategies plan at the three critical components are needed. They are *(sinkey, 1998: 112)*

- Business plan

- Framework for risk management
- Strategies for corporate control

The modern strategies approach also includes two framework for risk management and strategies for completing in the components fits for the modern idea of the basic business of banking as measuring, managing and accepting risk. The banks objective is to manage value and risk by maximizing those or eliminating those that destroy value.

The main task of commercial bank is to collect funds as deposit through several sources and lend them to different sectors like; manufacturing, transportation trade, constructions, communication and other public utilities etc. Doing all these activities every bank has to face so many risks.

2.1.2 Meaning of Risk

"Risk refers to uncertainty on the investment faced by the investors. It is the possibility that actual outcomes may different from those expected. Risk can be defined as the possibility of deviation of the actual return from the expected return. Define risk, as the volatility of corporation market value risk management on the other hand, is the process of measuring of assessing risk and then developing strategies to manage the risk. In general, the strategies employed include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk, and accepting some of all of the consequences of a particular risk*."(Kupper, 2000:98)*

2.1.3 Credit Risk

Credit risk is defined as the possibility that a borrower will fail to meet its obligations, in accordance with the agreed forms and condition, credit risk is not restricted to lender doing activities only but includes off balance sheet and inter-bank exposures. Some previous research report and related literature were reviewed before starting to develop this proposal some are listed below.

Actually, credit risk involves inability or unwillingness of customer of counter party to meet commitment in relation to lending, trading, lodging, settlement and other financial transaction.

The modern strategies approach also includes a framework of risk management and strategy for completing in the market for corporate control. This risk management component fits for modern idea of the basic business of banking as managing, measuring, and accepting risk.

2.1.4 Types of Risk

Risk is usually defined by the adverse impact on profitability of several distinct source of uncertainty. More or less all-financial institutions have to manage the following faces of risks:

- Credit risk
- Market risk
- Liquidity risk
- Operational risk
- Country risk
- Legal risk
- Compliance risk
- Reputation risk

Broadly speaking there are four risks as per risk management guidelines, which surround financial sectors i.e. credit risk, market risk, liquidity risk and operational risk.

These risks are elaborated here under:

- **Credit risk**

This is the risk incurred in case of a counter-party default. It arises from lending activities, investing activities, and from buying and selling financial assets on behalf of others. This risk is associated with financing transactions I.e.:

- Default in repayment by the borrower
- Default in obliging the commitment by other financial institutions in case of syndicated arrangements.

It is the most critical risk in banking and one that most be managed carefully. It is also the risk that requires the most subjective judgment despite constant credit decisions process.

- **Market risk**

Market risk is defined as the validity of income or market value due to fluctuations in underlying market factors such as currency, interest rate, or credit spreads. For commercial banks, the market risks of the stable liquidity investment portfolio arise from mismatches between the risk profile of the assets and their finding. This risk involves interest rate risk in all of its components equity risk, exchange risk and commodity risk.

- **Liquidity risk**

The liquidity risk is defined as the risk of not being able to meet its commitments or not being able to unwind or offset a position by an organization in a timely fashion because it cannot liquidate assets at reasonable prices when required.

- **Operational risk**

This risk results from inadequacies in the conception, organization or implementation of procedures for recording any events concerning banks operations in the accounting system/ information system.

2.1.5 Credit Risk Management

Financial environment is dynamic. In this dynamic financial environment fluctuation in interstate exchange rates and commodity and real estate price are not something new. These fluctuations in economic and financial variables destabilize the corporate strategies and performance of banks. Thus it is necessary that banks have a framework of risk management. Effective credit risk management allows a bank to reduce risk and potential non-performing assets. Once bank understand their risk and there cost they will be able to determine their most profitable business. Therefore the bank must have an explicit processes and system. While talking about the credit risk management, five C's of credit worthiness should be considered and they are:

1. Character:

The good character and intention of the homeowner is very important and thus should be seriously considered. Information about the character of the client can be gathered from his working place, reference, neighbors and other places he is associated with. This job tediously but should be carried out for secure investment.

2. Capacity:

It can be describe as a customer ability to pay. It is measured by applicants past performance record for this an interview with applicants customers/ suppliers will further clammy the situation. The gross income expensed and not income should be analyzed whether the

borrower lives on salary/ wages borrower has extra income sources other than usual based which should be used to repay the scheduled installment should be considered.

3. Capital:

Capital provides a caution to absorb operating and losses that might otherwise impair debt repayment. This infarct's the insurance against the loans granted to the borrowers.

4. Collateral:

Sufficiency of collateral is necessary to ensure the recovery of loan. In case of default by any cause, the collateral kept should have value enough to recover the loan granted and interest bonus by it. It is recommended that only 50% of the value of collateral is granted as loan, but considering other factors like character of borrower and his credit worthiness', this percentage can be made flexible.

5. Conditions:

Borrowers may be subject to unfavorable economic condition beyond their control. Repayment depends not only upon character, capacity and other collateral but those factors over which the borrowers exercise little or no control. As for example: natural climates or derisive economic crises etc. risk depends upon the quality found in each 'C' and the combination of these five Cs, assuming the same conditions prevails; the following guidelines are suggested.

Table 2.1

Guidelines of Assessing Risk

Applicant character	**Credit Risk**
Character + Capacity	Very Low
Character + Capacity without capital	Low to moderate
Character + Capacity but insufficient capital	Low to moderate
Character + Capacity but impaired character	Moderate
Character + Capacity without character	High
Character + Capacity without capital	High
Character + No Capital + No capacity	Very high

Capital + No Character + No capacity	Very high
Capacity + No Character + No capital	Fraudulent

2.1.6. Credit Risk Management Techniques

"As the majority of bank assets are in the form of loan, as the lending function in simple and create the value of the bank. The main threat is the chance of the borrower not to pay the loan amount. So the proper careful management of the credit risk is very important. Merton and bodies have suggested three techniques for the managing the credit risk in their article published in the journal of banking and finance." *(Millee & Merton; 1895: 483 – 489)*

- **Risk based pricing:**

It has been established that risk based pricing required lenders to change the rate that compensates for the riskiness of the loan. The pricing procedure needs to be straight forward and not based solely an historical loan loss expansion. In practice, loan pricing tends to follow the prime rate plus loans. Because the prime rate is not the lowest rate that a bank charges the credit worthiest "Credit risk is generally made up of transaction risk or default risk and portfolio risk." *(Santomero, 1997:45).* The portfolio risk in turn comprises intrinsic and concentration risk. The portfolio risk depends up on both internal and external factors. The external factors are the state of economic, wide wings in commodity/equity prices, foreign exchange rate and interest rate a trade transaction, economic sanction, government policies etc. The internal factors and deficiencies credit concentration limits, inadequately defined lending limit for loan officers / credit committees' deficiencies in appraisal of borrower's financial position excursive dependence on collaterals and post inadequate risk, pricing absence of loan review mechanism and post sanction surveillance etc. Another variant of credit risk is counter party risk comes from non-performance of a trading partner. The non-performance many arise from counterpart's refusal to perform due to an adverse price movement caused by systematic factors of from its other political or legal constraint that was not anticipated by the principals. "For the banks overall strategy and strategic plan at least there critical components are needed. They are business plan, Framework of the risk management, and strategies for the corporate control."*(Sinkey, 1998:112).* Customers can negotiate from the prime rate. The discount prime rate is what bank use to attempt to compete with open market instruments such commercial paper and corporate bonds.

- **Assets restriction:**

Bank lenders and creditors have a claim on the borrower's assets. As long as the market value of assets exceeds the value of liabilities creditors are protected because proceeds from sales of assets cover the entire claim alternatively, as long as positive net worth exists business firms are not going to turn over the creditors assets that exceeds the value of claim against them. Restricting the variability of the value of assist are the basic ways of meeting this objectives. Restricting covenants is long agreement and the strength of bank customer relationships are practical ways that lender impose assets restriction or establish borrowers incentive for compliance.

- **Monitoring:**

If lender have a contractual might to monitor assets value continuously and to seize assets than loan losses can be minimized either by auditing assets values and seizing assets before short falls exist or by requiring the posted value of collateral assets to equal or the posted value of collateral assets to equal or exceeds the promised payment for private loan, which banks have considerable expertise in organizations monitoring without continuous surveillance is costing. Before providing credit to customer bank makes analysis of project from various aspect and angels. It will help the bank to see whether project is really suitable to invest or not for that bank needed to do a project appraisal is to achieve the guarantee of reasonable return from the project.

Before providing credit to customer, bank makes analysis of project from various aspects and angles. It will help the bank to see whether project is really suitable to invest or not. For that bank need to do a project appraisal. The purpose of project appraisal is to achieve the guarantee of reasonable return from the project. Project appraisal answers the following questions:

- Is the project technically sound?
- Will the project provide a reasonable return?
- Is the project is line with the overall economic objectives of the country?

Generally, the project appraisal involves the investigation from the following aspects. *(Gautam, 2004; 258)*

- Financial aspect
- Economic aspect
- Management (organization) aspect
- Legal aspect

2.1.7 General Risk Management Framework

Management of risk begins with identification and its quantification. It is only after risk are identified and measured that may decide to accept the risk or to accept the risk at a reduced level by undertaking steps to mitigate the risk either fully or partially. Hence management of risk may be sub-divided into following five processes.

a. Risk identification
b. Risk measurement
c. Rick pricing
d. Risk monitoring and control
e. Risk mitigation

Further approach to manage risk at transaction level i.e. at branch level where business transaction are undertaken and at aggregate level i.e. the sum of total of all transactions are undertaken at all branches differs.

A. Risk Identification: All transactions would have one or more of the major risks i.e. liquidity risk, interest rate risk, credit risk, operational risk, exchange rate risk and other with their manifestation in different dimensions. Although all these risk are connected at the transaction level and certain risk such as liquidity risk and interest rate risk can managed at the aggregate or portion level. Credit risk, operational risk and market risk arising from individual transaction can managed at transaction level on portfolio level.

B. Risk measurement: The risk measures seek to capture variations in earnings, market value, losses due to default etc. Arising out of uncertainties associated with various risk elements. Quantitative measures of risk can be classified in to three categories.

1. Sensitivity: Sensitivity captures deviation of a target unreadable due to unit movement of a single market parameter. Only those parameters, which drive the value of target variable, are relevant purpose. For e.g. change in market value due to 1% change in interest rate would be sensitivity based measure.
2. Volatility: It is possible to combine sensitivity of target variable with the instability of underlying parameters. The volatility characterizes the stability and instability or any random variable. The computations of historical volatility based on defined time series are given below.
   Volatility over the time horizon ‘T’ = Daily volatility X square root of ‘T’

3. Downside potential: Down side potential only capture losses ignoring profit potential. The downside risk has to components potential losses and probability of occurrence. Potential losses may be estimated but difficult lies in estimating probability hence downside risk measure require prior modeling of the probability distribution of potential losses but low probability of occurrence downside risk the must comprehensive measure of risk as if integrates sensitivity and volatility with the adverse effect of uncertainty. The value at risk measures downside risk.

D. Risk pricing: Banks have to maintain necessary capital at least as per regulatory requirement. The capital required is not without courts and another factor is probability of associated with tall risks. This also needs to be factored into pricing. Therefore banks should take into account the following i.e. cost of deployable funds, operating expenses, loss probability and capital charge. Proper risk pricing can reduce the uncertainties regarding time value of money.

E. Risk monitoring and control: The key driver in managing a business is seeking improvement in risk-adjusted return on capital (RAROC). There, approach to risk management cannot be separation or in standalone made. The approach to risk management cannot be separation or in standalone made. The approach to risk management centers on facilitating implementation or risk business policies simultaneously in a consistent way. Modern best practices consist or setting risk limits based on economic measure of risk while ensuring best risk adjusted return. For risk monitoring and control, requires strong management information system / well laid out procedure / comprehensive risk reporting framework/periodical review an evaluation.

F. Risk mitigation: Risk reduction is achieved by adopting strategies that eliminate or reduced the uncertainties associated with risk element. This is called “risk mitigation”. In banking sector, it comes across a variety of financial instrument and nos. of techniques that can be used to mitigate risk. For mitigating credit risk, banks have been using traditional technique such as collateralizations by securities or land property, real state property and third party guarantees etc.

2.1.8 Factor Affecting Credit Policy

The credit policy of a firm provides the framework to determine whether or not to extend credit and loan such to extend. The credit policy decisions of bank have two broad dimensions; credit standards and credit analysis. A firm has to establish and use standards to making credit decisions develop appropriate sources of credit information and methods of credit analysis.

Credit risk management strategy or the credit policy is a tool for analyzing and managing the credit risk. Generally the following factors are to be considered to make effective credit policy. It helps to get effective credit worthiness.

- **Industry environment**

  It determines the nature of the industry its attractiveness and the company's position within the industry, structural weakness of a company that is a disadvantaged, theaters first way out and security value.

- **Financial conditions**

  It determines the borrower's capacity to repay through cash flow as the first way out. The strength of second way out i.e. through collateral liquidation is also assessed. Further the possibility to fall bank on income of sister concern in case of financial crunch of the company condition.

- **Management Quality**

  It determines the integrity, competence and nature of alliances of the borrower's management team; weakness in replacements needs to be evaluated.

- **Technical strength**

  It determines the strength and quality of the technical support required for sustainable operation of the company in terms of manpower, the viability of the technology uses, availability of after sales services, cost of maintenance and replacement need to be evaluated.

- **Security Realization**

  It determines the control over various securities obtained by bank to secure the loan provided excitability of the security documents and present value of the properties mortgaged with the bank weakness in security threatens the ban's second way out.

2.2 Review of NRB Guidelines

Nepal Rastra Bank is a leader of money market. It is the chief of all the banks operating in the country. It supervises, regulates and control over the functions of commercial banks and other financial institutions. NRB has issued various directives to supervise and control commercial banks. It this present context, the directives are issued by NRB quite regularly. In 2010 NRB has issued unified directives of regulate all three categories of financial sectors in Nepal to ensure international standard functions. NRB (2010) prescribed following in different aspect of risk.

