

# **CHAPTER I**

## **INTRODUCTION**

### **1.1. Introduction**

Banks are the financial institution that accepts funds in the form of deposits repayable on demand or short notice. Banking as industry is very profitable and renowned business. The complexities aroused due to modernization and urbanization is made easy due to establishment of banks and financial institutions. The bank has simplified the complex transaction like money saving, fund transfer, lending e.t.c. Banks in the economy in mainly to fulfill the need like mobilize savings, capital formation, monetization of the economy, permeation of employment, upliftment of poor, promotion of private investment, rapid economic development, safety of wealth, transfer of money and so on. Accepting deposits and mobilization of deposits is major functions of the bank.

Nepalese banking industry is not so old but it is assumed the industry has begun from the time of lichhivi dynasty. The modern banking was begun from the establishment of Nepal Bank in 1994 B.S.

Besides all these benefits and importance we can consider Commercial banks are in the risk business. In the process of providing financial services, they assume various kinds of risks among them credit risk covers the significant portion of the total risk. While commercial banks have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to the lax credit standards for borrowers and counterparties, poor portfolio risk management, or a lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of a bank's counterparties. Since the exposure to credit risk continues to be the leading source of problem in commercial banks world-wide, the bank should now have a keen

awareness of the need to identify, measure, monitor, manage and control the credit risk as well as determine that they hold adequate capital against these risks and that they are adequately compensated for the risks incurred.

The risk that counterparty will not settle on an obligation for full value, either when due or at any time thereafter is credit risk. In exchange for-value systems, the risk is generally defined to include replacement risk and principal risk. In short credit risk is risk covered by loan. A “loan” is a financial asset resulting from the delivery of cash or other assets by a lender to a borrower in return for an obligation to repay on a specified date or dates, or on demand, usually with interest.

Credit risk is measured in terms of the nature of credit provided, nature of collateral used and quality of credit provided. In contrast to the accounting-driven, relatively dull, and routine history of credit risk, new technologies and methodologies have emerged among a new generation of financial engineering professionals who are applying their engineering skills and analysis to this risk topic.

There are different approaches to measure and manage credit risk. Some new approaches in order measure and manage credit risk are;

1. BIS Risk- Based Capital Requirement Approaches.
2. Traditional Credit Risk Management Approaches.
3. Option Theory, Credit Risk, and the KMV Approaches.
4. J.P. Morgan’s CreditMetrics and other VaR Approaches.
5. The McKinsey Model and Other Macro simulation Approaches.

### **1.1.1 Banking System in Nepal**

Sound banking system is the crucial means to accelerate the development of a country by strengthening the economic condition in this globalized economy of the twenty-first century. This requires the well-developed corporate culture, proper management of risk and return and healthy competitive environment that facilitate mobilization of small saving in the commercial and industrial sectors that will enhance the economic and social welfare of a country.

Banking when properly organized, aids and facilitates growth on trade and considered not as dealers in money but as the leader of development. Bank are not just the storehouse of the country's wealth but are the reservoirs of resources necessary for economic development. (Radhaswami and Vasudevan, 1991: 29).

In Nepal, modern banking started in 1937 A.D with the establishment of Nepal Bank Ltd. Nepal Rastra Bank, the central bank of Nepal was established in 1957 A.D followed by Rastriya Banijya Bank in 1966 A.D. As Nepalese government took liberal economic policy in 1980s, joint venture banks started to operate since 1984 A.D with the establishment of NABIL Bank Ltd. Formerly known as Nepal Arab Bank Ltd.

With the growth rate of banking industry from the 1984 A.D., the risk on banking has also made a mark simultaneously. Virtually all banks have suffered from the credit risk, which is associated with the non-payment of loan by the borrowers. Nepal Bank Limited and Rastriya Banijya Bank are the greatest victims of such risk, leading these banks to have negative net worth. That is why, this study is mainly focused on the credit risk faced by the commercial banks.

Commercial banks collect deposits from individuals and invest them in part as loan and advance to the borrowers and receive interest as the output of the business. Commercial banks' profit and operating cost are borne by these interest collected from the borrowers. When these interests as well as the principal are not

collected in due time, the existence of the bank and the deposits of individuals will be in threat. So, necessary arrangements must be made and implemented by the banks and government to avert this situation. In addition to the credit risk, the bank also faces other risks. According to the Nepal Rastra Bank Unified Directives 2005, the major sources of risk are credit risk, liquidity risk, foreign exchange risk, and interest rate risk and operation risk etc.

### **Brief introduction on Kumari Bank Ltd. (KBL)**

Kumari Bank Limited, came into existence as the fifteenth commercial bank of Nepal by starting its banking operations from Chaitra 21, 2057 B.S (April 03, 2001) with an objective of providing competitive and modern banking services in the Nepalese financial market. The bank has paid up capital of Rs. 1078.272 million, of which 70 % is contributed from promoters and remaining from public.

Kumari Bank Ltd has been providing wide - range of modern banking services through 16 points of representations located in various urban and semi urban part of the country, 11 outside and 5 inside the valley. The bank is pioneer in providing some of the latest / lucrative banking services like E-Banking and SMS banking services in Nepal. The bank always focus on building sound technology driven internal system to cater the changing needs of the customers that enhance high comfort and value. The adoption of modern Globus Software, developed by Temenos NV, Switzerland and arrangement of centralized data base system enables customer to make highly secured transactions in any branch regardless of having account with particular branch. Similarly the bank has been providing 365 days banking facilities, extended banking hours till 7 PM in the evening, utility bill payment services, inward and outward remittance services, and various other banking services.

Visa Electron Debit Card, which is accessible in entire VISA linked ATMs (including 18 own ATMs) and POS (Point of Sale) terminals both in Nepal and

India, has also added convenience to the customers. The bank has been able to get recognition as an innovative and fast growing institution striving to enhance customer value and satisfaction by backing transparent business practice, professional management, corporate governance and total quality management as the organizational mission.

The key focus of the bank is always center on serving unfulfilled needs of all classes of customers located in various parts of the country by offering modern and competitive banking products and services in their door step. The bank always prioritizes the priorities of the valued customers.

#### **Brief introduction on Machhapuchhre Bank Ltd. (MBL)**

Machhapuchchhre Bank Limited was registered in 1998 as the first regional commercial bank to start banking business from the western region of Nepal with its head office in Pokhara. Today, with a paid up capital of above 820 million rupees, it is one of the full fledged commercial bank operating in Nepal; and it ranks in the topmost among the private commercial banks.

Machhapuchchhre Bank Limited is striving to facilitate its customer needs by delivering the best of services in combination with the state of the art technologies and best international practices.

Machhapuchchhre Bank Limited is the pioneer in introducing the latest technology in the banking industry in the country. It is the first bank in Nepal to introduce centralized banking software named GLOBUS BANKING SYSTEM developed by Temenos NV, Switzerland. Currently it is using the latest version of GLOBUS, referred as T-24 BANKING SYSTEM. The bank provides modern banking facilities such as Any Branch Banking, Internet Banking and Mobile Banking to its valued customers.

The bank in the last few years have really opened up with branches spread all around the country. At this stage, it has its Corporate Office in Kathmandu and branch offices in other parts of Kathmandu, Damauli, Bhairahawa, Birgunj, Banepa, and different parts of Pokhara in addition to the Head Office in Naya Bazar, Pokhara. A full-fledged banking branch is in operation in Jomsom located high up in the mountains too. The bank aims to serve the people of both the urban and rural areas. The bank intends to open many more branches in the coming years and have already envisaged the opening of 8 branches during the year 2007/08.

## **1.2. Statement of Problem**

Major problem of the banking sector in Nepal is the Credit Risk. Poor lending practices, which are indicated by poor financial analysis of borrowers, inadequate or substandard collateral and improper portfolio analysis, poor tracking of credit and intention of borrowers to default have resulted in the high amount of Non Performing Loan of major commercial banks such as Nepal Bank Ltd (NBL) and Rastriya Banijya Bank (RBB). The whole commercial banks in Nepal have held non-performing loan of 14.22% of Total Gross Loan.

Kumari Bank Ltd and Machhapuchhre Bank Ltd. established as 14<sup>th</sup> and 15<sup>th</sup> commercial banks in Nepal respectively are not isolated with above mentioned challenges and problems faced by the entire banking industry. The researcher has selected Kumari Bank Ltd (KBL) and Machhapuchhre Bank Limited (MBL) as the samples for the study. Since their date of establishment and the size of capital are also quiet similar among other 26 commercial bank in Nepal Both the banks are in the growing stage; but in order to achieve their expected growth target, these banks must be able to manage the various risks, especially, the credit risk. Though the NPL is gradually decreasing in both the bank the bank should focused to minimize the NPL at least position

The reader of this research will be aware on credit risk approaches for measurement and management of credit risk. The main problem of the study is to find if the credit risk is manageable or not and also to compare the credit risk of KBL and MBL. The reliable data collection, proper interpretation of these data will be main problem of the research. The data presentation on next chapters shows the comparison on credit risk.

This research is mainly conducted in order to find the solution for the following questions. The solution is explained through presentation of data in next chapters. The main questions are

1. How much is portion of credit risk in KBL and MBL?
2. Is these risks manageable?
3. What is the structural frame work of KBL and MBL to minimize the credit risk?
4. What are the approaches to measure the na dto manage the credit risk?

### **1.3. Focus of the Study**

The study is focused on measurement and comparison of credit risks of the selected commercial banks i.e. MBL and KBL, analysis of Credit Risk Management systems and practice followed by the Nepalese Commercial Banks by taking KBL and MBL as the sample banks.

### **1.4. Objectives of the Study**

The study aims to examine and analyze how the selected Commercial Banks have managed mainly credit risk in this competitive Nepalese banking industry. The specific objectives of this study are:

1. To examine the credit risk position of the selected commercial banks in Nepal (mainly KBL and MBL).

2. To analyze the credit risk management, measurement system method and practices used in KBL and MBL.
3. To evaluate the credit management system of KBL and MBL
4. Also to make the reader aware and familiar with credit risk, its management.

### **1.5. Significance of the study**

The success of any organization is largely dependent on how properly the organization can manage the risk. Banking sector involves several risks, which need to be handled promptly for the survival and growth. As this research is made mainly to analyze the credit risks and their management in reference to NRB directives and measures, it will provide valuable insight to different stakeholders about the major problems of banks and bank's action for its management. The key stakeholders who will be largely facilitated by this research includes,

1. Commercial banks under study will highly be benefited by this research. This research identifies their current credit risk management styles, NRB guidelines on credit risk management and organization of basic compliance of such guidelines etc. Further, the banks will know not only the current performance but also the idea about their strength and weaknesses.
2. Individuals, who have keen interest in Nepalese economy and banking sector and will be benefited. This research provides an insight into the organizational credit risk management patterns within the standards set by NRB.
3. Policymakers will also be benefited as this paper identifies the problems in credit risk management and identifies the need for formulation of new policies or amendment of old policies.
4. Investors, depositors, borrowers also know about the credit risks with these banks to carry out business.

## **1.6. Limitations of the Study**

1. The outcome of the study is an individual effort. Therefore management, resource mobilization and time constraints limit the in-depth study of all commercial banks operating except commercial banks under study.
2. The study is also based on primary data especially through personal interview and questionnaire. Moreover, the primary data are collected during the period of February 2007 to April 2007. Therefore, any changes in the general view, concepts and behavior of the people before and after the period are not included in the study. Therefore, the accuracy of results and conclusions highly depends on the reliability of these facts and the time and situation of data collection.
3. The evaluation is made through the analysis of financial statement published and presented by the banks. Therefore generalization of the whole banking industry cannot be made.
4. The secondary data of only five years are taken from the establishment of the bank i.e. from 2001/02 to 2005/06. Inaccessibility of sufficient information also limits the conclusion drawn from study.

## **1.7. Organization of the Study**

The study is organized into the following five chapters:

Chapter I – Introduction.

Chapter II – Review of Literature.

Chapter III – Research Methodology.

Chapter IV – Data Presentation and Analysis.

Chapter V – Summary, Conclusion & Recommendations.

Chapter I is the introductory part of the study. This chapter describes the general background of the study, focus of the study, statement of the problem, objectives of the study, rationale of the study and limitations of the study.

Chapter II includes a discussion on the conceptual framework and review of the related and pertinent literature available. The conceptual considerations and review of related literature conducted in this chapter provides a framework with the help of which the study has been accomplished.

Chapter III describes the research methodology employed in the study. In this chapter, research design, nature and sources of data, methods of data collection and tools and techniques of data analysis are discussed.

Chapter IV consists of presentation and analysis of data, which deals with the empirical analysis of the study and the major findings of the study.

Chapter V is the summary, conclusion and recommendations of the study.

## **CHAPTER II REVIEW OF LITERATURE**

### **2.0. Introduction**

The researcher has reviewed various related studies and NRB directives for the study. Firstly, the review on the concept of risk and credit risk management is briefly discussed as below:

### **2.1 Conceptual Review**

#### **2.1.1 Meaning of Risk**

Risk refers to uncertainty on the investment faced by the investors. It is the possibility that actual outcomes may be different from those expected. Risk can be defined as the possibility of deviation of the actual return from the expected return. Kupper (2000) defines risk as the volatility of corporation's market value. Risk management, on the other hand, is the process of measuring or 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 affect of the risk, and accepting some or all of the consequences of a particular risk.

#### **2.1.2 Types of Risk Faced by Commercial banks**

Risk and uncertainties are the integral part of banking business. In banking sector, risk refers to the possibility that the bank will turn into liquidation. There are several inherent risk in banking which can be classified into three broad categories i.e. Credit Risk, Market Risk and Operational Risk.

Primarily, risk in the banking context is credit risk through lending, which occupies about 60% of total risk portfolio. Therefore, this study is mainly focused on the credit risk. However, the brief introduction of Market Risk and Operational Risk have also been included. The major sources of risk in banking business are briefly discussed as below:

**Fig1: Risk Profile of Banking Business**



### **i. Credit Risk**

Credit risk is most simply defined as the potential that a bank borrower or counterparty 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 be paid in full”. Credit risk involves inability or unwillingness of a customer or counterparty to meet commitments in relation to lending, trading, hedging, settlement and other financial transactions. Santomero (1997) views credit risk is generally made up of transaction risk or default risk and portfolio risk. The portfolio risk in turn comprises intrinsic and concentration risk. The portfolio risk depends on both external and internal factors. The external factors are the state of the economy, wide swings in commodity/equity prices, foreign exchange rates and interest rates,

trade restrictions, economic sanctions, 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 collaterals and inadequate risk pricing, absence of loan review mechanism and post sanction surveillance, etc.

Another variant of credit risk is counterparty risk. Counterparty risk comes from non-performance of a trading partner. The non-performance may arise from counterparty'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 counterparty risk.

Counterparty 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, counterparty'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 credits or transactions. Bank should also consider the relationships 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.

## **ii. Market Risk**

Market risk is the risk incurred in the trading of assets and liabilities due to changes in interest rates, exchange rates, and other asset prices. So, Market risk is

exposure to the uncertain market value of the firm's asset. Major factors affecting Market risk are:

1. Liquidity Risk
2. Interest Rate Risk
3. Foreign Exchange Risk

**a. Liquidity Risk:**

Anthony Saunders says "Liquidity risk arises whenever financial institutions' liability holders, such as depositors or insurance policyholders, demand immediate cash for their financial claims". When liability holders demand cash immediately – that is, put their financial claims back to the FI – the FI must either borrow additional funds or sell off assets to meet the demand for the withdrawal of funds. An institution is said to have liquidity if it can easily meet its liability holders' demand for cash either because it has cash on hand or can otherwise raise or borrow cash.

In banking sector, Liquidity risk is created when banks hold different sizes of assets and liabilities and mismatch occurs in maturity of the assets and liabilities. Extreme illiquid asset in bank may result in bankruptcy where as excess liquid asset may carry interest rate risk over the period of time. As it is fatal risk, prudent liquidity management is the primary function of banking sector. Liquidity management is also to make sure that expected shortfall amounts are funded at a reasonable cost, ensure excess fund are invested properly with reasonable returns and without carrying any interest rate risk to the bank

**b. Interest Rate Risk (IRR)**

Interest rate risk is the risk incurred by a financial institution when the maturities of its assets and liabilities are mismatched. Interest Rate Risk is the probability of

decline in earnings, due to the adverse movements of the interest rates in various markets. The applicable interest earned on assets and liabilities and hence net interest margin is the function of market variables and it may get changed overnight or over a period of time according to the market situation. Changes in the interest rate can significantly alter net interest income depending on the mismatch of assets and liabilities held by the bank. Changes in interest rates also affect the market value of bank's equity.

**c. Foreign Exchange Risk:**

Foreign exchange risk is the risk that exchange rate changes can affect the value of a bank's assets and liabilities denominated in foreign currencies. The bank is also exposed to foreign exchange risk, which arises from the maturity mismatching of foreign currency positions. In the foreign exchange business, banks also face the risk of default of the counterparties or settlement risk. While such type of risk crystallization will not cause principal loss, banks may have to undertake fresh transactions in the cash/spot market to replace the failed transactions. Thus, the bank may incur replacement cost, which depends upon the currency rate movements.

**iii. Operational risk**

Operational risk is associated with the problems of accurately processing, settling, and taking or making delivery on trades in exchange for cash. It also arises in record keeping, processing system failures and compliance with various regulations. The Basel Committee on Banking Supervision, Basel September (2000), defines operational risk as “the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.”

Operational risk arises from inadequate control systems, operational problems and breaches in internal controls, fraud and unforeseen catastrophes leading to

unexpected losses for a bank. Many of the operational-risk-related functions such as regulatory compliance, finance management, frauds, IT, legal, and insurance are carried out by the staff and thus human resources itself becomes a cause for operational risk. Leippoldy (2003).

## **2.2 Review of NRB Directives Related to Credit Risk**

The main focus of this study is to analyze the directives of Nepal Rastra Bank related to Credit Risk Management of Commercial Banks. The directives issued from time to time are one of the tools used by the central bank to control and monitor the commercial banks. In the present context, the directives are issued by NRB quite regularly. In 2005, NRB, by using the rights given by the Nepal Rastra Bank Act 2058, has issued unified directives to regulate all three categories of financial sectors in Nepal to ensure that the banking industry functions as per the international standard and also to have more effective control mechanism for overall financial sector. In this new unified directive, loan classification and provisioning of loans of financial institutions are mentioned on E. Pra. Directive No. 2/061/62 with the objective to minimize the possible risks associated with credits extended by financial institutions in the form of overdraft, loans and advances, bills purchased and discounted. Therefore, as per this new unified directive No. 2, banks should classify the loans and advances on the basis of aging of principal amount into the following 4 categories.

### **2.2.1. Directive No. 2 - Classification of Loans and Advances and Loan Loss Provision.**

#### **2.2.1.1. Classification of Loans and Advances:**

a. **Pass Loan** Loan and advances which principal amount payment are not due yet or if the due has not exceeded the due date for a period of 3 months are included under this category. Such loans and advances are defined as Performing Loan.

**b. Substandard Loan**

All the loans and advances, which due principal amounts have exceeded the due date for a period of 3 months to 6 months are included in this category.