Directive No. 1: Capital Adequacy Ratio (CAR)

Capital adequacy ratio is the proportion of capital fund or shareholder equity on the total risk weighted assets of bank. In other words it is the capital portion that is used to finance the assets. The total risk weighted assets on their hand include both on and off balance sheet items, which has been rated with certain percentage of risk. The risk weighted assets ranges from zero for cash and 100% for loan and advances. The higher risk weighted assets means lower will be the capital adequacy ratio as CAR is the ratio between capital fund and risk-weighted assets. According to Unified directive 2010, the capital fun included two types of capital i.e. primary capital and secondary capital. Primary capital refers to core capital, which includes paid up capital; share premium, non-refundable preference share, general reserve fund, retained earnings, capital adjustment fund and other reserve. Supplementary capital refers to all reserve bank has made for specific purpose such as General loan loss provision, assets revaluation reserve, unused subordinated term debt, Exchange equalization reserve. Additional loan loss provision and investment adjustment reserve etc.

Directive No. 2: Credit Risk

Having exercised the powers conferred by Section 79 of the Nepal Rastra Bank act, 2002, the following Directives have been issued with regard to classification of credit/advances and provisions to be made for its possible loss by the institutions obtaining licenses from this bank to carry out financial transactions.

1. Classification of loans/advances:

Entire loans and advances extended by a licensed institution have to be classified as follows based on expiry of the deadline of repayment of the principal and interest of such loans/advances:

- **Pass:** Loans/advances which have not overdue and which are overdue by a period up to three months.
- **Sub-standard:** Loans/advances, which are overdue by a period from three months to a maximum period of six months.
- **Doubtful:** Loans/advances, which are overdue by a period from six-months to a maximum period of one year.
- **Loss:**Loans/advances, which are overdue by a period of more than one year.

The loans which are in pass class and which have been rescheduled/restructured are called as "the performing loan, and the sub-standard, doubtful and loss categories are called non-performing loans.

Note: Loans/advances also include bills purchased and discounted.

2. Additional Provisions Relating to Pass Loans:

a) The following loans may be included in the pass loan:
   - Loans/advances extended against the collateral of gold and silver.
   - Loans/advances of fixed receipts
   - Loans/advances of Government of Nepal securities and loans/advances made against the collateral of Nepal Rastra Bank bonds; Provided that the cases of the loans/advances against the fixed receipts or Government or Nepal securities of Nepal Rastra Bank bond as the additional collateral, such loans and advances shall also have to be classified in accordance with the directive referred to into Point No. 1 above.

b) The working capital loan having the deadline of up to one year for repayment may be included in the pass loan class. In case the interest to be received from the loans of working capital nature is not regular, such loans have to be classified on the basis of the duration of interest to be due.

3. Additional Provisions Relating to Loss Loans

In case there seem any of the following discrepancies in any of the following loans, whether or not the deadline for repayment of which is expired, such loans and advances has to be categorized as the loss loan:

- The market price of the collateral cannot secure the loans;
- The debtor is bankrupt or has been declared to be bankrupt'
- The debtor disappears or is not identified;
- In case non-fund based facilities such as purchased or discounted bills and L/C and guarantee which have been converted into fund-based loan, are not recovered within ninety days from the date of their conversion into loan;
- Loan is misused;
- Expiry of six months of the date of auction process after the loan could not be recovered or a case is pending at account under the recovery process;
- Providing loan to a debtor who has been enlisted in the blacklist of Credit Information Bureau Ltd.
- The Project/business is not in a condition to be operated or project or business is not in operation;
- The credit card loan is not written off within 90 days from the date of expiry of the deadline;
- While converting the L/C, guarantee and other possible liabilities into a fund based loan under the regular process, if the said loan is not recovered within 90 days; and
- In case of expiry of the deadline of a trust-receipt loan.

4. Loan Loss Provisioning

The loan loss provision on the basis of outstanding loans and advances and bills purchase are classified as per new unified directives 2010, shall be provided as follows

Table no. 2.2

Classification of Loan	**Loan loss provision**
Good	1%
Sub-standard	25%

Doubtful	50%
Bad	100%

(*Sources: NRB guidelines*)

Loan loss provision set sideways for performing loan is defined as General loan loss provision and provision for non-performing loan is defined as specific loan loss provision. Excess portion of loan loss provision can included is supplementary capital.

5. Provisions Relating to Rescheduling and Restructuring of Loans

a) In case of licensed institution is convinced on the following bases stated in the written action plan submitted by the debtor, it may reschedule or draw back the loan: -
   - Evidence showing that documents relating to loans and security are sufficient;
   - Bases on which the licensed institution is convinced of the possibility that the rescheduled or restructured loans would be recovered;
   - In addition to submission of written plan of actions for rescheduling and restructuring loans at least 25 percent of the interest due to be paid until the date of rescheduling or restructuring of such a loan has been paid;

b) While rescheduling or restructuring the loans to the industries which have been recommended by the Sick Industries Preliminary Inquiry and Recommendation Committee formed under Government of Nepal, a minimum of 12 percent of interest has to be paid, other procedures need to be fulfilled and rescheduling and restructuring shall have to be carried out making a provision for twenty-five percent loan loss. Provided that in the event where the loan has been rescheduled and restructured based on payment of less than 12 percent of interests, provision for loan loss has to be made based on the duration upon expiry of the deadline according to the prevailing provisions.

c) Description of the loans classified pursuant to classes (1) and (2) has to be separately prepared.

2.2.2 Review of Journal / Articles

Neupane, (2001) has published an article on *"Bad Loan of Banking Sector – Challenges, and Effort to Resolve It"* has thrown some regarding bad loan of banking sector. As mentioned by him there were various type of risk integrated in the credit, one who manages risk, earn profit. He further added that the recent financial crises in banking sector is due to weak accounting procedure, defect in loan classification, lack of clearness, loss control measure

etc. Like the other writers he also started that NPA is the indicator of financial crises in banking sector is due to weak accounting procedure, defect in loan classification, lack of clearness, loss control measure etc. Like the other writers he also started that NPA is economic slowdown, recession, bad aim of the borrower, lack of credit cost and reduce profit-earning capacity of the bank. The international standard of acceptable non-performing loan is 4% but there is around 26% non-performing loan of two nationalized bank. The writer suggested internal and external measure of reducing classification of loan and its advances and providing provision of probable loss and external measure comprises of help form credit information bureau (CIB), Appointment of assets management company (AMWC) and debt recovery tribunal (DRT)

Dhungana, (2002) has published an article on*" Why Assets Management Company is Consider the Best Option to Revolve the Non-performing Loan Problems?"* tried to emphasizes one approach mainly Assets Management Company (AMC) for resolving the problems of non-performing loan. As per him, AMC is the specialized financial intermediary to manage non-performing loan from financial institution and take necessary steps to recover the maximum value from the acquired assets. If non-performing loan are not resolve in time, those would not be inherent direct of interest costs to the economy. As stated by him, non-performing loan may arise due to the external factors like decrease in market value of collateral, deterioration in borrower's repayment capacity, economic slowdown, and borrower's misconduct. Improper credit appropriable system, lack of risk management practices, ineffective credit monitoring and supervision system, lack of risk management practice, ineffective credit monitoring and supervision system. Hence he suggested that NPL should be kept at minimum level and the specialization institution such as AMC's should mange the distress loan.

He says that both traditional approach and AMC are available to pact with non-performing loan problems. Under the traditional approach, Bank handles the NPL in its own way particularly the borrower and give top precedence to loan recovery. As opines by the write this approach is useful in dealing with small business loans where personal touch in adopted. Big loan does not work. "AMC seems as the only realistic option when the financial sector recovery is the underlying objectives in financial system where the institution fails to resolve the NPL problems thought their effort." He states that the main advantages of editions manner removing the distraction of managing non-performing loan from the banking system and free up resource within the financial institution allowing them to concentrate o their core activities.

Ghimire, (2003) has published an article on *"Credit Sector Reform and NRB" Has Tried to Explore the Effect of Change or Modification is NRB Directives Regarding Loan Classification and Loan Loss Provisioning.*" Although the circumstance lending to financial problems or cries in many Nepali Bank differs in much respect what is common across most or likely losses of this nature facing the industry NRB has as the central bank, amended several old directives and issued many new circulars in the recent years.

As opined by him, since majority of the loan of most of the commercial banks of the country at present falls under substandard, doubtful and even categories. Loan loss provisioning now compared to previous arrangement would be dramatically higher. The new classification and provisioning norms are very lent able as they help to strengthen bank financially. He added that we also must remember the old system from 1991 to 2001, which was probable the most explosive decade of the business operation of the country. He has indicated that loan loss provisioning as a percentage of total credit is 5.2% in fiscal year 2003, it jumped to 18.39%. It only private banks are considered, it is 2.12% in fiscal year 2001 where as it is 30% in fiscal year 2003. He has also stated that tightening provisioning requirement on NPA is essential to ensure that banks remain liquid even during economic downturn.

Shrestha, (2005) has published an article on *"Lending Operations of Commercial Bank of Nepal and Its Impact on GDP"* presented the objectives to make an analysis of contributions of commercial bank's lending to the Domestic product (GDP) of Nepal. She has set a hypothesis that there has been positive impact of lending of commercial banks to the GDP. In research methodology, she has considered GDP as the dependent variable and various sectors of lending Viz. agriculture, industrial, commercial, service, general and social sectors as independent variables. A multiple regression technique has been applied to analyze the contribution.

The multiple analysis have shown that all the variable expect service sector lending have positive impact on GDP. Thus in conclusion, she has accepted the hypothesis, i.e. there has been positive impact on GDP by the lending of commercial banks in various sectors of economy, except service sector investment.

2.2.3 Review of Thesis

Various studies have been conducted on the credit risk management and other related subject of different institutions and banks. Reviews of some of the thesis work are presented below:

Aryal, (2001) has submitted a thesis *on "An Evaluation of Credit Investment and Recovery of Financial Public Enterprise in Nepal",* a case study of ADBN. In his thesis he stated high interest rate of non-institutional sources; people are unable to pay their credit at fixed time. There institutions compel them to transfer their property to the moneylender resulting himself or herself as a landless person as a research statement of the problem. ADBN is one of the major financial institutions supporting for the people for the different purpose like agro, industry, tea, coffee, livestock farming etc. ADBN provides the credit for individual and co-operative sector to all region of the country. Credit outstanding amount is increasing day by day but the collection amount is not good. However, ADBN has increased its effort to collect its credit. It is said that those people who really need to do sufficient amount of credit from ADBN; So, Mr. Aryl chose this bank to analyze the credit disbursement and recovery pattern of ADBN. From his research, he has made some findings, which are shown below.

- Actual credit disbursement, collection and outstanding are increasing in decreasing rate.
- Yearly increase in credit disbursement is higher than that of collection.
- Positive relation between credit disbursement and collection that is 0.996
- Target credit collection and disbursement fixed by planning and project department is not significantly different than the actual.
- Most of the customers are unaware of the policy of the bank.

Aryl has concluded in his thesis that, the borrower should be informed about he credit, its use and its payment procedures and schedule.

- Greater attention should be given to increase the credit collection and to collect old outstanding amount of credit and renewal of it.
- To accelerate the collection, credit should be followed continuously in a regular interval of time.
- To behavior of the personal should be strictly supervised in granting credit in proper investment proposal because of most the bad credit disbursement is due to weak decision of the personal.

Pandey, (2002) has submitted a thesis on *"Credit Risk Management of Himalayan Bank Limited with Reference to Another Commercial Banks"* with the objectives to find out the

impact of change in NRB directives on the performance of the commercial banks and to find out whether the directives were implemented or not. According to his findings the directives if not properly addressed have potential to work the financial system of the country. The directives in themselves are not that important unless properly implemented. The implementation part depends upon the commercial banks. Incase commercial banks are making such huge profit with full compliance of NRB directives, then the commercial banks would deserve votes of praise because they would then be instrumental in the economic development of the country. All the change in NRB directives made impacts on the bank and the result are the following.

- Increase in operational procedures of the bank, which increase the operational cost of the bank.
- A short term decreases in profitability, which result to fewer dividends shareholders and less bonus to the employees.
- Reduction in the loan exposure of the bank, which decreases the interest income but increase the protection of the depositor's money.
- Increase protection to the money of the depositors through increased capital adequacy ratios and more stringent loan related documents.
- Increase demand form shareholder's contribution in the bank by foregoing dividends for loan loss provisions and various other reserves to increase cove capital.
- All the aforesaid result lead to one direction the bank will be financially healthy and stronger in the future. HBL will be able to with stand tougher economic situation in the future with adequate capital and provision for losses. The taught time through which the bank is undergoing at present will prevail only for a couple of year but in the long run, it will be strong enough to attract more deposits and expose itself to more risk with capital cushion behind it. The quality of the assets of the banks will become better as banks will be careful before creation credit, ultimately, the changes in the directives will bring prosperity not only to the shareholders but also the depositors and the employees and the economy of the country as a whole.

Pandey has made his research on the impact on changes in directives. In his study, he has studies only the provisions related to loan provisioning and capital adequacy. However, besides loan loss provision and capital adequacy, the other factors like concentration risk, sector-wise lending risk can further be discussed. A study on the organizational structure or management techniques applied for the proper implementation of NRB directives and for management of credit risk can also be made.

Shrestha (2005) has submitted a thesis on *"A* Study *on Non Performing Assets and loan loss Provision of Commercial Banks with Reference to NBL/NABIL/SCBNL"* has outlined her major finding are a follows.