**c. Doubtful Loan**

All the loans and advances, which principal amount are due for a period of 6 months to 1 year, are included under this category.

**d. Bad Loan**

All the loans and advances which principal amount has crossed the due date for a period of more than 1 year as well as the advances which have least possibility of recovery or considered unrecoverable and those having thin possibility of even partial recovery in future shall be included in this category.

1. Pass Loans and advances are defined as Performing Loans.
2. Loans and Advances falling under the category of Sub-standard, Doubtful, and Bad Loan are classified and defined as Non- Performing Loan.

**2.2.1.2. Loan Loss Provisioning**

1. The loan loss provisioning on the basis of the outstanding loans and advances and bills purchases are classified as per the new unified directives 2005, shall be provided as follows:

Classification of Loan	Loan Loss Provision
Good	1 Percent
Substandard	25 Percent
Doubtful	50 Percent
Bad	100 Percent

Loan loss provision set aside for performing loan is defined as “General Loan Loss Provision” and Loan Loss provision set aside for Non-Performing Loan is defined as “ “Specific Loan Loss Provision”.

Where the banks provide for loan loss provisioning in excess of the proportion as required under directives of NRB, the whole amount of such additional provisioning may be included in General Loan loss Provision under the supplementary Capital.

### **2.2.2. Directive No 3 (Single obligor limit)**

Single obligor limit refers to the limit of credit facility to a single person, a firm, a company or a group of borrowers. That means, there is certain limit beyond which a bank cannot provide credit facilities to a borrower or the borrowers who comes under the same group. NRB has provisioned single obligor limit while providing credit facilities by the bank. According to unified directive No 3, the single obligor limit for the fund-based loan is 25 % of core capital where as for non-fund based loan is 50 % of core capital.

The main reason of this provision is to protect bank from suffering losses due to investing in single client. In another word, this directive is intended to diversify the concentration risk.

### **Loan Loss Provision for minimizing concentration risk**

According to NRB Directives, if any firm, person or group of borrowers is provided the credit more than the limit of single obligor, the bank should have to make 100 % provision for the loan exceeding the limit.

### **Sector wise lending**

NRB has issued a directive for the commercial banks to send sector wise lending report on a monthly basis. The main objective of this report is to identify the different sectors in which the bank has extended its credit.

### **Security wise Lending**

NRB has issued a directive for the commercial banks to send security wise lending report on a monthly basis. The main objective of this report is to identify the different securities on the basis of which the bank has extended its credit.

### **Loan Concentration on Single Sector**

According to NRB directive No. 3, if the commercial bank has extended the credit facilities more than 100 % of core capital in single sector, such loan should have to be approved by the board of directors.

### **2.2.3. Directive No. 1-Capital Adequacy Ratio**

Capital Adequacy Ratio (CAR) is the proportion of Capital Fund or Shareholders equity on the total risk weighted asset of a bank. In other words, it is the capital portion, which is used to finance the asset. The total risk weighted asset, on the other hand, includes both on & off balance sheet items, which has been rated with certain percentage of risk. The risk weight of asset ranges from zero for cash, balance at NRB and investment in government bonds to 100 % for loans and advances. The higher the risk weighted asset means lower will be the capital adequacy ratio as CAR is the ratio between Capital fund and Risk Weighted Asset. According to unified directive 2005, the capital fund includes two types of capital,

#### **A. Primary Capital**

Primary capital refers to core capital of a bank, which includes the share capital employed by the shareholders and all the reserve maintained by a bank. Primary capital includes:

**Table 2.1**  
**Primary Capital**

1) Paid Up Capital
2) Share Premium
3) Non-Redeemable Preference Share
4) General Reserve Fund
5) Retained Earnings
6) Capital Redemption Reserve
7) Net Profit after Provision, Tax & Bonus (Current Year)
8) Capital Adjustment Fund
9) Other Free Reserve
10) General Reserve Fund

**B. Supplementary Capital**

Supplementary Capital refers to all the reserves bank has made for specific purpose, such as loan loss, foreign exchange loss etc. The supplementary capital includes:

**Table 2.2**  
**Supplementary Capital**

1) General Loan Loss Provision (Good Loans)
2) Asset Revaluation Reserve
3) Hybrid Capital Instrument
4) Unsecured Subordinated Term Debt
5) Exchange Equalization Reserve
6) Additional Loan Loss provision
7) Investment Adjustment Reserve

### **C. Capital Fund**

Capital Fund includes both the primary and supplementary capital. It can be stated in equation as below:

$$\text{Capital Fund} = \text{Primary Capital} + \text{Supplementary Capital}$$

Risk Weighted Asset, on the other hand, refers to the all the on and off balance sheet assets, which has provided certain percent of risk weight that ranges from zero for cash, balance with NRB, investment in government securities to 100 percentage for loans and advances, fixed asset etc.

Risk Weighted Asset includes both the on and off balance sheet assets. On balance sheet asset includes three types of risk-weighted asset (i.e. 0 %, 20 % and 100%). Zero percentage risk weighted assets include cash and bank balance, gold (tradable), investment in NRB and Government Bonds, loan against own bank's fixed deposit receipts and government bonds, Interest receivable on National Saving Bonds. 20 % risk weighted asset includes balance with local and foreign banks, loan against other bank's fixed deposit receipts, money at call, loan against internationally rated bank's guarantee and other investment on internationally rated banks. 100 % risk weighted asset includes investment on shares and debentures, loans and advances, fixed assets, other investment, all other assets (excluding tax paid and accrued interest receivable.)

Off balance sheet assets includes four types of risk-weighted asset (i.e. 0 %, 20%, 50 % and 100%). Bills collection has 0 % risk. Letter of credit with maturity period less than 6 months and guarantee against counter guarantee of international rated foreign banks have 20 % risk. 50 % risk weighted asset includes letter of credit with maturity period more than 6 months, bid bond, underwriting and performance bond. 100 % risk weighted items include advance payment guarantee, financial guarantee, other guarantee, irrevocable loan commitment, contingent liability on income tax and acceptance and other contingent liability.

The Capital Adequacy ratio of a bank is calculated as below:

- a. Capital Adequacy Ratio for Core Capital

$$\text{Capital Adequacy Ratio} = \frac{\text{Core Capital}}{\text{Total Risk Weighted Asset}}$$

- b. Capital Adequacy Ratio (CAR) for Total Capital Fund

$$\text{Capital Adequacy Ratio} = \frac{\text{Capital Fund}}{\text{Total Risk Weighted Asset}}$$

According to NRB directive 2005, the statutory Capital Adequacy Ratio (CAR) for core capital is 6 %, where as CAR for total capital fund is 12 % for fiscal year 2005/06.

## **2.3 Review of Related Studies.**

### **2.3.1 Review of Articles and Journals**

Santomero (1997) has analyzed the various risk faced by commercial banks. According to him, the major risk of commercial bank includes credit, market risk, interest risk, counterparty risk and liquidity risk. He has categorized this risk into following categories:

- i. Risk that can be eliminated by simple business practices.
- ii. Risk that must be actively managed at the firm level.
- iii. Risk that can be transferred to other participants.

According to him, the main reason for the risk management is:

- i. Managerial self interest
- ii. Non linearity of tax structure
- iii. Cost of financial distress
- iv. Existence of capital market imperfection.

The main method prescribed in his research for credit risk management includes:

1. Sound evaluation of credit rating and making rating system compatible.
2. Credit losses, currently regularly related to credit rating, need to be closely monitored.
3. Sound analysis of the evaluation of the diversified portfolio.

Basel Committee of Bank Supervision (2000) has mentioned that the main reason of serious problems in banking sector is related to lack of credit standards for borrowers and counterparties, poor portfolio risk management or lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a bank's counterparties. This phenomenon is common for both G 10 and non G 10 Countries.

In this publication, the credit risk has been defined as the potential that a bank borrower or counterparty will fail to meet its obligation in accordance with the agreed terms. Five principal has been laid down for the credit risk management.

They are:

- i. Establishing appropriate credit risk environment
- ii. Operation under sound credit granting process
- iii. Maintaining appropriate credit administration, measurement and monitoring process
- iv. Ensuring adequate controls over credit risk
- v. Effective role of supervisor

Kupper (2000) has made a study to identify the different types of risk and prescribes the method to handle those risks. He has identified three types of risk in the banking business (i.e. credit risk, market risk and operation risk) According to his study, credit risk has almost 70 % of shares in total banking risks. The typical credit risk share of total capital is 80% in Wholesale Banking, 50 % on Personal Banking and 10 % on financial Market.

He has presented the role of a banks' risk management function in the context of the need to break the vicious cycle of risk. The cycle refers to the process by which a bank assumes uneconomic risks and by definition, key large losses. As a consequence, the risk appetite of the bank is reduced, lending and trading risks are foregone and the bank loses market share. In turn, the bank adopts an aggressive marketing strategy to regain market share and the cycle starts over. His vicious cycle aptly describes the risk taking practices observed in the industry time and time again.

Rana (2001) alerts commercial banks of the directives issued by Nepal Rastra Bank on 2002. The article gives bird's eye view of major changes made in the new directive and suggests measures to be taken by commercial bank to comply with the new directives. Mr. Rana has highlighted the following points in his article:

- Capital adequacy ratio for commercial bank prescribed by Nepal Rastra Bank is even higher than the requirement in India.
- Classification of loans and advances into four category instead of six categories prescribed earlier.
- The newly prescribed change in income recognition system will require most of the banks to either upgrade or change their banking software.
- Banks will find it very difficult to maintain records of all persons, who are included in the definition of family/ relative.

In order to comply with the new NRB directives, he has suggested following measures:

- Upgrade/ change the banking software, which facilitates generating numerous reports required by Nepal Rastra Bank.
- Foresee capital adequacy position for a number of years ahead and initiate measures for increasing the capital if required.

- Review and revise overall credit policies to address new directives governing loan classification and loan loss provisioning.
- Strengthen banks' monitoring and follow-up department". Time has come to inculcate financial discipline to the customers. A number of interaction programs should be organized with credit customers so that NRB's new directives could be explained to them.
- Update their record with Credit Information Bureau (CIB). Also Banks should timely submit required return to CIB for its effective functioning.

Lawrence (2<sup>nd</sup> Quarter, 2006) has taken Basel II as a big opportunity for risk management. There are three stages in the credit process: the first is the simple risk control of the business- avoiding being over concentrated in any one sector, estimating the probability of defaulting and assessing recovery. In emerging markets, such as China, collection and recovery processes have to be better understood. The legal governance structure of liens has to be vastly improved and this will come in time with the new legal regulations being legislated. However, banks cannot afford to count on the legal system as has been painfully learnt from the Netting cases or the sovereign jurisprudence. These are operational risks that must be taken account of.

The second phase is the link between economic capital and return. Clearly banks would like to set minimum rates of return they expect to earn on their portfolios after provisioning. The link between economic profit and risk is the next stage in advancing the practice of credit risk management.

Finally, the third stage is when risk management is used as a strategic management tool to align Risk Adjusted Return on Economic Capital (RAROC) with ROE.

In most emerging markets, where many commercial banks have been protected from foreign banking invasion, the landscape is now changing. In Malaysia, new

legislation will allow regional banks to bank locally and in China, the new foreign bank regulations will allow investment banks, commercial banks and fund managers to enter the market, putting stress on the current “big four” oligopolistic structure. It is precisely in emerging markets where Basel II is an invaluable tool to go through the three stages set out above. This regulation is thus an important catalyst to implement all processes including analytic modeling – this includes better predictability of probability of default, exposure at default and loss given default - the business architecture that goes with it including the right corporate governance, the organization, the risk monitoring and reporting.

Banks that fail to have deep understanding of credit risk management will continue being caught in the time warp of the old banking paradigm and be targets for acquisitions by larger banks that have stronger risk management policies in place. The only key to survival and sustainable success is to reengineer and reform the risk strategy that maximizes shareholder value. It would thus be fallacious for the CEO to think of Basel II as just a compliance issue but he should rather use it as an opportunity to really get on top of using risk management as a cornerstone of strategic decision making.

### **2.3.2 Review of Theses**

Pandey (2002) has carried out study with the objectives to find out the impact of changes 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 wreck 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. In case 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 changes in NRB directives made impacts on the bank and the result are the followings:

1. Increase in operational procedures of the bank, which increase the operational cost of the bank.
2. A short term decreases in profitability, which result to fewer dividends to shareholders and less bonus to the employees.
3. Reduction in the loan exposure of the bank, which decreases the interest income but increase the protection of the depositor's money.
4. Increase protection to the money of the depositors through increased capital adequacy ratios and more stringent loan related documents.
5. Increase demand from shareholder's contribution in the bank by foregoing dividends for loan loss provisions and various other reserves to increase core 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 withstand tougher economic situation in the future with adequate capital and provision for losses. The tough time through which the bank is undergoing at present will prevail only for a couple of years 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 asset 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 to 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 new directives. In his study, he has studied only the provision 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.

Regmi (2004) conducted a thesis “A study on credit practices of joint venture commercial banks with reference to Nepal SBI Bank Ltd. And Nepal Bangladesh Bank Ltd.”

The basic objectives of this thesis are:

1. To determine impact of deposit in liquidity and its effect on lending practices.
2. To know the volume of contribution made by both bank in lending.
3. To examine lending efficiency and its contribution in profit.
4. To analyze trend of deposit utilization towards loan and advances and net profit and their projection for next five years.

The major findings of this study are:

1. In terms of liquidity ratio, current ratio of NSBL is higher than that of NBBL. The ratio of liquid fund to current liability of NSBL is higher than NBBL. This shows that NBBL has less consistency than NSBL. The ratio of cash and bank balance to deposit of NSBL is higher than that of NBBL. Cash and bank balance to interest-sensitive deposit measures the liquidity risk arising from fluctuation of interest rate in the market. The ratio of cash and bank balance to interest sensitive deposit of NSBL is higher than NSBL. NSBL has poor position due to high volume of interest sensitive liability in deposit mix.
2. The ratio of loans and advances to total assets of NBBL is higher than NSBL. Likewise mean ratio of loans and advances to total deposit of NBBL is higher than NSBL. The mean ratio of investment to loans and advances and

investment of NSBL is higher than that of NBBL. Likewise the ratio of total investment to total deposit of NSBL is higher than that of NBBL.

3. The ratio of credit to government enterprises to total credit of NBBL is higher than that of NSBL. The mean ratio of credit to bills paid and discount to total credit ratio of NBBL is higher than that of NSBL. NSBL has contributed 95.91% in private sector loan, 2.51% in government sector loan and 1.56% in bills paid and discounts. Likewise NBBL has contributed 90.83% in private sector loan, 4.29% in government sector loan and 4.84% in bills paid and discounts.
4. Among the various measurement of profitability ratio return on equity (ROE) and earning per share (EPS) reflects the relative measure of profitability. The performance of NBBL is better than NSBL. Return on equity and earning per share of NBBL are higher than that of NSBL in all years.
5. Co-efficient of correlation between deposit and loans & advances of both banks have positive value. Also co-efficient of correlation between total income and loans & advances of both bank have positive relation. Coefficient of correlation between net profit and loans & advances of NSBL is negative as other variables like increase in interest suspense and loan loss provision affects net profit. Coefficient of correlation between net profit and loans & advances of NBBL is positive.
6. Trend analysis of total deposit of NSBL and NBBL are found in increasing trend. The increment ratio on deposit of NSBL is lower in comparison to NBBL.

This study is mainly focused on the lending practices and the volume of credit in comparison to the deposits. Therefore, the major gap in this research is study of the risk involved in the lending practices or the study of credit risk. Therefore, further study on the risk involved in creating credit can be made.

## **2.4 Research Gap**

From the review of various literatures, it has been found many research work have been done on the study of NRB Directives and its compliance and analysis of credit management through loan loss provision, non-performing loans and capital adequacy; however, very few thesis have been found on the credit risk management which is the most important aspect of the banking sector. So, the researcher can make further research on capital adequacy, concentration risk, collateral risk, and the actual practices followed by the management of Nepalese commercial banks from its own side besides the NRB directives to manage and control the credit risks etc.

Hence the researcher had attempted to fill this gap by measuring the credit risk of KBL and MBL and by studying their credit risk management system. This study also aims to find out the organizational structure of KBL and MBL for the proper implementation and compliance of NRB Directives and to manage the credit risk.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction:**

The main objective of this research is to measure the credit risk of the selected commercial banks and to study the various management techniques and principles used by the Nepalese commercial banks to manage the credit risk. Thus, this chapter consists of the research methodology applied in the study for the fulfillment of the stated objectives. Thus the overall approach to the research is presented in this chapter. This chapter consists of research design, sample size and selection process, data collection procedure and data processing and presentation techniques and tools.

#### **3.2 Research Design**

This study is the combination of descriptive and analytical type of research. Historical data are used to identify and analyze the credit risk of a bank in the past period. Similarly, management system, organizational structure and policies for mitigating the credit risk and the credit risk management procedures have been presented in descriptive form so as to identify the current status from which pitfalls can be identified. From collection of past data and information from key informants, the credit risk management system has been analyzed and recommendations have been made for improving the credit risk management of banks. Since only two banks have been selected for the study, this study is a comparative study between these two banks in credit risk and their management system.

### **3.3 Population and Samples**

Since the research topic is about credit risk management of commercial banks, all the commercial banks of Nepal form population of the study. The population for the study comprises all the Nepalese commercial banks. Total commercial bank in Nepal till date is 26 as stated by the bulletin published by NRB. Among the total population of 26 only two commercial banks are taken as sample for the comparative study. The sample is chosen with an objective to find out the credit risk management system of new commercial banks, which have completed 6 years. MBL and KBL are taken for the study as there exists similarities between these banks in many respects such as capital base, profit, deposit, lending and date of establishment etc. made researcher to take these two bank as samples

### **3.4 Sources of Data and Collection Procedure**

For this study, both primary and secondary data are used. Secondary data are collected mainly from published sources like annual reports, prospectus, newspaper, journal, Internet and other sources. Secondary data published in the annual reports of concerned organizations are collected through personal visit in respective organization as well as from their web sites. All the annual report published is verified and approved through AGM of respective banks and also approved by NRB. Since these annual reports were approved by concerned body the reports were considered authentic to be present in this research. Whereas, primary data are mainly collected through questionnaire, interview and direct observation. For the credit risk analysis, information is collected through questionnaire from 10 staffs each from both KBL and MBL working in Credit and Credit Administration and Control Departments. While collecting the data, in KBL, the total staffs in Credit and Credit Administration and Control Departments is 12, out of which 10 staffs have responded to the questionnaire, where as in

MBL 10 staffs from Credit and Credit Administration and Control Departments has filled up the questionnaire. Besides this, interview has also been taken from 2 key officials of KBL and MBL respectively.

### **3.5. Data Processing and Presentation**

The data obtained from the different sources are in raw form. The raw data is processed and converted into required form. For this study, required data are taken from the secondary source (bank's publication) and presented in this study. For presentation, different tables and charts are used. Besides this, primary data collected from different sources, are also presented whenever required. Raw data are attached in APPENDIXure. Computation has been done with the help of scientific calculator and computer software program.