It has been found that NBL has very portion of no performing loan resulting to higher provision. Hence even, the bank has higher investment in the most incomer generating assets i.e. loan advances, it is in loss, even the private sector bank like NABIL higher non-performing loan and accordingly higher provision. Its average proportion on non-performing loan during the study period is higher than the acceptable. However is recent two years NABIL's non-performing loan has shown significant decrement and accordingly provision has also decreased. Among the three banks, SCBNL has least non-performing loan and thus the least loan provision. It is also had in generating income. From these indicators, it can be said that SCBIL is the best among the banks. However SCBNL seems les oriented toward lending. Hence the lower percentage of NPL and providing of also due to relatively lower in loan and advances.

In her the conclusion "it can be said that ineffective credit policy, political pressure to lend to un-credit worthy borrowers, over valuation of collateral are the major causes of NPA is government owned banks like NBL. Other factor landing to accumulation of NPA are weak loan sanctioning process, ineffective credit monitoring and supervision system, economic slowdown, borrower's misconduct etc. in addition to this establishing recovery all hiring assets management company are also measure to resolve the problems of NPL. More provision has to be appointed landing to lesser probability. But this kind of negative impact is only for short period. Adequate provisioning strengthens the financial health of the bank and makes able to face any kind of future contingencies.

Mirsra, (2007*)* has submitted a thesis on *"Credit Risk Management of Everest Bank Limited"***,** illustrate that liquidity position: cash reserve ratio shows the more liquidity position. Cash and bank balance to current assets ratio shows that the bank is able to maintain good financial condition. Cash and bank balance to current assets ratio shows that the bank's ability to meet the daily ash requirement of their customer's deposit. That is why liquidity position of the bank is better.
In the aspect of profitability position, interest expenses ratio shows the more profitable salivation. In addition, total income to total expense ratio shows that the overall

predominance of the bank is satisfactory. Return on loan and advances shows profitable position of EBL. Analysis of asset management ratio, loan advance to total assets ratio shows the better performance but loan and advance to total deposit position is minimum than the average. Whereas, investment in loan and advance is safe and does not take any risk. That's why, assets management position of the bank shows better performance in the latest year. After analyzing the lending efficiency of the bank, the loan to provision to loan advances indicates the better performance in the latest year. The interest expenses to total deposit ratio shows the improving efficiency of the bank EBH has sufficient liquidity. It shows that the bank has not got investment sector to utilize their liquid money. This is to recommend that cash and bank balance of EBL is high banks' efficiency should be increased to satisfy the demand of depositors at low level of cash and bank balance does not provide returns to the bank. Therefore, some percentage of the cash and bank balance should be invested in profitable sectors. Bank should open up its remote areas with the objective to provide the banking services and minimum deposit amount should be reduced. The main objectives of this study are to evaluate the credit management and to examine the impact of deposit in liquidity.

Shrestha, (2007) has submitted thesis on, *"A Study of Non- Performing Loan and Loan Loss Provision of Commercial Bank"* with an objective to find out the relationship between loan and loan loss provision and impact of loan loss provision on the profitability of the commercial banks.

She has analyzed about proportion of non-performing loan in the selected commercial bank. At the same she has study and analyzes the guidelines and provision per tainting to loan classification and loan loss provisioning.

The major finding in her study was that the NBL has the highest portion of the loan in total asset followed by NABIL and SCBML. She concludes that the SCBL shows the risk – adverse attitude. Likewise the non-performing loan to total loan is found highest in NIBL, NABIL and SCBNL. Likewise, the loan loss provision is also highest in NBL where as the SCBL has the least loan loss provision.

Subba, (2008) has submitted thesis on *"Risk Management of Commercial Bank in Nepal"* Has made an attempt to find out risk management of commercial banks. He has concluded that:

Proper risk management is required competitive in the market and achieve the goals. The major banking risks include credit risk, market risk (i.e. liquidity risk, foreign risk, interest risk) and operation risk. Among these credit risk has the major impact on banking poor

management of assets and liabilities having different maturity period is the main problem that brings market risk.

Commercial banks (NIBL and kumara bank taken as sample) have their own set of policies and practices, which is in consistence with NRB guidelines. Operational risk can be reduce if banks take major steps in preparing and implementation the different operational guidelines and polices.

His study is made on credit risk, market risk (interest risk, foreign risk, and liquidity risk) and operational risk and their management in the key areas where further research can be made.

Regmi, (2009) has submitted a thesis named *"Credit Management of Commercial Banks With Reference to Nepal Bangladesh Bank Ltd. and Bank of Katmandu"*.

In his thesis, he has stated liquidity matters, unfair competition between banks and service institutions, lack of enough profitable investment sector, poor recovery process and lengthily and ineffective legal process in the recovery of credit as a statement of research problem.

Mr. Regmi has concluded in his thesis that, both of the banks have sufficient liquidity. It shows that banks have not got investment sector to utilize their liquid money; both of the banks have provided modern facilities to its customers and have used modern technology; non performing credit are increasing. So, he concluded that credit is not satisfactory; because of increasing in non-performing credit bank should increase its provision for credit loss; lack ness of efficiency in the management of credit become the process of recovery is slow; due to increase in the non-performing credit; bank's profit is decreasing year by year.

In his thesis he has recommended some suggestions, which are as follows:

- Cash and bank balance of both banks are high. Unused cash and bank balance do not provide return to the bank, therefore some percentage of cash and bank balance should be invest somewhere in profitable sector.
- Non-performing assets of both banks are high. It does not provide return to banks therefore bank should increase its effort to recover its credit on time.
- Weighted average capital funds of both banks are lesser than the required as per directive issued by N.R.B. Therefore, he suggested to increase the amount of the capital fund for overcome out from panelized by N.R.B.
- Fe customers are unsatisfied with the service charges and interest of credit; therefore, he suggested that banks should decrease service charge and interest charge.

Simkhada, (2010) has submitted thesis on, *"Credit Policy of Commercial Banks in Nepal"*, has the objective to provide the credit practices in NIBL and SBI bank. The specific objectives are:

- To examine the liquidity and assets management of NIBL and SBI.
- To evaluate the investment policy of NIBL and SBI.
- To study the growth ratio of loan and advances.
- To analyze the investment to total deposit and net profit NIBL and SBI.

The major findings of the study are:

- Both bank current assets have exceeded the current liabilities therefore the ratio is considered satisfactory but the cash reserve ratios have fluctuated in high degree.
- NIBL has maintained both current ratio and cash reserve ratio better than that of SBI.
- The assets management ratio shows that deposit utilization of NIBL is less effective than SBI.
- NIBL has invested lower amount of government securities and share and debenture than that of NIBL.

Chamling, (2011) has submitted a thesis on *"Credit Risk Management of Joint Venture Banks- A Case Study of NBL, HBL, NSBIBL & EBL"* has outlined major findings are as follows.

1. In the case of Nabil Bank Limited it has the higher risk index rate and its probability of book value insolvency is less than one percent. This indicates that a bank has higher current expected ROA, Strong capital position and stable earning and its current position shows that it has a high level of mitigate to absorb accounting loss. Almost 68.74% of its total deposits, bank used it as credit and advances which is not too high. Bank's non-performing loan to net loan for five years is 1.08% (Combined), which is very good situation. It is the good sign for the bank. Agency by analyzing from statistical aspects, there is insignificant relationship between independent variable PPL and dependent variable ROA. It T- value is not significant at 5% level of significance. Most of the credit customers of the bank are satisfied with the bank.
2. Risk index and the probability of book value insolvency of Himalayan Bank limited indicates that the bank has high risk, in other word it shows the better performance of the bank and its current position shows that it has high level of cushion available to absorb accounting loss. Bank's non-performance loan to net loan for five year is just 3.44% (Combined), which is little high. Correlation coefficient regarding PLL with ROA and ROE indicate that there is positive relationship between them but the result

is small and considered it as insignificant. Regression Coefficient of PLL is also positive and its value is not significant at 5% level of significance.

3. Nepal S.B.I Bank Ltd. data shows that risk index of the bank is high and the probability of book value solvency is less than one percent. Bank's non- performing loan to net loan for five years is 3.24% (Combined), which is little high, but it is in decreasing trend. It is the good sign for the bank. There is insignificant relationship between independent variables PLL and dependent variables ROA and ROE though the regression coefficient of loan loss provision is negative for both ROA and ROE. Bank's t-value is not significant at 5% level of significance.
4. In the case of Everest Bank Ltd. risk index is little high and probability of book value insolvency is less than one percent. Relatively its risk index is lowest among other joint venture and probability of book value insolvency is lowest among other. Bank's non-performing loan to net loan for five years is just 0.56%, which is the tremendous performance by the bank as a view of credit risk management. Correlation Coefficient regarding to PLL with ROA and ROE indicates that there is positive relationship between them but the result is not too sufficient that's why it is considered as insignificant. Regression coefficient of PLL is positive but the value is not significant at 5% level of significance.
5. The trend of combined credit ratios of the commercial banks are increasing, with the increase in the ratio of credit, the non-performing assets have also increase it means that performing assets of the commercial banks have increasing regularly.
6. Most of the credit customers of the joint venture banks of Nepal are satisfied with their respective bank. Few customers suggested bank should decrease its interest rate. As they complain that bank has decreased the deposits interest rate heavily but the credit interest rate has not lowered so much. Therefore sometimes they go under difficulty to pay the interest amount in time. Some of the credit customer of joint venture bank said that they have not got full co-operation from the bank's officer. This complains is mainly for the bank management who do not extend time period all the required explanation and documents. They said because of political conditions of our country they are suffering from the economic crisis but the bank does not understand their problems.

7. In the term of activity, all the joint venture banks are able to satisfy the demand of various depositors, creditors and shareholders as well as the government. All the banks have provided modern facilities to its customers and have used modern technology. Therefore they can attract good customers. It can be taken as strength of joint venture banks. In other hand, overdue creditors of all commercial banks have increased. It has damaged the income of bank. Bank has not opened their branches all over the country especially in mid-western and far western. Only Nepal Bangladesh bank and Everest bank have one-one branch and their joint venture banks haven't any branch at far and mid -western regions. Because of this, banks are unable to grabs the chance from all over the Nepal.

Research Gap.

Research gap is the difference between pervious work done and the present work. Earlier works conducted by the previous researchers are very useful and appreciated by personnel in various related field. The suggestion and recommendations given by the previous researchers help to improve and increase the necessary data for the related topic. Although there is a gap between previous studies and this study, the gap between earlier studies and this study analyses the credit risk management system of commercial banks. In this study requirement of loan loss provisions are studied and its effect on activity and profitability of the commercial banks, which are very essential for the going concern strategy of the commercial banks. At the time of previous study all banking sector suffering from liquidity problem but now a days the banking sector in the process of reform. So there is a gap between earlier work and this work. For the analysis purpose this study mostly used **"Risk index and profitability of Book Value insolvency".** The present study is based on five years data of selected commercial banks, which tries to achieve its objectives by analyzing secondary source of data. Thus, the earlier studies on these issues need to updated and validated because of many changes taking place in Nepalese banking sector. The current study is a supplement of overcomes the weakness and limitation of previous studies. Probably this study will be the appropriate research in the area of Credit Risk Management of bank and financial institutions.

CHAPTER- III
RESEARCH METHODOLOGY

3.1 Introduction

Research methodology refers to the various sequential steps to be adopted by research in studying a problem with keeping certain objective. It is the method of process applied to solve define research problem. The main objective of this study has been outlined in this chapter that consists of research design, population and sample size, source of data and data collection technique, data analysis tools.

3.2 Research Design

A research design is the specification of methods and procedure for acquiring the information needed. Research design is a plan for the collection and analysis of data. This study is the combination of historical descriptive and analytical type of research. Historical data are used to identify and analyzed past status of banks performance based on which future recommendation has been made. Risk management procedure has been presented in descriptive form. So as to identify current status, from the collection of past data and information from concerned source risk management system has been analyzed and recommendations have been made for improving the risk management of bank.

3.3 Population and Samples

Population must be defined in terms of element, sampling units, extent and time. Defining a population incorrectly may render the result the study meaningless or even misleading. Since the research topic is about credit risk management of joint venture bank, the total commercial banks are 31 in numbers. Here, two joint ventures taken as sample are population for the study, which jointed between two or more bank for the purpose of carrying out a specific operation. Among the total population joint venture banks, only four joint ventures are taken as sample for comparative study. The sample is chosen with an objective to find out the credit risk management system, which has played a vital role in banking industry and covered approximate 50% market share in banking industry. Sampling joint venture Banks are NABIL Bank; Standard chartered Bank Nepal, Himalayan Bank and Everest Bank Ltd.

3.4 Source of Data Collection

There are two kinds of data, Primary data and Secondary data. Primary data can be collected either through survey and investigation where as secondary data can collect from the published materials. This study is based on secondary data collection from secondary source, which are as follows.

a. Financial reports of Sample banks.

b. Published Progress report, website.

3.5 Data Analysis Tools

In order to get concrete result from this study, data are analyzed by using different financial tools and statistical tools employed which are as follows.

A) Ratio analysis:

Under this analysis, two type ratios are calculated and analyzed i.e.

I. **Lending efficiency Ratio:**

This ratio is concerned with the measuring efficiency on lending and utilizing of available fund. For this purpose, the following ratios are studied.

a) Loan and advances to total deposit ratio.

b) Performing loan to total loan and advances ratio.

c) Non-performing loan to total loan and advances ratio.

d) Loan loss provision to total loan and advance ratio.

e) Net profit to total loan and advance ratio.

II. Growth Ratio:

Growth ratio represents how well the joint venture banks maintain the economic and financial position. Not only it but also. It covers the aspects of credit distribution, its risk management. Under this topic, following type of ratio is studied:

a) Growth ratio of total loan advances.

b) Growth ratio of total deposit.

c) Growth ratio of non-performing loan (NPL).