### **3.6. Data Analysis Tools**

In order to get the concrete results from the research, data are analyzed by using different types of tools. As per topic requirements, emphasis is given on statistical tools rather than financial tools. So for this study following statistical tools are used:

#### **Arithmetic Mean:**

Arithmetic Mean has been widely used in this study. It has been used to calculate the average for 6 years data in some cases for 5 and 4 years 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. The Arithmetic Mean of loan, deposits, non-performing loan, loan loss provision etc. have been calculated in this study. It is computed by using following formula:

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n} \quad \text{Where, } \bar{X} = \text{Mean}$$

$$\sum X = \text{Sum of all the Variable X}$$

$$n = \text{Variables involved}$$

### **Standard Deviation:**

Standard Deviation is a tool to measure the risk. Standard Deviation has been used wherever the mean is calculated to study the deviation of the data from the mean. Here, standard deviation is used as a measure of dispersion. It has also been used as a measure to identify the risk. Higher the deviation greater the risk and vice versa. Mathematically, it is defined as the positive square root of their arithmetic mean of squares of the deviation of the given observations from their arithmetic mean of a set of value. Here, it is denoted by the letter sigma S.D. and ( ).

It can be computed by using following formula

$$\text{S.D}(\delta) = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

Greater the magnitude of standard deviation, higher will be the fluctuation and vice versa. (Gupta, 2002).

### **Default Probability**

Default probability is the probability that the borrowing client will default or the probability of non-repayment by the borrowing client. In the loan market, the adverse selection is the situation that occurs as the interest rate rises and the honest borrowers decide not to borrow. Therefore, the bank with higher interest rate on loans is left with an adverse pool of borrowers – those who know they are more likely to default. We can calculate the Default Probability by using the following formula:

- $P(1+K) = 1+i$

Or,

$$\text{Where, } P = \frac{(1 + i)}{(1 + K)}$$

K = Promised Interest on Loan/Average Interest on Loan

i = Risk Free Rate of return

P= Repayment Probability &

Default Probability = 1 – P = 1 – Repayment Probability

### **Hypothesis Test**

In this study, hypothesis test has been used as one of the important aspects of decision-making. It consists of decision rules required for drawing probabilistic inferences about the population parameter. Hypothesis is a quantitative statement about the population parameter, where as hypothesis test is the act of verification of such statement. While testing a hypothesis, two complementary hypotheses are set up at one time. If one of the hypotheses is accepted, then the other hypothesis is rejected.

The two types of hypotheses include,

#### **a. Null Hypothesis**

Null hypothesis is a statistical hypothesis made about the population parameter to test its validity for the purpose of possible acceptance. It is usually denoted by  $H_0$  or “H sub- zero”.

#### **b. Alternative Hypothesis**

A complementary hypothesis to null hypothesis is called alternative hypothesis. In other words, a hypothesis test, which is set up against the null hypothesis, is called an alternative hypothesis. It is indicated by  $H_1$ .

### $\chi^2$ – Test (Chi- square test)

$\chi^2$  – Test is a non-parametric test, which describes the magnitude of difference between observed frequencies and expected (theoretical frequencies). In other word, it describes the magnitude of the discrepancy between theory and observation. It is defined as,

$$\chi^2 = \frac{\sum(O-E)^2}{E}$$

Where, O = Observed frequencies

E = Expected Frequencies

The calculated value is compared with the table value. The table value is determined by referring to the  $\chi^2$  tables in certain degree of freedom and level of significance. Here, the level of significance is assumed 5 %. (Sharma and Chaudhary, 2001)

In this study,  $\chi^2$  – Test has been used to test the magnitude of the discrepancy between observed and expected frequencies related to preference of banks staffs regarding various factor for lending and sector for lending.

### **Ratio Analysis**

In this study, various ratios have been used as per requirement. The major ratios used in this study includes:

- i. Loans and advances to Total Risk Weighted Assets Ratio
- ii. Non-performing Loan to Total Loans and advances Ratio
- iii. Loan Loss Provision to Non Performing Loan Ratio
- iv. Loan Loss Provision to Total Loans and Advances
- v. Core Capital to Total Risk Weighted Asset (RWA)
- vi. Supplementary Capital to Total Risk Weighted Asset
- vii. Capital Fund to Total Risk Weighted Asset (RWA)

## **CHAPTER IV**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1 Introduction**

This is the section where, the filtered data are presented and analyzed. This is one of the major chapters of this study because it includes detail analysis and interpretation of data from which concrete result can be obtained. This chapter consists of various calculation made for the analysis of credit risks of the sample banks. To make our study effective, precise and easily understandable, this chapter is categorized in three parts; presentation, analysis and interpretation. The analysis is fully based on secondary data. In presentation section, data are presented in terms of table and charts. The presented data are then analyzed using different statistical tools mentioned in chapter three. At last the results of analysis are interpreted. Though there is no distinct line of demarcation for each section (like presentation section, analysis section & interpretation section). In this thesis primary data, which is collected through questionnaires and personal interview with the various staffs, are also used equally.

#### **4.2 Comparative Analysis of Credit Risk**

The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between 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. (Basel Committee on Banking Supervision, 2005)

In order to manage credit risk, it has to be measured. Measurement of credit risk requires thorough assessment of credit appraisal by applying various statistical tools and techniques.

The key credit performance indicators of KBL and MBL have been analyzed using various financial and statistical tools which are as follows,

#### **4.2.1. Ratio Analysis**

##### **4.2.1.1. Total Loans, Advances & Bills Purchased to Risk Weighted Assets (RWA) Ratio**

The ratio of loans, advances and bills purchased to total risk weighted assets measures the volume of loans and advances in the structure of total risk weighted assets (i.e. the total assets after the adjustment of certain degree of risk or the risk assets). The total RWA do not include the risk-free assets like cash because they hold 0% risk. The high degree of ratio of Total loans & advances to Total RWA indicates the proportion of the loans and advances in the total RWA. This indicates the high degree of risks for the bank because loans and advances except against Fixed Deposit Receipt, government securities and against guarantees of internationally rated banks are considered as 100% risky assets. Further, the high degree of the ratio is representative of low liquidity ratio. Granting Loans and advances always carry a certain degree of risk. Thus this asset of banking business is regarded as risky assets. Hence this ratio measures the management attitude towards risky assets. The lower ratio is indicative of lower proportion of income generating assets, high degree of safety in liquidity and low degree of risk and vice versa.

**Table 4.1**

**Loans, Advances and Bills Purchased to Total Risk Weighted Asset Ratio (%)**  
**(Rs. in Million)**

Fiscal year	KBL			MBL		
	Loan & Advances	Total Risk Weighted Asset	Ratio (%)	Loan & Advances	Total Risk Weighted Assets	Ratio(%)
2001/02	1,126.60	1,356.83	83.03	680.29	981	69.35
2002/03	2,137.59	2,528.77	84.53	1,495.86	2,092.01	71.50
2003/04	3,697.98	4,449.40	83.11	2,540.79	3,250.66	78.16
2004/05	5,681.01	6,291.84	90.29	5,130.22	6,063.13	84.61
2005/06	7,007.79	7,625.05	91.90	6,146.57	7,631.99	80.54
2006/07	9,062.43	9,959.91	90.99	7,319.94	9,200.66	79.56
2007/08	11,522.38	13,070.38	88.16	8,964.07	10,417.06	86.05
		<b>Mean</b>	<b>76.50</b>		<b>Mean</b>	<b>78.54</b>
		<b>S.D.</b>	<b>3.54</b>		<b>S.D.</b>	<b>5.76</b>

**Source: Annual Reports**

**Table 4.1** exhibits the loans and advances to total risk weighted assets of two commercial banks for seven consecutive years. This ratio shows the fluctuating trend of both KBL and MBL. RWA is increasing year by year because of the increase in total loan and advances in both banks. The overall ratio of KBL is 76.50% where as ratio in MBL is 78.54%. From this, it is clear that out of total risk weighted assets in balance items the proportion of loans and advances is lower in KBL as compared to MBL. This means that the credit risk is higher in MBL as compared to KBL. Likewise, the standard deviation of KBL and MBL are 3.54 and 5.76 % respectively. This indicates that the ratio deviate more from the

average in case of KBL than MBL. The data shows the credit risk is increasing as the total loan and advances is increasing. Looking to the trend of samples we can assume that the same trend is occurring in whole banking industry.

#### 4.2.1.2. Non-Performing Loan to Total Loans and Advances Ratio

This ratio determines the proportion of non-performing loans in the total loan portfolio. As per Nepal Rastra Bank directives the loans falling under category of substandard, doubtful and bad loan are regarded as non-performing loan. Higher the ratio implies the bad quality of assets of banks in the form of loans and advances. Hence the lower NPL to total credit ratio is preferred.

**Table 4.2**  
**Non-Performing Loan to Total Loans and Advances**  
**(Rs. in Million)**

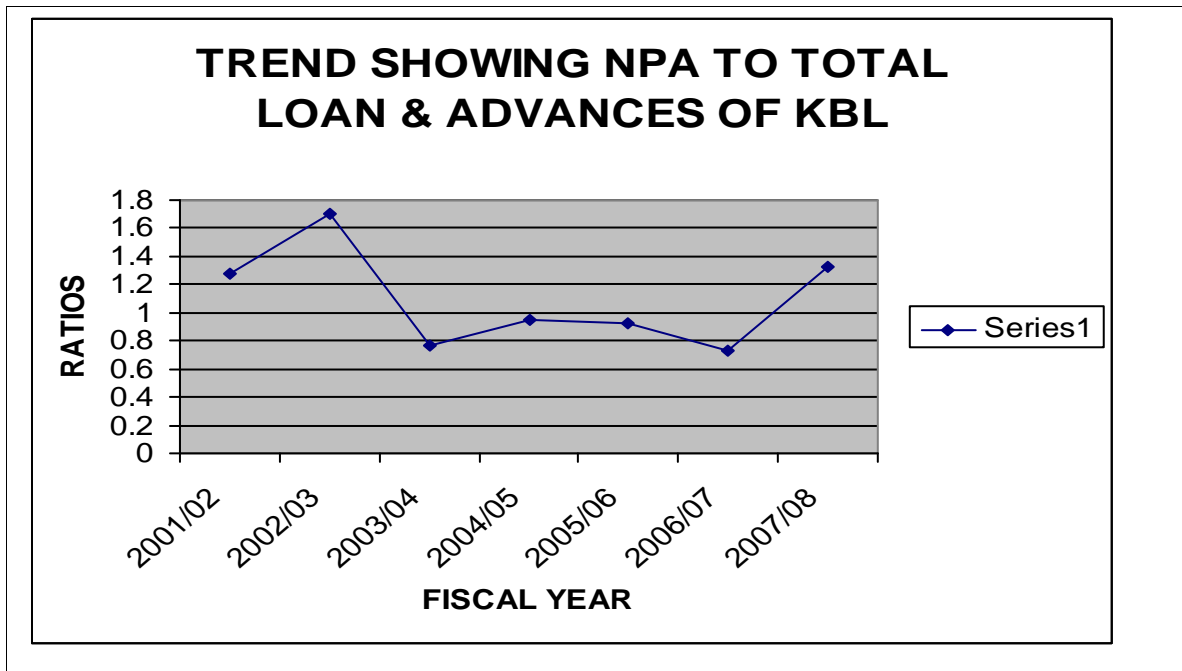
Fiscal Year	KBL			MBL		
	NPL	Loan & Advances	Ratio (%)	NPL	Loan & Advances	Ratio (%)
2001/02	14.33	1,126.60	1.27	71.12	680.29	10.45
2002/03	36.32	2,137.59	1.70	31.09	1,495.86	2.08
2003/04	28.19	3,697.98	0.76	24.98	2,540.79	0.98
2004/05	53.99	5,681.01	0.95	19.86	5,130.22	0.39
2005/06	64.35	7,007.79	0.92	16.92	6,146.57	0.28
2006/07	66.12	9,062.43	0.73	85.17	7,319.94	1.16
2007/08	152.48	11,522.38	1.32	92.92	8,964.07	1.04
		<b>Mean</b>	<b>1.09</b>		<b>Mean</b>	<b>2.19</b>
		<b>S.D.</b>	<b>0.33</b>		<b>S.D.</b>	<b>3.36</b>

**Source: Annual Reports**

Table 4.2. Exhibits the ratio of non-performing loans to total loans and advances of KBL and MBL for seven consecutive years. It is found that the NPL of both

KBL and MBL is in decreasing trend though the loans and advances are in increasing trend. The average NPL ratios of KBL and MBL are 1.09% and 2.19 % respectively. It can be inferred that the average NPL of MBL is higher than that of KBL. This is due to the highest amount of NPL in fiscal year 2001/02 (i.e. 10.45%). But in more recent years the NPL of the MBL has been decreasing significantly. The standard deviation of KBL and MBL are 0.33 and 3.36. Thus, it portrays that KBL ratios deviate less from the average ratio than that of MBL, which refers to less risk to KBL. KBL credit risk is more and the deviation shows it is manageable compared to MBL.

Fig: 4.1



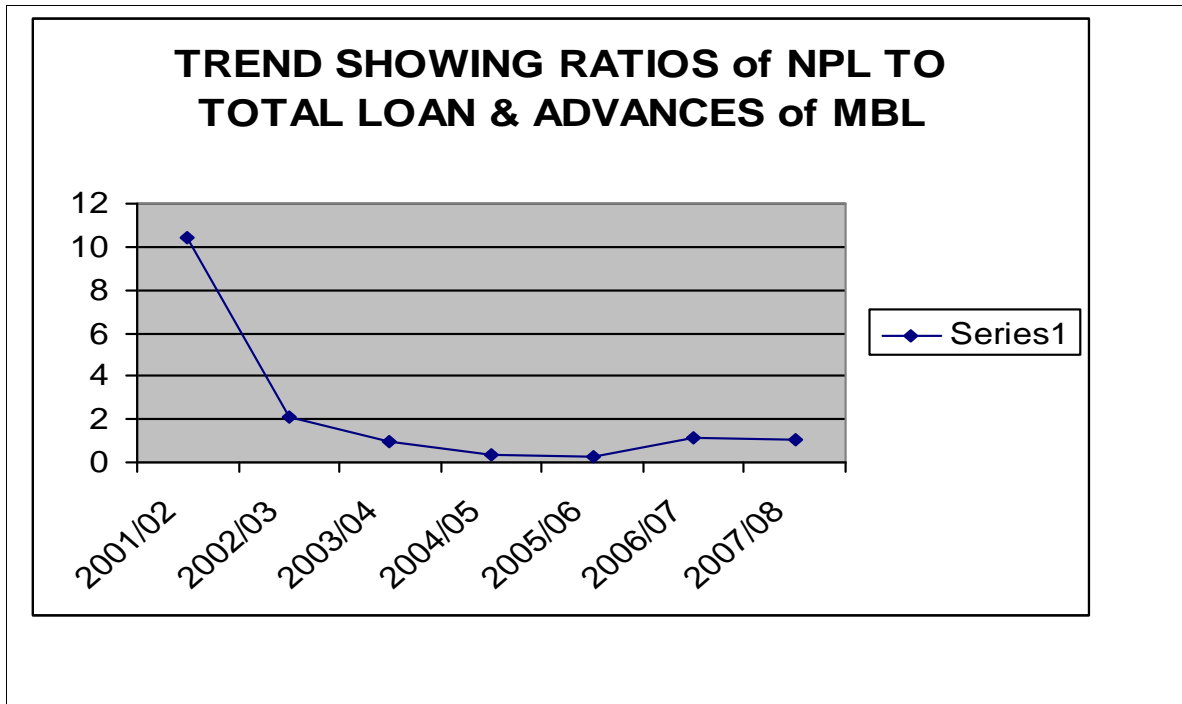


Fig 4.1. is the graphical presentation of the Table No. 4.2 which shows the trend of NPL to Total loans and advances of MBL. The ratio of KBL is in a fluctuating trend. This trend shows that the proportion of NPL is decreasing year by year. This is mainly because both the bank seems more serious regarding credit monitoring and risk management.

#### 4.2.1.3 Loan Loss Provision to Non Performing Loan (NPL) Ratio

This ratio determines the proportion of provision held to non-performing of bank. This ratio measures up to what extent of risk inherent in NPL is covered by total loan loss provision. The higher the ratio, the better cushion that the bank provides for recovering from loss caused by NPL. Hence higher ratio signifies the better arrangement for the credit risk of a bank.

**Table 4.3**  
**Loan Loss Provision to Non-Performing loan (%)**  
**(Rs in Million)**

<b>Fiscal Year</b>	<b>KBL</b>			<b>MBL</b>		
	<b>LLP</b>	<b>NPL</b>	<b>Ratio (%)</b>	<b>LLP</b>	<b>NPL</b>	<b>Ratio (%)</b>
2001/02	15.05	14.33	105.02	25.23	71.12	35.48
2002/03	31.85	36.32	87.69	31.70	31.09	101.96
2003/04	48.98	28.19	173.75	47.68	24.98	190.87
2004/05	90.09	53.99	166.86	68.79	19.86	346.37
2005/06	115.93	64.35	180.16	78.15	16.92	461.88
2006/07	133.42	66.12	201.78	190.05	85.17	223.14
2007/08	187.29	152.48	122.83	321.75	92.92	346.27
		<b>Mean</b>	<b>148.30</b>		<b>Mean</b>	<b>194.24</b>
		<b>S.D.</b>	<b>39.75</b>		<b>S.D.</b>	<b>140.14</b>

**Source: Annual Reports**

Table 4.3. shows the ratio of provision held to non- performing loan of KBL and MBL for seven consecutive years. The figure represented in the table depicts that the MBL has the higher ratio in all years except in fiscal year 2001/02. The NPL ratio of KBL is more fluctuating than the MBL. The overall ratios of NPL of KBL and MBL are 148.30 and 194.24 % respectively. This shows that MBL has provided higher cushion of provisioning to non-performing loan compared to KBL. The standard deviation of KBL and MBL are 39.75 and 140.14 respectively. This means that there exists the higher deviation in the ratio from the average ratio in context of MBL than KBL. This table shows MBL investment in riskier assets is higher compared to KBL. The figure also shows that due to increase in credit and due to risk involved in credit the provision amount is increasing. The increase in provisions means decrease in net profit.

#### 4.2.1.4. Loan Loss Provision to Total Loans and Advances

This ratio indicates the amount of Loan Loss Provision, a cushion for the possibility of default, to total loans and advances of a bank. Since high provision has to be made for non-performing loan, higher provision for loan loss reflects increasing non-performing loan in volume of total loans and advances. The low ratio signifies the good quality of assets in the volume of loans and advances and makes efforts to cope with probable loan loss. Higher ratio implies that the bank has the higher proportion of NPL in bank loan portfolio and thus the bank is greater exposed to the credit risk.