B) Risk index:

There are basically to approaches to review the credit risk management process of commercial banks. The first approach is Micro approach in which conducted by Bank's top management, Credit policy committee, Internal audit committee. All these used different model such as credit rating model, quantifying the risk through estimated loan loss, rating migration model etc. But the researcher cannot access up to this level because credit and its procedure are the most confidential and sensitive. Another is macro approach to analyze credit risk because it is faster, easy, and accessible to data and information. But less accurate in estimated risk and losses. This index is widely used and practiced in bank for review and appraisal, which was developed and used, by *Hannen and Hawnek 1988*. Liang and Savage in 1990, Sinkey and Nash in 1993 have applied it. Risk index can be computed by using following formula.

$$\text{Risk Index} = \frac{E(ROA)+CAP}{S.D.ROA}$$

Where E (ROA) = Expected return on Assets.

CAP = the inverse of equity multiplier

$$\text{Or, } \frac{1}{Equyity\ Multiplier} \times 100$$

S.D (ROA) = Standard deviation of ROA

Lower Risk Index implies riskier bank whereas higher RI implies safe bank, the resultant figure as per group. The average shows the strength and weakness of bank's credit management. For this purpose E (ROA) and CAP is equal to most recent ROA and CAP as suggested by *Joshep F. Sinkey Jr*. in his book "commercial bank financial management".

$$\text{Here, Return on Assets (ROA)} = \frac{Net\ profit\ after\ tax}{Total\ assets}$$

Return on assets ratio is primary indicator of marginal efficiency. It indicates how capable manage the institution assets to net earnings.

Again, Return on equity Capital = Net profit after tax. Total equity capital

ROE ratio is measure of the rate of return flowing to the bank's shareholders. It approximates the net benefit that the stockholders have received from investing their capital in the bank or equity multiplier. It is derived from following equations:

EM = $\frac{ROE}{ROA}$, Where, EM = Equity multiplier

ROA = Return on Assets.

ROE = Return on equity

C) Arithmetic Mean and Standard deviation, C.V

Arithmetic mean

Arithmetic mean has widely used in this study. It has been as to calculate the average for six-year data or in some cases 4 or 6 years data, Due to unavailability of complete data. This tool has been used to calculate the single figure that can represent the whole data for the period. It is computed by using following formula.

Mean ($\overline{X}$) = $\frac{X}{n}$, Where ∑X = Sum of the variable 'X'

N = Total no of observation.

Standard deviation

The standard deviation measures the absolute dispersion or variability of distribution. The greater amount of dispersion or variability, the greater standard deviation, which have greater magnitude of the deviation of the values from their mean, a lower standard deviation means high degree of uniformity of the observation as well as homogeneity of series. In short higher S.D implies higher risk and vice versa. Standard deviation is defined as the positive square of deviation taken from the arithmetic mean of square of deviation taken from the arithmetic mean. The standard deviation measure total risk of securities. It is denoted by sigma 'σ' and computed by using this formula:

S.D (σ) = $\sqrt{\frac{1}{n} | \quad (X \; Z\overline{X})^2}$, Where $\overline{X}$ X Arithmetic mean

N = Total nos. of observation

Coefficient of Variation (C.V)

Coefficient of variation is the ratio of standard deviation to mean of the observation. When two frequency of distribution have same arithmetic mean, calculating their respective standard deviations may compare their variability of these two distributions. It is the tools of relative dispersion, which measure the risk per unit. This is called the coefficient of variation, which calculated as:

$$\text{Coefficient of Variation} = \frac{\pm}{\overline{X}} \mid 100$$

Where,

$\pm$ = Standard Deviation

$\overline{X}$ X Arithmetic mean

Lower the coefficient of variation will more preferable and vice versa.

Coefficient of Correlation and Probable Error

For making inference about the relationship between two variables whether they are dependent of independent, correlation coefficient calculated. In other words, this tool is used to describe the degree to which one variable is linearly related to other variable. Two or more variable are said to be correlated if change in the value of one variable are said to be correlated if change in the value of one variable appears to be linked with the change in other variable. It is not influenced by the size of the extreme items. Correlation may be positive or negative with range of +1 to -1. In perfectly negative correlation completely eliminate risk factor.

I. Where r = +1 perfectly positive correlation and -1 perfectly negative correlated correlation and r = 0 denotes no correlations.

II. When 'r' lies between 0.7 to 0.999 (or -0.7 to -0.999) denotes high degree of positive (negative) correlation.

III. When 'r' lays between 0.5 and 0.699 there us moderate degree of correlation.

IV. The simple correlation coefficient 'r' is calculated by using the formula:

$$\text{Correlation Coefficient} = \frac{n \quad X_1X_2 \, Z(\quad X_1)(\quad X_2)}{\sqrt{n \quad X_1{}^2 \, Z(\quad X_1)^2}.\sqrt{n \quad X_2{}^2 \, Z(\quad X_2)^2}}$$

Where, n = Total nos. of observation

X_1 and X_2 = Two variables, Correlation between them are calculated.

Probable Error

Probable error of correlation coefficient denoted by P.E is measure of testing the reliability of the calculated value of correlation coefficient. It is defined as;

$$\text{Probable error (P.E)} = \frac{0.6745(1 - r^2)}{\sqrt{n}}$$

With the help of P.E it is possible to determine the quantitative reliability of the value of coefficient. Decision rule for the significance test are;

a) If r < P.E the value of 'r' is not significant no matter have high the value of 'r' i.e. there is no evidence of correlation between the variables.

b) If r > P.E it is significant. There is evidence of correlation between two variables.

Alternatively,

$$\text{Correlation Coefficient (r)} = \frac{XY}{\sqrt{X^2 \quad Y^2}}$$

Where, X = X- $\overline{X}$ (Mean deviation from X)

Y= Y- $\overline{Y}$ (Mean deviation from Y)

$\overline{X}$ = Mean (Arithmetic) of X variable.

$\overline{Y}$ = Arithmetic mean of Y variable.

For analysis purpose, the correlation between LLP and Loan advances, LLP and non-performing loan, LLP and net profit are studied in the chapter four.

Test of hypothesis

Test of hypothesis is a process of testing of significance regarding of the population on the basis of sample drawn from the population. In testing hypothesis, we examine on the basis of statistic computed from the sample drawn belong to the parent population with certain specified characteristic or not.

In this topic, an effect has made to test the significance, regarding the parameter of the population on the basis of sample drawn from the population. Generally the following steps are followed for the test of hypothesis.

a) Formulating Hypothesis

- Null hypothesis
- Alternative Hypothesis

Where,

H_0 stands for significant relationship between capital adequacy ratio, total capital fund to risk weighted assets and non-performing loan.

H_1 stands for insignificants relationship between capital adequacy ratio, total capital fund to risk weighted assets and non-performing loan.

b) Computing test statistics.

c) Fixing the level of significance

d) Finding critical region (Value)

e) Making conclusion

On the basis of nature of T-test of Hypothesis is studied.

T- Test, Calculation for capital adequacy ratio (Core capital to risk weighted assets) (RWA)/ Total capital fund to risk weighted assets (RWA) and non-performing loan (NPL).

CHAPTER- IV

DATA ANALYSIS AND PRESENTATION

This chapter deals with the presentation and analysis of relevant data of the JVBs of Nepal in order to fulfill the objectives of the study. To obtain best result, the data have been analyzed according to the research methodology as mentioned in third chapter.

This purpose of this chapter is to introduce to the mechanics of data analysis and interpretation. Data analysis is the relationship or difference supporting or conflicting with original or new hypothesis should be subjected to statistical test of significance to determine with what validity data can be served to indicate any conclusion. In this chapter, data collected from secondary source are presented and analyzed by using financial and statistical tools and its finding have been discussed in this chapter. To make this study effective, specific and simply explicable, this chapter is categorizes mainly in three parts; presentation, analysis and interpretation. The main objective of this section is to find out answer of the research questions and satisfy the described four objectives included in 1st chapter. For this purpose banks annual reports are used for this study.

The goal of credit risk management is to maximized bank's risk adjusted rate of return by maintain credit risk exposure within acceptable parameters. Banks need to manage credit inherent in the entire portfolio as well as the risk in individual credit trisections. The credit effective management of credit risk management and essential to the long-term success of any banking organizations.

4.1 Security wise credit composition and risk weighted assets

Security wise lending refers to the lending of banks to the clients against the various collaterals. As the collateral is also key aspect while lending, the analysis of security helps to identify the credit portion of the bank. The collateral can be anything ranging from the more liquid and secured collateral such as government bonds, bills, fixed deposit receipts to illiquid fixed assets and immovable property. Bank can lend without any collateral for trust worthy customer. This analysis will help to identify the various types of securities on the basis of which loan has been provided by all four joint venture bank including 10 types of securities including without collateral lending.

Table 4.1

Ranking of NIBL collateral on the basis of Loan amount Extend. (Figure in lakh)

S.N	Security against lending	FY2008	FY 2009	FY 2010	FY 2011	FY 2012	Average	Rank
A.	Secured:	275293.05	368271.57	404984.40	418876.94	429066.91	379298.57	
I.	Movable/ Non-movable assets.	245330.59	330459.26	368971.02	373323.40	378942.70	339405.39	1
II.	Local bank and financial institution guarantee.		-	-	-	-	-	-
III.	Government guarantee		-	-	-	-		-
IV.	A rated international bank guarantee.		-	-	-	-	-	-
V.	Export document.		-	-	-	-	-	
VI.	Fixed deposit receipt. a) Own bank FDR b) Other bank FDR	2759.65	1498.38 1487.58 10.81	1838.02 1838.02 -	4177.02 4177.02 -	1284.22 1284.22 -	2311.46 2196.71 10.81	 3 6
VII.	Government Securities	108.05	131.50	29.45	17.09	33.32	63.88	5
VIII.	Counter guarantee		-	-	-	-	-	-
IX.	Personal guarantee	164.15	86.41	210.35	81.91	96.83	127.93	4
X.	Other Securities	26930.59	36096.01	38435.55	41277.51	48709.81	38289.89	2
B	Unsecured:	Nil	Nil	Nil	Nil	Nil	Nil	

Source: Annual Reports of the Bank.

Table 4.1 the lending of NIBL against the different securities. It is clear that NIBL has extended the credit mostly against the movable/ non- movable assets. The average lending which is the highest amount of loan against the movable/non- movable assets within average loan for the past three year is Rs. 339405.39 lakh. Likewise the average loan for other

securities is Rs. 38289.89 lakh, which is ranked in 2nd position. The bank has least credit against the government securities, which is ranked, in 5th position on the basis of average amount of lending. NIBL has given high priority in fixed deposit receipt and personal guarantee, which is more liquid and secured collateral. The bank has not extend loan against local bank and financial institutions guarantee, government guarantee, A rated international bank guarantee, export document and counter guarantee which is comparatively lower grade securities.

Table 4.2

Ranking of EBL collateral on the basis of Loan amount Extend.

	Security against lending	FY2008	FY 2009	FY 2010	FY 2011	FY 2012	Average	Rank
A.	Secured:	212562.90	244695.55	281563.99	316618.43	366168.32	284321.84	
I.	Movable/ Non-movable assets.	190572.69	239592.03	271888.05	307375.59	357984.17	273482.51	1
II.	Local bank and financial institution guarantee.		-	-	-	-	-	
III.	Government guarantee		-	1987.37	1987.367	1987.37	1987.37	3
IV.	A rated international bank guarantee.		-	-	-	-	-	
V.	Export document.		-	-	-	-	-	
VI.	Fixed deposit receipt. a) Own bank FDR b) Other bank FDR	3629.75 4259.27	4859.95 4745.69 114.25	73679.95 73679.95 -	6413.91 6413.91 -	5784.57 5784.57	5611.62 5714.68 114.25	2 5
VII.	Government Securities	62.89	82.37	75.55	39.95	35.91	59.33	6
VIII.	Counter guarantee		-	-	-	-	-	
IX.	Personal guarantee	24.99	24.99	24.99	25	24.99	24.99	7
X.	Other Securities	155.24	136.21	208.087	776.6	351.29	325.49	4
B	Unsecured:	Nil	Nil	Nil	Nil		Nil	

Source: Annual Reports of the Bank.

Table 4.2 the lending of Everest Bank against different securities. It is clear that Everest bank has extended against the eight different securities. EBL has granted the highest amount of loan against movable/ non- movable property with the average loan for the extended the loan for the past five years is Rs. 273482.51lakh. Inversely, the bank has extended credit against without any collateral, which is the bad sign of the lending practices. The volume of unsecured exist high level of risk. So, the EBL has higher credit risk comparing other three Joint Venture Banks. In this way, the bank has extended credit against Govt. guarantee and other securities, in the 3rd, and 4th priority respectively along with Rs. 1987.37 and Rs. 368.05lakh.

Sector Wise Loan and Advances (Credit Concentration)

This analysis helps to find out the credit concentration of two banks in different sectors. The higher concentration of bank's credit in one sector, higher will be the risk for bank and vice versa. It is because when there is a problem or crises in that particular sector, it will result in significant losses to bank. Likewise, credit extending sector affected the overall credit portfolio risk, the volume of risk affected by the nature of credit loan amount and other, the proportion and volume of sector wise lending has been presented below.

From Annex I,II it is found that NIBL bank has extend more than 10% of their total loan in 4 sectors and EBL has extend more than 10% of their total loan in 4 sectors. Similarly, NIBL and EBL have invested of highest. Total loan in manufacturing and wholesaler and retailer. In fishery sector both banks no invest and mines NIBL has invest Rs. 2.14 million which is 0.05% of the total loan lend by NIBL. In this way NIBL has invest 1.5% in agriculture in fiscal year 2012, which is least figure. NIBL hank has 0.8% invest in electricity, gas and water, which is least figure with Rs. 36.21 million. In conclusion, the high portion of loan is extended in production sector with first priority by NIBL. But EBL extends the high portion of total loan in wholesaler and retailer. But fishery and mining sector gives lower priority by two banks. Balanced portfolio among 15 sectors can reduce the overall risk of total loan portfolio.