**Table 4.4**

#### **Loan Loss Provision to Total Loan and Advances (%) (Rs. in Million)**

<b>Fiscal Year</b>	<b>KBL</b>			<b>MBL</b>		
	<b>LLP</b>	<b>Loan &amp; Advances</b>	<b>Ratio (%)</b>	<b>LLP</b>	<b>Loan &amp; Advances</b>	<b>Ratio (%)</b>
2001/02	15.05	1126.60	1.34	25.23	680.29	3.71
2002/03	31.85	2137.59	1.49	31.70	1,495.86	2.12
2003/04	48.98	3697.98	1.32	47.68	2,540.79	1.88
2004/05	90.09	5681.01	1.59	68.79	5,130.22	1.34
2005/06	115.93	7007.79	1.65	78.15	6,146.57	1.27
2006/07	133.42	9,062.43	1.47	190.05	7,319.94	2.60
2007/08	187.29	11,522.38	1.62	321.75	8,964.07	3.59
		<b>Mean</b>	<b>1.50</b>		<b>Mean</b>	<b>2.36</b>
		<b>S.D.</b>	<b>0.12</b>		<b>S.D.</b>	<b>0.92</b>

**Source: Annual Reports**

From above table, it is found that the both banks have least portion of loan loss provision. This means that both banks have least amount of non-performing loan. The average LLP to total loan and advances ratio is 1.50 and 2.36 % of KBL and MBL respectively. The ratio is higher in MBL than KBL. This higher ratio reflects that the MBL has higher non-performing loan compared to KBL.

Likewise the Standard deviation of KBL and MBL are 0.12 and 0.92 respectively, From this, it is clear that the ratio of MBL has higher deviation from its average ratio and so has higher risk than that of KBL.

#### **4.2.2. Collateral/Security-wise Lending**

Security wise lending refers to the lending of banks to the client against the various collateral. As the collateral is also key aspect as a partial remedy for the credit risk while lending, the analysis of security helps to identify the credit risk position of the bank. The collateral can be anything ranging from the more liquid and secure collateral such as government bonds, bills, Fixed deposit Receipt to Illiquid Fixed asset and Immovable property. Banks even can lend without collateral for the trustworthy customers. The analysis of security wise lending is as below,

##### **4.2.2.1 Collateral/ Security wise Lending of KBL**

This analysis will help to identify the various types of securities on the basis of which loans have been provided by KBL. This also assists to analyze the credit risk of a bank. As more liquid the collateral, low credit risk to the bank. Here, security wise lending includes 12 types of securities, including without collateral lending.

**Table. 4.5**  
**Ranking of KBL Collateral on the basis of amount of loan extended**  
**(Rs. In million)**

S. No.	Security against lending	Average Lending Against Each Collateral	Rank
	<b>A. Secured</b>		
1.	Movable/Non Movable Property	4,709	1
2.	Guarantee of Local Licensed institutions	52	3
3.	Government Guarantee	6	7
4..	Guarantee of internationally rated bank	-	
5.	Against export Documents	42	4
6.	Own bank's Fixed Deposit Receipts	7	8
7.	Other bank's Fixed Deposit Receipts	53	6
8.	Against Government Bonds	28	5
9.	Counter Guarantee	-	
10	Loan against Personal Guarantee	3	9
11	Other Securities	847	2
	<b>B. Unsecured</b>	-	
	<b>Total</b>	<b>5,748</b>	

**Source: Annual Reports (See APPENDIX 4 (A) for details)**

From the table 4.5., it is clear that over the seven years the KBL has extended the credit mostly against the Movable/non Movable Property. The average lending against the movable/ non-movable property is 4,709 million, which is the highest among the lending against all securities. The bank has not granted any loan without collateral, which is the good sign of lending practice. The bank even does not have lending against the guarantee of internationally rated bank and counter guarantee. The bank has extended least credit against the personal guarantee, which is ranked 9<sup>th</sup> position on the basis of average amount of lending. The bank also has been granting loan against the more liquid and secured collateral such as Government bonds, own bank's Fixed Deposit Receipt (FDR)

and other banks FDR, which is ranked 5, 8, and 6 respectively. Besides the above-mentioned collateral, the bank has also granted credit against the other collaterals, which is ranked 2<sup>nd</sup> position. The bank also granted the credit against the Guarantee of local institutions as well as against government guarantee, which ranks 3<sup>rd</sup> and 7<sup>th</sup> position respectively on the basis of average amount of loan extended against these securities. This means that the bank has been granting the loan against diversified collateral. However, the large portion of loan has been granted against the movable/non movable property.

#### 4.2.2.2. Collateral/Security-wise Lending of MBL

**Table 4.6**  
**Ranking of MBL Collateral on the basis of amount of loan extended**

(Rs. in million)

S. No.	Security against lending	Average Lending Against Each Collateral	Rank
	<b>A. Secured</b>		
1.	Movable/Non Movable Property	3,965	1
2.	Guarantee of Local Licensed institutions	127	3
3.	Government Guarantee	0	
4.	Guarantee of internationally rated bank	0	
5.	Against export Documents	0	
6.	Own bank's Fixed Deposit Receipts	11	5
7.	Other bank's Fixed Deposit Receipts	77	4
8.	Against Government Bonds	1	7
9.	Counter Guarantee	0	
10	Loan against Personal Guarantee	40	8
11	Other Securities	388	2
	<b>B. Unsecured</b>	<b>2</b>	<b>6</b>
	<b>Total</b>	<b>4,611</b>	

**Source: Annual Reports (See APPENDIX 4 (B) for details)**

Table 4.6 depicts that the MBL has extended against the 8 Securities. The MBL has granted the highest amount of loan against the Movable/ Non- Movable property, the average lending against this collateral for the past seven years is Rs 3,965 million. Likewise the average loan against the other securities than above mentioned is Rs 388 million, which is ranked 2. The loan granted against the guarantee of local licensed institutions, other bank's FDR, own bank's FDR is ranked 3, 4 & 5 respectively. The bank has granted least amount of loan against the Personal Guarantee and Government bonds and no any loans against government guarantee, guarantee of internationally rated bank, export documents and counter guarantee.

On the contrary to KBL, MBL also has extended the loan without the collateral. The average loan granted without collateral is Rs 2 million, which is ranked 6. From this it is clear that the MBL has higher risk on the lending than that in KBL. The MBL has granted loan without collateral, which indicates the bank has the higher risk because higher provision amount and lack of collateral.

#### **4.2.3. Risk Weighted Lending Analysis**

The lending against own bank Fixed deposit receipt and government securities are considered as risk free lending or possess 0% risk weight. Similarly, the loan against other banks Fixed Deposit Receipt and Counter guarantee of internationally rated banks are considered as moderate level risk lending, and the loan against all other securities or without collateral are taken as high level risk lending. The risk weighted for moderate level and high-level risk lending is 20 % and 100 % respectively. The higher the risk-free and moderate-level lending, the lower is the credit risk of the bank and vice versa. The loan has been categorized on the basis of NRB Risk weighted Asset basis.:

**Table 4.7**  
**Proportion of different category of risk weighted lending of KBL**

Security	Risk Weighted (%)	2001/0 2	2002/0 3	2003/0 4	2004/0 5	2005/0 6	Averag e
Risk Free Lending to Total Loan	0%	0.79	2.62	3.62	0.03	0.32	1.48
Moderate Level Risk Lending to Total Loan	20%	1.05	1.13	0.87	0.90	0.91	0.97
High Level Risk Lending to Total Loan	100%	98.17	96.25	95.51	99.07	98.77	97.55

**Source: Annual Reports**

Table 4.7 exhibits the percentage of different categories of risk lending of KBL for 5 years. The table further reveals that KBL has the highest lending on 100 % risk weighted lending i.e. on high-risk category lending. The bank has extended 0.79, 2.62, 3.62, 0.03% and 0.32% of total lending against the risk-free collateral (i.e. own banks FDRs and Government bonds) in fiscal year 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively. Likewise the bank has extended 1.05, 1.13, 0.87, 0.90 and 0.91 percent of total loan against the moderate-level risk collateral in the fiscal year 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively. In five years, the bank has made lower amount of high-level risk lending (i.e. 95.51 %) in fiscal year 2003/04. The average lending in 5 years on risk free, moderate level and high risk level lending is 1.48 %, 0.97% and 97.55 % respectively.

**Table 4.8**  
**Proportion of different category of risk weighted lending of MBL**

Security	Risk Weight	2001/02	2002/03	2003/04	2004/05	2005/06 <sup>e</sup>	Average
Risk Free Lending to Total Loan	0%	0.04	0.12	0.02	0.32	0.70	0.24
Moderate Risk Lending to Total Loan	20%	0	0	0	0.11	1.36	0.29
High Risk Lending to Total Loan	100%	99.96	99.88	99.98	99.57	97.95	99.47

**Source: Annual Reports**

Table 4.8 table exhibits percentage of lending of different categories of risk of MBL for 5 years. The table further reveals that MBL has the highest lending on 100 percent risk level (i.e loan against fixed asset and guarantee). The bank has extended 0.04, 0.12, 0.02, 0.32 and 0.70 % of total lending against the risk free collateral (i.e. own banks FDRs and Government bonds) in fiscal year 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 respectively. Likewise the bank has not made moderate-level risk lending (i.e. against other banks FDRs and counter guarantee against the internationally rated bank) except in fiscal year 2004/05, which is 0.11 %. In five years, the bank has made lower amount of high-level risk lending (i.e. 97.95 %) in fiscal year 2005/06. The average lending in 5 years on risk free, moderate level and high risk level lending is 0.24 %, 0.29 % and 99.47 % respectively. From the table 4.8, it is clear that both banks have extended least amount of loan against the lower level risk collateral. Between these two banks,

KBL has made more lending in risk free and moderate level risk. It can also be said that KBL has been providing more loan against own & other banks FDRs and government bonds than MBL. This indicates that the KBL has slightly less riskier lending than MBL.