4.2 Ratio Analysis

4.2.1 Loan and Advances to Total Deposit Ratio (CD Ratio)

The core banking function is to mobilize the fund obtained from the depositors to the borrowers and earn often called credit deposit ratio (CD ratio) is the fundamental parameter to ascertain fund deployment efficiency of commercial banks. Greater CD ratio implies the better utilization of total deposits and better earnings. However, liquidity management also needs due consideration. Hence 70%-80% of CD ratio is considered as appropriate or optimal. This CD ratio is calculated by dividing total credit by total deposit.

Table 4.3

Loan and Advances to Total Deposit (CD Ratio)

Fiscal year	**NIBL**	**EBL**
2063/64	72.56	77.44
2064/65	79.91	78.56
2065/66	78.86	73.43
2066/67	81.74	76.24
2067/68	83.54	76.98
2068/69	75.3	73.20
Mean ($\overline{X}$)	78.7	75.90
S.D (¢)	3.7	2
C.V	4.7	2.64

(*Source: Principal Indicators of Annual Report.)*

From the table 4.3 show that CD ratio of banks six consecutive years. The loan and advances to total deposit ratio of NIBL is higher than the EBL. It shows that management of Nepal Investment Bank is not able to maintain steady utilization of total deposit. Everest bank has lower standard deviation with 2, which shows the efficient management of deposit analyzing above table, the trend of CD ratio is satisfactory rather than NIBL. EBL has higher deposit utilization rate but the management may faced to problem under liquidity. Inversely, NIBL facing the over liquidity which cannot contribute to the profit.

4.2.2 Non Performing Loan to Total Loan and Advances

This ratio determines the proportion of non-performing loans in the total loan portfolio. As per Nepal Rastra Bank directives the loan falling under category of sub- standard doubtful and bad loan are regarded as non-performing loan. Higher the ratio implies the bad quality of assets of bank in the form of loan and advances. Hence comparatively lower NPL to total loan and advances ratio is favorable. Due to the higher non-performing loan may leads to higher possibility of non-banking assets, which required to be disposed off within 7 years. Valuation of such assets shall be equivalent to the outstanding amount of principal and interest such as the outstanding amount become Nil. Hence, it may create serious problems. Here the ratios are given below.

Table 4.4

NPL to Total Loan and Advances Ratio

Fiscal year	**NIBL**	**EBL**
2063/64	2.37	0.80
2064/65	1.12	0.68
2065/66	0.58	0.48
2066/67	0.67	0.16
2067/68	0.94	0.34
2068/69	3.32	.84
Mean ($\overline{X}$)	1.5	0.55
S.D (¢)	1	0.25
C.V	66.67	45.45

(*Source: Principal Indicator of Annual Report.)*

From the table 4.4 and figure shows that ratio of non-performing Loan and advances of two banks for six consecutive years. It is found that two banks non- performing loan is decreasing trend in the most recent years and they trying to perform better lending practices

4.2.3 Performing Loan to total Loan and Advances

The ratio determines the proportion of performing Loan volumes in the total Loan portfolio. Only performing loan volume defines the sound and effective credit management policy and practices. As per NRB directives the Loan falling under category of pass and restructured are

regarding as performing loan. Higher ratio implies the good lending practices. There is a gap between policy and practices. Hence comparatively higher performing loan to total loan and advance ratio is favorable. This ratio can be obtained through using this formula.

$$\text{PL to L \& A} = \frac{performing\ loan}{Total\ loan\ and\ advances}$$

Alternatively,

1 – NPL to total loan and advances.

Table 4.5

Performing loan to total loan and advances.

Fiscal year	**NIBL**	**EBL**
2063/64	97.63	99.20
2064/65	98.88	99.32
2065/66	99.42	99.52
2066/67	99.33	99.84
2067/68	99.06	99.66
2068/69	96.68	99.16
Mean $\int\overline{X}$	98.5	99.45
S.D ∫¢	0.83	0.25
C.V	0.008%	0.002%

Source: Annual Reports of Sample Banks

From the table 4.5 shows the ratio of performing loan to total loan and advances of two banks for the six years. It is found that all banks maintain their performing loan in the most recent/past year. It means the bank management is able to achieve the target up to some extent. The average performing loan ratios are 98.5% and 99.45% of NIBL and EBL banks. The standard deviations are 0.83 and 0.25 of NIBL and EBL respectively but NIBL has higher variability in the ratio of performing loan. Due to the higher co-efficient variation there is no consistency in loan and floating process and high risk. It will better to reduce the degree of variability and co-efficient variation. Similarly, lower standard deviation and co-efficient variation of EBL denotes the better performance in lending and the bank

management is very seriousness towards floating. So that it can say that performing loan ratio and volume is a mirror of sound banking operation.

4.2.4 Loan Loss Provision to Total Loan and Advances Ratio

This ratio indicates the amount of loan loss provision, a cushion for the possibility of default of bank. Since, higher provision has to be made for non- performing loan but higher provision for loan loss always nit and best for better performance. It create high passive fund, which cannot contribute the profit. Similarly, high loan loss provision reflects the increasing non–performing loan out of the total value. So, the bank management should maintain adequate and proper loan loss provision fund. If not so, the banks may be face loan loss, which directly affects to volume of net profit and management. Comparatively lower loan loss provision is not also always good.

The volume of NPL depends upon the credit composition, top management policy chief executive officer approach and net profit for the year etc.

Table 4.6

Loan Loss Provision to total loan and advances

(Figures in lakhs)

Fiscal Year	NIBL			EBL		
	LLP	**Loan amount**	**Ratio**	**LLP**	**Loan amount**	**Ratio**
2063/64	501.2	22545.7	2.22	453.2	14082.7	3.22
2064/65	532.7	27529.3	1.94	531.5	18836.4	2.82
2065/66	585.9	36827.2	1.59	618.2	24469.6	2.53
2066/67	630.1	40948.4	1.54	610	181564	3.36
2067/68	792.2	41887.6	1.89	604.2	31661.8	1.90
2068/69	1269.7	42906.7	2.96	705.9	36616.8	1.93
Mean			2.02			2.42
S.D			0.48			0.48
C.V			23.76			20.01

Source: Annual Reports of Related Banks

From the table 4.6 it is shows that NIBL's loan loss provision amount is increasing trend with the volume of loan and advances. There is positive relationship between loan loss provision and loan and advances amounting Rs. 1269.7 and Rs. 42906.7 in the fiscal year 2068/689. Again EBL is also increasing trend and reach Rs. 618.2 in the fiscal year 2065/66 but after that it started to decrease and reach RS. Rs. 36616.8 in increases 604.2 in fiscal year 2067/68 but its loan and advances in fiscal year 2068/69 from Rs. 14082.7 in fiscal year 2063/64. The average loan loss provision to total loan and advances ratios are 2.02and 2.42 respectively. Comparatively, NIBL has lower variability in the maintaining loan loss provision and more consistency in process. It denoted by S.D 0.48 and C.V 23.76. Comparatively EBL has higher variability in the maintaining loan loss provision with S.D 0.48 and C.V 20.01. In conclusion the volume of loan loss provision affected not only by total loan and advances but other factors such as credit combination, top management approach, net profit volume etc.

4.2.5 Net Profit to loan and Advances

This ratio indicates how effectively the bank has employed its resources in the form of loan and advances. Net profit refers to that profit which is obtained after all types of deduction like employee bonus, tax provision etc. Higher the ratio is preferable and vice-versa. Hence, this ratio is measures bank's profitability with respect to loan and advances. Generally higher volume of total loan and advances contribute high to net profit. But sometimes, it may not be so due to some reasons like increased volume of non- performing loan, low rated investment and high risk in credit. In this way, net profit also affected by various risk such as credit risk significantly. Return on loan and advances help to study the risk pattern.

Table 4.7

Return on Loan and Advances

Fiscal Year	**NAIBL**	**EBL**
2063/64	2.82	2.10
2064/65	2.53	2.40
2065/66	2.45	2.61
2066/67	3.09	2.95
2067/68	2.81	2.94
2068/69	2.40	2.98
Mean	2.67	2.66
S.D	0.26	0.33
C.V	9.62	12.36

Source: Annual Reports of Related Banks

The table 4.7 shows the ratio on total loan and advances of NIBL and EBL for the past consecutive six years. Comparatively Nepal investment bank’s return on loan and advances is higher than Everest bank’s annual return. The higher return on NIBL and EBL are 3.09 in the fiscal year 2066/67, 2.98 in the fiscal year 2068/69 respectively. Similarly, EBL has higher consistency is maintaining proper and stabilized return on loan and advances. The highest variation in return on loan and advances is EBL between NIBL with higher C.V 12.36.

Growth Ratio:

Simply growth ratio indicates the performance level comparing precedent year performance; it is totally based on qualitative data. Here is calculated the growth ratio of total loan and advances, total deposit, performing Loan and non-performing Loan volume. Which are the core components of banking, not only it but also, it largely affects the credit risk pattern. For example, the volume of loan and advances may arise the high possibility of default or high performing loan. So, the bank management should consider the growth pattern very seriously.

Table 4.8

Growth Rate of Total Loan and Advances

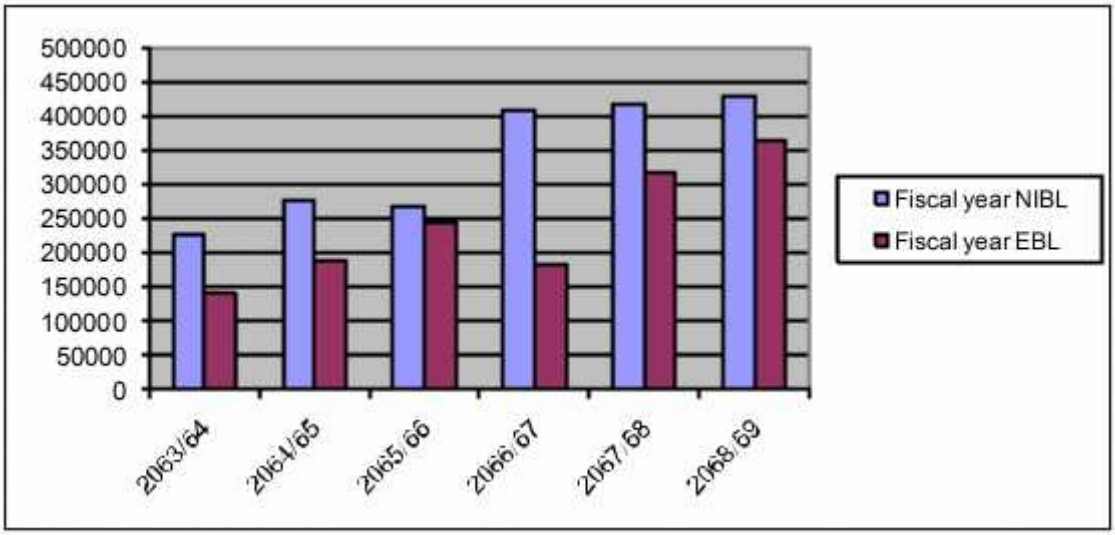
(In lakhs)

Fiscal year	**NIBL**		**EBL**	
	L & A	Growth	L & A	Growth
2063/64	225427	-	140827	-
2064/65	275293	18.11	188364	25.24
2065/66	268172	25.24	244696	23.02
2066/67	409484	10.06	181564	13.09
2067/68	418876	2.24	316618	11.07
2068/69	429067	2.37	366168	13.53
Mean		9.67		14.33
S.D		8.39		5.88
C.V		86.77		41.03

(*Source: Annual Report of the Banks)*

Figure A

Diagrammatic presentation of total loan and advances



From the table 4.10 exhibits show the growth rate of total loan and advances of all sample two banks. Between two banks EBL has the highest average growth rate of loan and advances and NIBL has the lowest average growth rate of loan and advances.

Table 4.9

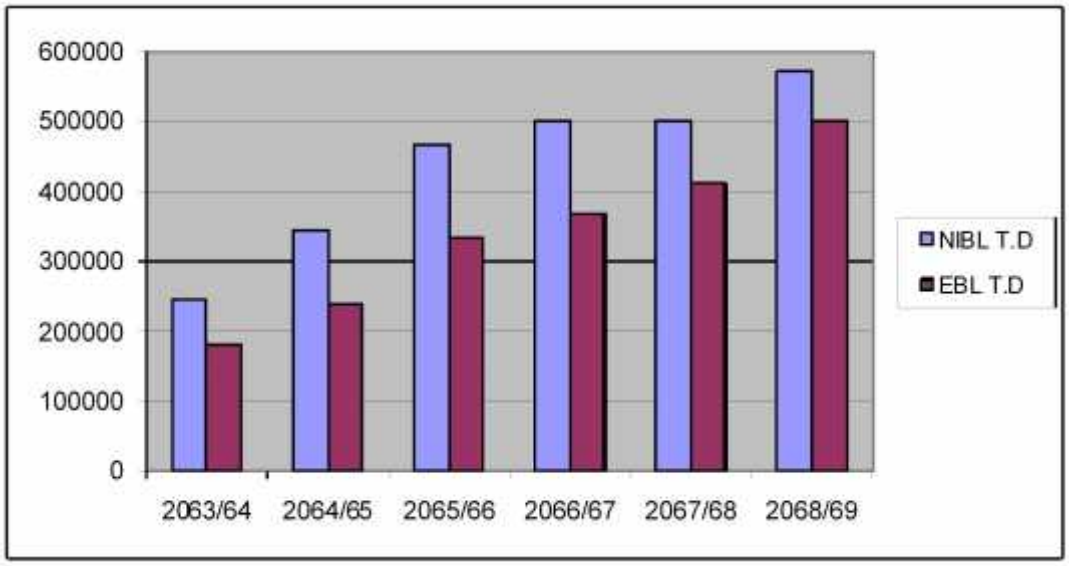
Growth Rate of Total Deposit

Fiscal year	**NIBL**		**EBL**	
	T.D	G%	T.D	G%
2063/64	244888	-	181862	-
2064/65	344517	28.92	239763	24.15
2065/66	466981	26.22	333229	28.05
2066/67	500947	6.78	369323	9.77
2067/68	501381	0.09	411279	10.20
2068/69	570106	12.05	500061	17.75
Mean		12.35		14.97
S.D		13.42		7.22
C.V		108.66		48.24

(*Source: Annual Reports of the Banks)*

Figure B

Diagrammatic Presentation of Total Deposit



From the table 4.9 shows growth rate of total deposit of all sample banks. Between two banks Everest banks deposit increased significantly to Rs. 500061 lakh in the fiscal year 2068/69 from Rs. 181862 lakh in the fiscal year 2063/64. Two banks growth rate is in increasing trend but there is variation in growth rate of deposit volume. The standard deviation and co-efficient of variation are 13.42% and 108.66% of NIBL which is higher than EBL. Only the growth rate of total deposit cannot analyze a forecasting future performance but also should consider loan and advances, banking assets and others, lack of investing opportunity, over deposit collection and growth create over liquidity is not good for smooth operation of banking activities.

Table 4.10

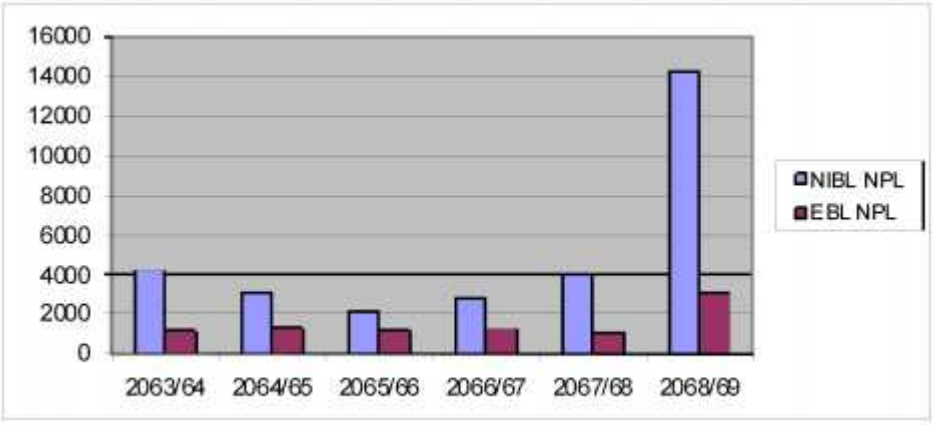
Growth Rate of Non -Performing

Fiscal year	**NIBL**		**EBL**	
	NPL	Growth	NPL	Growth
2063/64	4219.7	-	1131.8	-
2064/65	3094.7	(36.35)	1273.10	11.10
2065/66	2139.1	(44.67)	1179.85	(7.91)
2066/67	2743.3	22.02	1255.6	6.04
2067/68	3952.8	30.60	1085.1	(15.71)
2068/69	14253.9	72.27	3074.9	64.72
Mean		7.31		9.71
S.D		39.97		25.81
C.V		5.47		2.66

(*Source: Annual Reports of the Banks)*

Figure C

Diagrammatic presentation of Non-Performing Loan



From the table 4.10 exhibits the EBL has positive growth rate of non-performing loan and NIBL has negative growth rate of non-performing loan. Non-performing loan may lend in to loss and high volume non-performing banking assets (NBA). It directly affected to net profit and efficiency of banks. So the banks management always tries to reduce the volume of non-banking assets. From above table NIBL bank's NPL significantly Rs.14253.9 in the fiscal

year 2068/69 from Rs. 4219.7 in the fiscal year 2063/64. But EBL cannot able to reduce their growth by (40.82% and (1.68%) which refers to low probability of default. The standard deviation and coefficient of variation of NIBL and EBL are 39.97, 9.71 and 5.47, 2.66 respectively. The Everest bank limited maintains the high consistency in reducing NPL and NIBL has able to maintain moderate consistency.

4.3 Risk Index and Probability of Book Value Insolvency

This financial model is widely used and practices in the review and appraisal for banks. It is totally based on Return on assets (ROA) and Return on equity (ROE). Simply, both indicator ROA and ROE higher will be the preferable and desirable and vice versa. Furthermore, higher consistency in ROA and ROE is the sign of good performance. The resultant figures are depends upon standard deviation on ROA and expected ROA. Liary and Sawaza 1990 have applied it. Expected ROA and CAP as suggested by *Sinky Jr*. in his book "Commercial bank financial management". Thus it measures overall total risk. Another aspect of this model is the probability of book value insolvency. It is calculated based on risk index (RI). In the terms of RI, probability of book value insolvency can be expressed as $\frac{1}{2}$ ƒRI Å. The resultant figure shows the thickness of book value cushion bank has available to absorb accounting losses. It also indicates the probability of bankruptcy. All calculation is based in accounting data of the four Joint venture banks taking consecutive five years data. It is presented comparative table of risk index, which is be.

Table 4.11

Comparative table of Risk Index

S.N	Bank's Name	Risk Index	± ROA	± ROE	Rank
1.	NIBL	63.69	0.26	1.82	II
4.	EBL	41.38	0.33	1.62	I

Source: Annex III and IV

From the table 4.11 Nepal investment bank falls in to the 2nd category and Everest ban limited falls in to 1st category according to the risk index factor. According to the table, Everest bank limited has lower risk index with higher standard deviation of ROA and lower standard deviation of ROE. This means the Everest bank has higher risk due to unable to stabilize return on assets and equity. Therefore the variation in ROA highly and ROE lower

than other banks. Nepal investment bank have lower risk because of higher competency in both returns. Inversely, Nepal investment bank have lower standard deviation on ROA. It is good sign because of higher risk index (RI) attribute higher expected ROA. Sound capital position and stable earning and vice versa. It is concluded that expected return on assets (ROA) and standard deviation of ROA are major two factors which determine risk index factor. Not only it but also it is found two conditions which are follows:

a. If expected return on assets E (ROA) is higher and lower standard deviation ROA, than risk index will be higher. RI has negative relationship with standard deviation of ROA but positive relationship with expected ROA.
b. If expected return on assets E (ROA) is lower and higher standard deviation ROA, then risk will be lower and lower risk index indicates the higher overall risk and non-stable performance.

The probability of book value insolvency's table is presented below.

Table 4.12

Comparative Study of Book Value Insolvency.

S.N	Bank's Name	Risk Index	Probability of insolvency	Rank
1.	NIBL	63.69	0.20	I
2.	EBL	41.33	0.085	II

Source: Annex III and IV

From the table 4.12 shows the risk index and probability of book value insolvency of two banks. The probability of book value insolvency shows the level of cushion available to absorb accounting losses. NIBL have high probability of book value insolvency. This indicates the lower level of capacity to absorb accounting losses and defaults. So, NIBL have higher risk than the EBL. Similarly, EBL have lower probability of book value to absorb such losses occurred at present. There is least chance to become insolvent comparing with other bank. But NIBL has higher chance than other because of higher insolvent factor. NIBL and EBL have 0.20% and 0.085% probability of book value insolvency respectively. In this way, banks are categorized into four categories according to probability of book value insolvency factor, which have lower insolvency factor that is less risky and better for investment comparatively. But it is not final rating of risk for banks. Other tools or models should analyze for risk ratio rating.

4.4 Correlation Analysis

A. Correlation Analysis between LLP and Loan and Advances

The correlation between loan loss provision and loan and advances shows the degree of relationship between these two items, how a unit increment in loan and advances affects the loan loss provision is measured by this correlation. Here loan and advances are independent variable and loan loss provision is dependent variable.

Table 4.13

Correlation Between LLP and Loan and Advances

Bank's Name	Correlation coefficient (r)	Relationship	P.E	6P.E	Significant/ Insignificant
NIBL	0.67	Moderate degree of +(ve) correlation	0.17	1.02	Insignificant
EBL	0.84	Moderate degree of +(ve) correlation	0.09	0.54	Significant

Source: Annex V and VI

Table 4.13 shows the relationship between LLP and loan and advances. Correlation co-efficient of NIBL is 0.67 which is shows the moderate degree of positive correlation. It means that the volume of loan loss provision increased with increasing the volume of loan and advances. It has 0.28 probable error of correlation. Here r 6 P.E, so the correlation co-efficient is not significant. Everest bank ltd. has moderate degree of positive correlation with 0.84. Here, r >6 P.E, so that correlation co-efficient is significant. It means that the volume of LLP is increased with the increasing volume of loan and advances.

B. correlation between LLP and Non -Performing loan

This correlation indicates the relationship between loan loss provision and non-performing loan. How a unit increasing in NPL effects the LLP is exhibited by this correlation. NPL has treated as an independent variable whereas the LLP a dependent variable.

Table 4.14

Correlation between LLP and NPL

Bank's Name	Correlation coefficient (r)	Relationship	P.E	6P.E	Significant/ Insignificant
NIBL	0.92	Moderate degree of +(ve) correlation	0.046	0.28	Significant
EBL	0.66	Moderate degree of +(ve) correlation	0.17	1.01	Insignificant

Source: Annex VIIand VIII.

Table 4.14 explain the relationship between LLP and NPL. NIBL has moderate level degree of positive correlation coefficient with 0.92, which indicates the volume of LLP is increased with the increasing the NPL. The probable error multiplied by 6, which used to test the significance of the correlation coefficient, is also less then correlation coefficient. It means that the volume of correlation coefficient is significant. Likewise EBL has moderate degree of positive correlation with 0.66. Here r < PE so, the correlation co-efficient is insignificant. It means that the volume of LLP is increased with increasing the volume of NPL.

C. Correlation between Net Profit and LLP.

This correlation indicates the relationship between loan loss provision and net profit. Here net profit refers that profit which remaining after deducting taxes and provision. Certainly, provision for loan loss affects to the volume of net profit. So, how an increase if LLP effects to net profit is exhibited by this correlation. Here LLP treated as an independent and net profit treated as a dependent variable.

Table 4.15

Correlation Between LLP and NP

Bank's Name	Correlation coefficient (r)	Relationship	P.E	6P.E	Significant/ Insignificant
NIBL	0.45	Moderate degree of +(ve) correlation	0.24	1.44	Insignificant

EBL	0.92	High degree of +(ve) correlation	0.044	0.26	Significant

Source: Annex IXand X.

From the table 4.15 of NIBL have moderate level of positive correlation with 0.45 which indicate that there exist positive relationship between net profit and loan loss provision. If the value of LLP increase than net profit also will increased. The EBL has high degree of positive correlation which indicates that net profit will change in the same direction with LLP. Generally, correlation coefficient of NIBL is not significant but correlation coefficient of EBL is significant. It shows the LLP will effect positively and negatively both to net profit.

4.5 Test of Hypothesis

As per objectives of the study, we formulated and test the following six hypotheses.

FOR T - TEST

1. There is no significant difference in bank's capital adequacy ratio (CAR) for core capital with NRB's new directive 2010 – 6%
2. There is no significant difference in bank's capital adequacy ratio (CAR) for total fund with NRB's directive 2010 – 10%
3. There is no significant difference in non- performing loan (NPL) of commercial banks with international standard of 4%.

The test results are tabulated as follows.

Table 4.16

Table of Hypothesis test

Hypothesis	**Calculated Value**	**Tabulated Value**	**D.F**	**Decision**
Hypothesis 1	25.58	6.314	n-1 or 1	H_1 accepted
Hypothesis 2	28.34	6.314	n-1 or 1	H_1 accepted
Hypothesis 3	13.79	6.314	n-1 or 1	H_1 accepted

Source: Annex XI, XII, and XIII.

From the table 4.16 shows that hypothesis 1 explained there is significant difference in bank Capital Adequacy Ratio (CAR) for core capital with NRB's new directive 2010 but if is not bad due to higher capital adequacy ratio for core capital reflects the more safer and strong capital position which help to reduce risk aspect of all banking including credit risk.

Hypothesis 2 explained that there is no significant difference in bank capital adequacy ratio for capital fund with NRB's new directive 2010. All two banks maintained their capital position according to NRB's new directive in the same way.

Hypothesis 3 explained that there is no significant difference in maintaining non-performing loan below 4%, which is international standard. Thus it indicates the better management of non-performing loan (NPL)

4.6 Major Findings of the Study

This chapter is the consequences of the whole study and analysis and a result and achievement of entire study too. So, this chapter concentrates on drawing the conclusion of all analysis and based on the analysis some of major findings are as follows.

1. The range or depth of loan product line defines the volume of loan and lending composition. There two factors, the volume of loan and lending composition directly affected to the risk volume. For the evidence of this fact, in the fiscal year 2067/68 the loan and advances of Nepal Investment Bank and Everest Bank ltd has been Rs. 418876 and Rs. 316618 respectively. This shows that NIBL have the highest loan and advances Rs. 418876 lakh between the two banks. Inversely, Everest bank ltd has lowest loan and advances Rs. 316618 lakh. (Table No 4.1,4.2)
2. The volume of credit risk also affected by securities wise lending composition. From the analysis of lending against collateral sample two commercial banks has extended their loan and advances in 10 categories of collateral. The average lending against moveable/non-moveable assets over past three years of NIBL and EBL each has Rs. 339405.39and Rs. 273482.1 respectively. Similarly, lending against government guarantee falls in 3rd position for EBL. (Table No 4.1,4.2)
3. Analysis of non-performing loan to total loan discovered that the average NPL of NIBL and EBL are 1.5% and 0.5% respectively. It means that average performing loan of NIBL and EBL have higher percentage of performing loan. The percentage of performing loan of NIBL and EBL are 98.5% and 99.45%

respectively. Hence NIBL have higher percentage of non-performing loan than EBL and EBL have lower percentage of non-performing loan. This means that NIBL has more credit risk than EBL. But both banks has been managed to decrease the volume of non-performing loan below 2%. (Table No 4.4,4.5)

4. The average loan loss provision to total loan ratio of NIBL and EBL are 2.02% and 2.42% respectively. The higher % of LLP of Everest Bank ltd indicates that the bank has higher amount of non-performing loan that NIBL. Similarly, NIBL has lower percentage of loan loss provision, which shows higher the performing loan. The main objectives of maintaining loan loss provision for recovery bad sector from loan loss, which is not performed. So, NIBL is in better position than EBL which shows by above figures. (Table No 4.6)
5. On the basis of growth ratio, the volume of total deposit of NIBL and EBL are increasing trend from the fiscal year 2063/64. The average growth rate of total deposit of NIBL and EBL are 12.35% and 14.97% respectively, which is satisfactory. In this way, the growth rate of total deposit directly affected to the volume of total loan and advances. It is found that the growth rate of total loan and advances of NIBL and EBL are 9.67% and 114.33% respectively, which is computed from the average of five years. The credit risk is in increasing in both commercial banks with the increment trend of loan and advances volume. Another aspect of credit is the volume and growth rate of non-performing loan. The growth rate of non-performing loan of NIBL and EBL are 7.31%and 9.71% respectively. The growth rate of non-performing loan of NIBL and EBL is in decreasing trend, which is significant. But there is some how little fluctuation in the last three years and it's around. Thus it is concluded that the NIBL and EBL have lower credit risk because they have lower volume of NPL and negative growth rate. (Table No 4.8,4.9,4.10)
6. In case of Nepal Investment Bank ltd. it has 63.69-risk index and its probability of book value insolvency is 0.20, which is less than 1%. It indicates that the bank has higher standard deviation of ROA and S.D in ROE, which is not good. It creates risk to investor. It indicates that bank has a higher expected and it has the highest level of cushion to absorb accounting losses then EBL.(Table No 4.12)
7. In case of Everest Bank ltd. it has 41.33risk index and its probability of book value insolvency is 0.085 which less than 1%. It indicates that bank has quite higher S.D (ROA) and S.D (ROE) than NIBL. EBL have 0.33% ROA and 1.62%

ROE in the fiscal year 2067/68. Due to this reason it has lower level of cushion available to absorb accounting losses, which occurred in future. The bank had stable performance and maintaining stable returns. It is more fruitful for potential investor. (Table No 4.11,4.12)

8. The co-efficient of correlation between loan loss provision and loan and advances of NIBL has moderate degree of positive correlation with insignificant relationship. This means the loan and advances increase than loan loss provision. So, LLP is decrease. Similarly, the coefficient correlation between loan and advances and loan loss provision if EBL has high degree of positive correlation with significant relationship. This means the volume of loan loss provision directly affected by loan and advances significantly. (Table No 4.13)
9. The analysis of correlation between loan loss provision and non-performing loan EBL has moderate degree of positive correlation with insignificant relationship. But NIBL has high degree of positive correlation with significant relationship.(Table No 4.14)
10. The coefficient of correlation between net profit and loan loss provision of NIBL has moderate degree of positive correlation with insignificant relationship. This means the net profit increase then loan loss provision. But EBL has high degree of positive correlation with significant relationship respectively. This means the volume of net profit directly affect by loan loss provision significantly.(Table No 4.15)
11. First hypothesis is t-test, which explains banks capital adequacy ratio for core capital. In this hypothesis the calculated value of t-test is greater than tabulated value. So, $_{H1}$ is accepted. It is provided that there is significant in banks adequacy ratio for core capital with NRB's new directive 2010. This means all two banks maintaining higher ration then NRB's new directive 2010. But it is not bad due to higher core capital ratio strengthen strong capital position.(Table No 4.16)
12. Second hypothesis is t-test, which explain bank's capital adequacy ratio for total capital fund. The calculated value of t-test is greater than tabulated value. So, H_1 is accepted. It is prove that there is no significant difference between bank's capital adequacy ratios for total capital fund with NRB's new directive 2010. All commercial banks has been maintaining proper adequacy ratio for total fund. This means, they implement NRB's new directive 2010 fully.(Table No 4.16)

13. Third hypothesis is t-test, which explain bank's non-performing loan according to international standard of 4%. It is proved that there is no significant difference in maintaining non-performing loan below 4%. Thus it indicates the bad management of non-performing loan by both sample banks.(Table No 4.16)

CHAPTER- V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

Economic development is not possible without proper development of banking sector in a country, as the banks are the real facilitation for mobilizing the resources. Banks are institutions which collect the scattered small saving from the public and invest them into productive sector that ultimately contributes to economic development of a country. Besides providing the services for the economic development, they major a challenge for Nepalese commercial banks is to properly manage the risk. Considering the importance of risk management in commercial banks, this research aimed at studying credit risk management system of selected joint venture banks. Out of total population of 31 commercial banks, 6 banks are joint venture banks. Almont them joint venture banks NIBL and EBL were selected for this study. All Sample banks are leading and big banks in Nepalese banking industries in terms of business size, capital size, Nos. of branches etc.

5.2 Conclusion

As per the study, the credit risk of three banks mainly arise due to non-payment of loan by borrowers, poor appraisal of borrowers and improper diversification of lending across industries also result in higher credit risk in banks. The major problems in credit risk can be categorized into three areas of concentration, credit processing and market and liquidity sensitive. In credit, processing, improper credit appraisal system, ineffective credit monitoring and supervision, borrower's misconduct, overvaluation of collateral, political pressure to lend to unaccredited worthy parties etc is the major factors lending to non-performing loan. Setting up recovery hiring assets Management Company are some to the measure to resolve the problem of Non-performing loan classification and loan loss provision also helps to confront the problems. The last directive regarding loan classification and loan loss provision is very important for maintaining sound financial health of the banks. As a result more provision has to apportion lending to lesser probability but this kind of negative impact is only for short period. Adequate provisioning strengthens the financial health of the banks and makes them able to face any kind of future contingencies. It has found that all four joint venture banks give the proper consideration and provision for lending process. All sample banks extended credit without collateral, which is the good sign of credit practices. They have kept close eyes towards securities and especially focus on collateral with the

feature of "MAST". This means M = Marketability, A = Accessibility, S = Security and T = Transferability. All two banks have been extended their credit against collateral of movable and non-movable property in high volume. EBL has extended the credit without any security that is not good sign. Similarly, Credit concentration on single sector of NIBL and EBL shows these two banks have very high amount of concentration on single sector i.e manufacturing sector (production sector). In manufacturing sector NIBL and EBL has 34.1% and 17.49% of total loan exposure in the fiscal year 2012 which is the sign of putting all eggs in a one basket. Improper portfolio management also remain and of the significant problems in credit management of these banks. The main indicators of loan default indicate that average Non-performing loan of Nepal Investment Bank Ltd. However in the fiscal year 2011 both banks has been managed to decrease the volume of non-performing loan below 2% expect Nepal Investment bank ltd. This very, EBL have lower risk index. It is due to higher standard deviation of ROA and ROE comparatively then NIBL. The coefficient of correlation between loan loss provision and loan and advances of NIBL has moderate degree of positive correlation with in significant relationship. This means the loan and advances increase than loan loss provision. So, LLP is decreases. Similarly, the coefficient of correlation between loan and advances and loan loss provision of EBL has high degree of positive correlation with significant relationship. This means the volume of loan loss provision directly affected by loan and advances significantly. The credit risk management procedure in these banks mainly the two banks procedure. The major outlines of risk management include setting standard for all the transactions such as lending, borrowing etc and preparing financial reports. A substantial degree of standardization process and documentation has been set off to criteria are also fulfilled by two banks. This is the major guidelines for making investment decision.

5.3 Recommendations.

From the above analysis of credit risk management of Nabil Bank, Standard Chartered Bank, Himalayan Bank and Everest Bank following recommendation is made to these banks, NRB and Nepal government in respect of credit risk management.

General recommendations:

1. Old technique no longer work: In the current context, both commercial banks have been applying old technique for managing the risk. These techniques should be changed with changes in environmental forces. For the management of credit risk associated with assets

and liabilities management banks need to adopt new methods such as simulation method, Value at risk (VAR) method, Credit risk derivatives and credit enhancement mechanisms etc.

2. Identify and deal with new risks: Both commercial banks seem conservative in term of dealing of risk. Credit risk has been given high priority in two banks. To remain components in the market all banks need to identify and deal with new risks arise with the change in environmental forces.
3. Training and development: Both banks are recommended to initiate training and development program for the employees to make them efficient and professional in term of managing various risks. Training for credit appraisal, monitoring and management of credit risk can be operational.
4. System of check and balance: All four banks should give focus to the system of check and balance which helps to reduce the risk.
5. Proper adherence of NRB directives: Following the directives of NRB and acting upon it also reduce the risk of the banks. Therefore, both banks are recommended to adherence the directives and come up with a stronger internal audit and compliance that the directives are properly implemented.
6. Preventive measure: It is recommended for both banks to take preventive measures before credit risk arising due to wrong decision, inadequate information. So both banks are recommended to develop sophisticated information system and taking adequate information about borrowers from credit information bureau (CIB). It will help to protect for lending to bank listed borrower.

A. Specific Recommendations:

1. It has been found that Everest bank has extended the credit without banking and any collateral. This sort of practice seems very risky and non profitable, as there is no collateral and make 100% provision of loan amount. So,
   EBL needs to stop lending without any collateral.
2. NIBL and EBL's contribution to manufacturing sector is relatively high. This means credit concentration is in only manufacturing sector. Portfolio model says that is very risk for investment and reducing risk. Not only it but also maximizing return may be affected. So, it is recommended to make will diversify portfolio by both sample banks.

3. Credit deposit ratio (CDR) of Everest banks is relatively low. Entire economy is largely depends upon the proper execution of lending unction by commercial banks. Low level of lending means low level of investment resulting to low level of productivity which may ultimately negative affected to national economy. Hence EBL is recommended to increase its credit deposit ratio.
4. Both NIBL and EBL have been extended of total credit to moderate level risk lending in very low the credit out so, to minimize the credit risk this proportion of credit should be increased.
5. Similarly, both commercial banks have extended the highest amount of loan against the movable and non-movable property which is 100% risk weight. So, all four banks need to diversify it's against different securities.
6. Both NIBL and EBL are also increasing with the increase in loan and advances. So, NIBL and EBL need to be more careful with taking credit decision.
7. For the proper credit risk management, all banks needs to following loan and following principles i.e. establishing an appropriate credit risk environment, operating under a sound credit granting process, maintaining an appropriate credit administration, measurement and monitoring, process and at last ensure adequate controls over credit risk.

B. Recommendation to Nepal Government:

1. Nepal government should draft and implement anti-money laundering policy to ensure country has given priority to combat money laundering.
2. Nepal government should draft and implement law relating to E- Banking, debit and credit card etc. to facilitate the growth of E- Banking.
3. Nepal government should provide adequate measures, for taking action against the willful defaulters.

C. Recommendation to NRB:

1. NRB, in addition to imposing directives, needs to provide training for commercial banks to apply new methods and system.
2. NRB should make a clear cut policies separate credit rating department or organization which will helps to minimize the credit and operation risk of banks.

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ANNEX-I

Credit Concentration of NIBL

(Figure in millions)

Sector	**2008**		**2009**		**2010**		**2011**		**2012**	
	Loan amt.	%	Loan Amt.	%	Loan Amt.	%	Loan Amt	%	Loan Amt.	%
1. Agriculture	14.27	0.56	17.61	0.65	23.27	0.65	30.85	0.74	64.31	1.5
2.Fishery	-	-	-	-		-	-	-	0	
3. Mines	3.25	0.13	3.01	0.09	2.25	0.06	2.92	0.06	2.14	0.05
4. Manufacturing	835.54	32.81	1075.37	33.85	1175.29	32.75	1387.10	33.11	1642.92	34.1
5. Construction	133.54	5.24	188.99	5.95	223.67	6.23	152.25	3.63	141.29	3.3
6. Electricity, gas and water	14.35	0.56	16.29	0.051	18.89	0.53	21.31	0.5	36.21	0.8
7.Metal products, Machinery, electricity tools and fittings.	32.54	1.28	29.77	0.94	26.27	0.73	22.16	0.53	22.90	0.5
8. Transportation, storage and communication	119.15	4.68	170.19	5.36	150.24	4.19	97.89	2.34	121.87	2.8
9. Wholesaler &	407.76	16.01	457.25	14.39	556.27	15.50	599.85	14.32	660.04	15.4

retailer										
10. Finance, Insurance and fixed assets	278.01	10.92	447.93	15.04	489.72	13.64	602.99	14.40	532.93	12.4
11. Hotel and restaurant.	95.25	3.74	115.45	3.63	130.25	3.63	230.91	5.51	195.12	4.5
12. Other service									288.74	6.7
13. Consumable loan	26.92	1.06	45.60	1.43	64.65	1..80	125.48	2.99	147.27	3.4
14. Local Govt.	-	-								
15. Others	585.92	23.01	609.54	19.18	727.75	20.28	662.45	15.81	614.93	14.3
Total	2546.36	100	3176.96	100	3588.52	100	4188.78	100	4290.6	100%

Source: NRB Banking and Financial Statistics 2012(mid- July)

ANNEX-II

Credit Concentration of EBL

(Figure in millions)

Sector	**2008**		**2009**		**2010**		**2011**		**2012**	
	Loan amt.	%	Loan Amt.	%	Loan Amt.	%	Loan Amt.	%		
1. Agriculture	702.7	2.61	785.32	2.80	790.25	2.78	830.29	2.85	842.9	2.84
2.Fishery		-							0	
3. Mines										
4. Manufacturing	4894.8	18.15	4935.6	17.60	5092.6	17.91	5129.5	17.60	5179	17.49
5. Construction	3129.4	11.61	3256.9	11.62	3346.8	11.77	3489.5	11.97	3528.5	11.92
6. Electricity, gas and water	325.9	1.21	365.4	1.30	375.2	1.32	395.4	1.36	402.2	1.35
7.Metal products	395.8	1.47	409.2	1.46	419.6	1.48	420.9	1.44	434.9	1.46
8. Transportation, storage and communication	2895.8	10.74	2913.8	10.39	2956	10.39	3059	1051	3189.1	10.71
9. Wholesaler &	9135.7	3389	9296.9	33.16	9365.2	32.93	9435.1	32.37	9575.1	32.34

retailer										
10. Finance, Insurance and fixed assets	2085.2	7.74	21.8.7	7.52	212135.3	7.51	2207.5	7.57	2216.5	7.48
11. Hotel and restaurant.	635.1	2.36	695.3	2.48	625.6	2.20	640.9	2.10	644.5	2.17
12. Other service	755.2	2.80	792.1	2.82	809.3	2.84	858.6	2.95	879.9	2.97
13. Consumable loan	1742.4	6.46	1786.3	6.37	1814.8	6.38	1912.6	6.56	1923.3	6.50
14. Local Govt.	-	-								
15. Others	645.1	2.39	689.2	2.46	705.3	2.48	765.4	2.63	791.8	2.67
Total	26954.2	100	28034.72		28435.95		29144.69		29608.6	

Source:-NRB Banking and Financial Statistics 2012(mid-July)

ANNEX-III

Risk index and probability of book value insolvency

A. NIBL

Fiscal year	ROA	ROE	EM= ROE/ROA
2063/64	2.8	26.7	9.5
2064/65	2.5	25.9	10.4
2065/66	2.4	23	9.6
2066/67	3.1	27.6	8.9
2067/68	2.8	22.8	8.1
2068/69	2.4	17.2	7.2
	$\sigma ROA = 0.08$	$\sigma ROE = 1.03$	

Source: Annual Report

Risk index = $\frac{E(ROA)+CAP}{\sigma ROA} = \frac{E(ROA)+\frac{1}{EM}\times 100}{\sigma ROA} = \frac{2.67+\frac{1}{7.2}\times 100}{0.26} = 63.69\%$

Probability of Book Value insolvency = $\frac{1}{2}(RI)^2 = \frac{1}{2}(0.6369)^2 = 0.20$

ANNEX-IV

Risk index and probability of book value insolvency

A. Everest Bank Ltd.

Fiscal year	ROA	ROE	EM= ROE/ROA
2063/64	2.10	27.75	13.21
2064/65	2.40	28.54	11.89
2065/66	2.61	28.96	11.10
2066/67	2.95	30.17	10.23
2067/68	2.94	25.33	8.62
2068/69	2.98	27.15	9.11
	$\sigma ROA = 0.42$	$\sigma ROE = 1.61$	

Source: Annual Report

Risk index = $\frac{E(ROA)+CAP}{\sigma ROA} = \frac{E(ROA)+\frac{1}{EM}\times 100}{\sigma ROA} = \frac{2.66+\frac{1}{9.11}\times 100}{0.33} = 41.33\%$

Probability of Book Value insolvency = $\frac{1}{2}(RI)^2 = \frac{1}{2}(0.4133)^2 = 0.08$

ANNEX - V
Correlation Coefficient and Probable Error

(A) Correlation coefficient between LLP and Loan and Advances of NIBL.

(Figure in Lakh)

Fiscal Year	LLP (X)	L&A (Y)	$X = X - \overline{X}$	$Y = Y - \overline{Y}$	X^2	Y^2	XY
2063/64	5012	225457	-2174	-128951	4727725	16628446368	280383182
2064/65	5327	275293	-1859	-79115	3457120	6259235968	147101776
2065/66	5859	368272	-1327	13864	1761814	192201253.4	-18401707
2066/67	6301	409484	-885	55076	783815	3033329059	-48760324
2067/68	7922	418877	736	64469	541205	4156208982	47427449
2068/69	12697	429067	5511	74659	30367447	5573916508	411419026
TOTAL	X X **43118**	Y X **2126450**			X^2 X **41639127**	Y^2 X **35843338140**	XY X **819169403**

$\overline{X}$ X $\frac{X}{N}$ or $\frac{43118}{6}$ or 7186

$\overline{Y}$ X $\frac{Y}{N}$ or $\frac{2126450}{6}$ or 354408.33

Now, r = $\frac{XY}{\sqrt{X^2 \quad Y^2}}$ or $\frac{819169403}{\sqrt{41639127 \mid 35843338140}}$ or $\frac{819169404}{1221673159}$ or 0.67

Computation of Probable error P.E (r)

P.E (r) = $0.6745 \mid \frac{1 Z r^2}{\sqrt{5}} or 0.6745 \mid \frac{1 Z 0.13^2}{\sqrt{5}} or 0.17$

Again 6P.E(r) = $6x\ 0.17=1.02$

ANNEX-VI
Correlation Coefficient and Probable Error

(D) Correlation coefficient between LLP and Loan and Advances of Everest Bank Ltd.

(Figure in Lakh)

Fiscal Year	LLP (X)	L&A (Y)	$X = X - \overline{X}$	$Y = Y - \overline{Y}$	X^2	Y^2	XY
2063/34	4,532	140,827	-1,340	-98,879	1,794,707	9,777,089,601	132,465,124
2064/65	5,315	188,364	-557	-51,342	309,878	2,636,018,078	28,580,473
2065/66	6,182	244,696	310	4,990	96,307	24,898,437	1,548,512
2066/67	6,100	181,564	6,100	-58,142	37,210,000	3,380,511,545	-354,667,217
2067/68	6,042	316,618	170	76,912	29,013	5,915,430,107	13,100,649
2068/69	7,059	366,168	1,187	126,462	1,409,760	15,992,595,290	150,152,350
	X X	Y X			X^2 X	Y^2 X	XY X
TOTAL	**35230**	**1438237**			**40849665**	**37726543057**	**-28820110**

$\bar{X}\ \mathrm{X}\frac{X}{N}\ or\ \frac{35230}{6}\ or 5871.67$ $\bar{Y}\ \mathrm{X}\frac{Y}{N}\ or\ \frac{1438237}{6}\ or 239706.17$

Now, r = $\frac{XY}{\sqrt{X^2\ \ Y^2}}\ or\ \frac{312571312.3}{\sqrt{3691801.33 \mid 37726543057}}\ or\ \frac{312571312.3}{373200886.7}\ or 0.84$

Computation of Probable error P.E (r)

P.E (r) = $0.6745 \mid \frac{1\mathrm{Z}r^2}{\sqrt{5}}\ or 0.6745 \mid \frac{1\mathrm{Z}0.84^2}{\sqrt{5}}\ or 0.09$

Again 6P.E(r) = $6\mathrm{x}\ 0.09=0.54$

ANNEX-VII
Correlation Coefficient and Probable Error

(A) Correlation coefficient between LLP and NPL of NIBL.

(Figure in Lakh)

Fiscal Year	LLP (X)	NPL (Y)	$X = X - \overline{X}$	$Y = Y - \overline{Y}$	X^2	Y^2	XY
2063/64	5012	4219.7	-2,174	-848	4,727,725	718,341	1,842,856
2064/65	5327	3094.7	-1,859	-1,973	3,457,120	3,890,954	3,667,628
2065/66	5859	2139.1	-1,327	-2,928	1,761,814	8,574,062	3,886,631
2066/67	6301	2743.3	-885	-2,324	783,815	5,400,744	2,057,470
2067/68	7922	3952.8	736	3,953	541,205	15,624,628	2,907,943
2068/69	12697	14253.9	5511	9186.65	30,367,447	84,394,538	50,624,566
TOTAL	X X **43118**	Y X **30403.5**		6301	X^2 X41639127	Y^2 X **118603267**	XY X **64987095**

$\overline{X}$ X$\frac{X}{N}$ or $\frac{43118}{6}$ or 7186

$\overline{Y}$ X$\frac{Y}{N}$ or $\frac{30403.5}{6}$ or 5067.25

Now, r = $\frac{XY}{\sqrt{X^2 \quad Y^2}}$ or $\frac{64387095}{\sqrt{41639127 \mid 118603267}}$ or $\frac{64987095}{70274721}$ or 0.92

Computation of Probable error P.E (r)

P.E (r) = $0.6745 \mid \frac{1 Z r^2}{\sqrt{5}} or 0.6745 \mid \frac{1 Z 0.92^2}{\sqrt{5}} or 0.046$

Again 6P.E(r) = $6x\ 0.046=0.28$

ANNEX-VIII
Correlation Coefficient and Probable Error

(D) Correlation coefficient between LLP and NPL of Everest Bank Ltd.

(Figure in Lakh)

Fiscal Year	LLP (X)	NPL (Y)	$X = X - \overline{X}$	$Y = Y - \overline{Y}$	X^2	Y^2	XY
2063/64	4,532	1,131.8	-1339.67	-368.09	1794706.78	135487.79	493113.44
2064/65	5,315	1,273.1	-556.67	-226.78	309877.78	51427.66	126239.01
2065/66	6,182	1,179.9	310.33	-320.03	96306.78	102417.07	-99314.94
2066/67	6,100	1,255.6	228.33	-415.88	52136.11	172953.40	-94958.51
2067/68	6,042	1,084.0	170.33	-415.88	29013.44	172953.40	-70837.66
2068/69	7,059	3,074.9	1187.33	1575.04	1409760.44	2480761.50	1870101.45
	X X	Y X			X^2 X	Y^2 X	XY X
TOTAL	**35230**	**8999**			**3691801.33**	**3116000.82**	**2224342.97**

$\overline{X}$ X$\frac{X}{N} or \frac{35230}{6} or 5871$

$\overline{Y}$ X$\frac{Y}{N} or \frac{8999}{6} or 1500$

Now, r = $\frac{XY}{\sqrt{X^2 \quad Y^2}} or \frac{2224342.97}{\sqrt{3691801.33 \mid 3116000.82}} or \frac{19403.05}{3391703.99} or 0.66$

Computation of Probable error P.E (r)

P.E (r) = $0.6745 \mid \frac{1 Z r^2}{\sqrt{5}} or 0.6745 \mid \frac{1 Z 0.66^2}{\sqrt{5}} or 0.17$

Again 6P.E(r) = 6x 0.17=1.02

ANNEX - IX
Correlation Coefficient and Probable Error

(A) Correlation coefficient between LLP and Net Profit of NIBL.

(Figure in Lakh)

Fiscal Year	LLP (X)	NP (Y)	$X = X - \overline{X}$	$Y = Y - \overline{Y}$	X^2	Y^2	XY
2063/34	5012	5014	-2174.33	-4286.67	4727725.44	18375511.11	9320642.22
2064/65	5327	6967	-1859.33	-2333.67	3457120.44	5446000.11	4339064.22
2065/66	5859	9006	-1327.33	-294.67	1761813.78	86828.44	391120.89
2066/67	6301	12659	-885.33	3358.33	783815.11	11278402.78	-2973244.44
2067/68	7922	11766	735.67	2465.33	541205.44	6077868.44	1813663.56

2068/69	12697	10392	5510.67	1091.33	30367447.11	1191008.44	6013974.22
	X X	Y X			X^2 X	Y^2 X	XY X
TOTAL	**43118**	**55804**			**4163912.33**	**42455619.33**	**18905220.67**

$\overline{X}$ X$\frac{X}{N}$ or $\frac{43118}{6}$ or 7186 $\overline{Y}$ X$\frac{Y}{N}$ or $\frac{55804}{6}$ or 9300

Now, r = $\frac{XY}{\sqrt{X^2 \quad Y^2}}$ or $\frac{18905220.67}{\sqrt{41639127.33 \mid 42455619.33}}$ or $\frac{18905220.67}{42045391.41}$ or 0.45

Computation of Probable error P.E (r)

P.E (r) = 0.6745 $\mid \frac{1 Z r^2}{\sqrt{5}}$ or 0.6745 $\mid \frac{1 Z 0.45^2}{\sqrt{5}}$ or 0.24

Again 6P.E(r) = 6 $\mid$ 0.24 X1.44

ANNEX - X
Correlation Coefficient and Probable Error

(D) Correlation coefficient between LLP and Net Profit of Everest Bank Ltd.

(Figure in Lakh)

Fiscal Year	LLP (X)	NP(Y)	$X = X - \overline{X}$	$Y = Y - \overline{Y}$	X^2	Y^2	XY
2063/34	4,532	2,946	-1339.67	-4117.67	1794706.78	16955178.78	5516300.78
2064/65	5,315	4,512	-556.67	-2551.67	309877.78	6511002.78	1420427.78
2065/66	6,182	6,387	310.33	-676.67	96306.78	457877.78	-209992.22
2066/67	6,100	8,318	228.33	1254.33	52136.11	1573352.11	286406.11
2067/68	6,042	9,313	170.33	2249.33	29013.44	5059500.44	383136.44
2068/69	7,059	10,906	1187.33	3842.33	1409760.44	14763525.44	4562130.44
	X X	Y X			X^2 X	Y^2 X	XY X
TOTAL	**35230**	**40382**			**3691801.33**	**45320437.33**	**11958409.33**

$\overline{X}$ X $\frac{X}{N}$ or $\frac{35230}{6}$ or 5871.67

$\overline{Y}$ X $\frac{Y}{N}$ or $\frac{40382}{6}$ or 7063.33

Now, r = $\frac{XY}{\sqrt{X^2 \quad Y^2}}$ or $\frac{11958409.33}{\sqrt{3691801.33 \mid 45320437.33}}$ or $\frac{11958409.33}{12934993.27}$ or 0.92

Computation of Probable error P.E (r)

P.E (r) = $0.6745 \mid \frac{1 Z r^2}{\sqrt{5}} or 0.6745 \mid \frac{1 Z 0.92^2}{\sqrt{5}} or 0.044$

Again 6P.E(r) = $6 \mid 0.044 X 0.26$