#### **4.2.4. Credit Concentration on Single Sector**

This analysis helps to find out the credit concentration of banks in different sectors. The higher the concentration of bank's credit in one sector, the higher will be the risk for a bank and vice versa. The proportion of sector wise lending to total loan has been presented in table below:

**Table 4.9**  
**Credit Concentration on different Sector on fiscal year 2005/06**

Sector	KBL (%)	Rank for KBL	MBL (%)	Rank for MBL
Agriculture	3.63	9	0.94	11
Mining	2.08	11	1.11	10
Productions (Manufacturing)	19.88	1	30.12	1
Construction	8.94	6	9.80	6
Metal Productions, Machinery & Electric Tools & Fittings	2.35	10	2.61	8
Transport equipment, Production & Fitting	7.86	7	1.48	9
Transport, communication and public services	1.76	12	12.41	3
Whole Seller & Retailer	6.03	8	18.39	2
Finance Insurance & Fixed Assets	11.43	3	2.90	7
Service Industries	9.13	5	10.14	4
Consumer Loan	9.37	4	0.07	12
Local Government	-	13	-	13
Others	17.55	2	10.04	5
<b>Total</b>	<b>100.00</b>		<b>100.00</b>	

**Source: NRB, Banking & Financial Statistics; Mid July, 2006 and APPENDIX 5.**

Table 4.9 shows that KBL and MBL has extended more than 10 % of their total loan in 3 sectors and 5 sectors respectively. Similarly, KBL & MBL have invested highest of 19.88% and 30.12% of total loan in production or manufacturing sector where as both the banks have extended least credit in Agriculture and Mining sector. Loan to local government is the neglected area in both the banks. It seems that MBL is highly concentrated with 30.12% of its loan in production sector and has very less portion of its loan on consumer loan sector. It is also clear that credit concentration on single sector of MBL is more than that of KBL. This indicates

that MBL has higher concentration risk on production, whole seller and retailer sector, as the exposure on this sector is 30.12 % and 18.39% of total loan respectively.

#### **4.2.5. Sector-wise Loan to Core Capital**

This is the ratio between loans extended by bank in a sector and core capital. Core capital includes share capital, retained earning, general reserve, capital adjustment fund, non-redeemable preferred stock etc. According to NRB directive no. 3 of Unified Directive 2005, the loan exposure on single sector more than 50 % of core capital needs to be verified at least quarterly as there exists the concentration risk. Similarly, single sector loan concentration more 100 % of core capital needs to be approved by the board of directors as it involves very high risk. The core capital of KBL and MBL is Rs 858.52 and Rs. 911.54 million respectively in fiscal year 2005/06.

**Table 4.10**  
**Sector-wise loan to Core Capital in fiscal year 2005/06**  
**(Rs. In million)**

S.No.	Sector	Loan-KBL	Sector-wise loan to Core Capital (%)	Loan-MBL	Sector-wise loan to Core Capital (%)
1	Agriculture	251.3	29.27	56.5	6.20
2	Mine	143.8	16.75	66.9	7.34
3	Manufacturing	1375.1	160.17	1817.2	199.35
4	Construction	618.8	72.08	591.2	64.86
5	Metal and Electric Products	162.3	18.90	157.3	17.26
6	Transport equipment	543.8	63.34	89.5	9.82
7	Transport, communication and public utilities	121.6	14.16	748.9	82.16
8	Whole Seller & Retailer	417.1	48.58	1109.3	121.70
9	Finance Insurance & Real Estate	790.6	92.09	174.9	19.19
10	Service Industries	631.6	73.57	611.9	67.13
11	Consumer Loan	648.3	75.51	4.3	0.47
12	Local Government	0	0	0	0
13	Others	1214.2	141.43	605.5	66.43
	Total	6918.5		6033.4	

**Source: NRB, Banking & Financial Statistics, Mid July 2006**

Table 4.10 exhibits the percentage of loan on single sector to core capital of KBL and MBL in fiscal year 2005/06. Above table depicts that the ratio of KBL and MBL has crossed 50 % in 7 and 6 sectors respectively. Out of them, the sector wise loan to core capital ratio of both KBL and MBL has crossed 100 % in 2 sectors. The above table indicates that MBL has higher concentration risk than KBL as MBL has extended more loans in few sectors than KBL. Both KBL and

MBL has highest ratio in manufacturing sector, which is 160.17% and 199.35% respectively. In this sector also, the ratio of MBL is higher than that of KBL. There is wide range of differences in the ratio of different loan sectors of MBL than that of KBL.

#### 4.2.6. Default Probability

The default probability is the probability that the borrowing client will default and will not repay the loan. Therefore, higher default probability shows the higher credit risk of the banks and vice-versa. Default probability can be calculated on the basis of the interest rate on loans.

**Table 4.11**  
**Calculation of Default Probability**

	<b>KBL (%)</b>	<b>MBL (%)</b>	<b>Remarks</b>
Average Interest Rate on Loan	9.4712	8.3077	
Risk Free rate of return	3.25	3.25	T-bill rate 3.25% for 90-days & 3.95 for 364 days.
Repayment Probability	0.9432	0.9533	= (1.0325/1.094712) & (1.0325/ 1.083077)
Default Probability	0.0568 i.e. 5.68%	0.0467 i.e. 4.67%	

**Source: “Annual Report, NRB” & “Banking & Financial Statistics, Mid-July 2006) (see APPENDIX-8 and APPENDIX-9 for details)**

The Default probability of KBL is higher than that of MBL (5.68 % > 4.67%). Therefore, we can say that KBL has higher credit risk or default risk than that of MBL in terms of its interest on loan. This is due to the situation of adverse selection. In the loan market, the adverse selection is the situation that occurs as

the interest rate rises and the honest borrowers decide not to borrow. The bank is left with an adverse pool of borrowers – those who know they are more likely to default. Thus due to the higher average interest rate of KBL, it has more default probability than MBL

#### **4.2.7. Organizational Structure for Credit Risk Management**

As the credit risk occupy the highest proportion of risk in banking sector, the bank should have a well-defined mechanism to analyze and manage the credit risk. For handling the credit function of bank, both banks have credit department headed by the Head-Credit manager. The final credit decisions are taken by the credit manager or Assistant General Manager, CEO or sometimes by Board of Directors depending upon their lending authority. If the bank has to extend credit to single borrowers above 25 % of fund based and 50 % of non fund based loan, the final credit decision must be taken by the Board of Directors. For the effective credit risk management, KBL and MBL have separate Committees, which monitors the risk associated with the lending practice and develop strategies and plans to minimize the credit risk.

##### **a. Kumari Bank Ltd (KBL)**

Chhatkuli, N. (Personal Interview, April 16, 2007) states that Board of Directors of KBL will have the overall responsibility for formulating policies on Credit Risk Management and the ultimate authority for deciding the overall credit risk monitoring and management. The credit decision-making authority goes up in hierarchy from Assistant General Manager to CEO to Executive Sub Committee (ESC) and finally to Board of Directors. The credit decisions which are beyond the jurisdiction of Chief Executive Officer are taken by the Executive Sub Committee (ESC) and the decisions even beyond the jurisdiction of ESC are taken by the Board of Directors. The Executive Sub Committee reviews credit,

operational and other banking facilities in timely and accurate manner. It is chaired by the Chairman of the bank and constitutes other 2 non executive members.

At the management level, Asset Liability Management Committee (ALCO) is the main committee concerned with development and implementation of strategy and plans related to management of various risks. The Chief Executive Officer of the bank heads the ALCO with all the head of the various departments (such as credit, marketing, operations, strategy and planning and treasury). CEO may invite additional members in ALCO, according to business needs. ALCO is required to meet on regular interval and major decisions made to be briefed to the Board. There is also an Operations Committee to manage and discuss upon Banks Operations, Credit and Marketing issues. In KBL all the credit activities is governed by the Credit Policies Guidelines and the corporate credit and retail department perform the credit functions. These departments are headed by the Senior Manager, Assistant Manager or Deputy Manager.

The bank also has set up a Risk Assessment Division independent of the normal Credit Relationship Unit to analyze the potential risk associated with both funded and non-funded credit exposures and to ensure credit facilities are within the risk appetite of the bank. The Department consists of 3 distinct units, Risk Approval, Credit Administration and Recovery. The Division carries out independent credit proposal reviews and assessment, ensures NRB Directives and Internal Guidelines relating to Credit are properly followed. It also handles recovery issues related to credit. The Credit Administration and Control Department also monitors all the credit documentations and post-credit performance of the credit client. This department has responsibility to monitor the credit client once the credit department has extended the loan in order to maintain the high-quality risk assets.

The existing practice of obtaining adequate collateral (Fixed assets) is the major strength of KBL to manage the credit risk.

**b. Machhapuchchhre Bank Ltd (MBL)**

Sharma, D. (Personal Interview, February 2, 2007) states that a special Credit Committee exists for formulating credit policies in the bank. Besides this, committee also takes the credit decisions beyond the limit of chief Executive officer. The committee includes Chief Executive Officer, 3 Board of Directors, Assistant General Manager and Credit Manager. The main responsibility of this committee is to take decision beyond the jurisdiction of the management of MBL, to provide support to the board of directors.

In MBL, all the credit decision is governed by the Credit Policies Guidelines. Under the management level, all the credit decisions are taken by the credit manager but for the credit decision beyond his jurisdiction; the assistant general manager and CEO take the decision.

For the legal issue while granting credit, the legal department is responsible for all the documentations part. There is also a credit administration department, which handles all the administrative aspect of credit such as monitoring credit, recovery etc. Regarding Document Risks, document risk refers to the risk, which arises from the acceptance of false/mistake document by the bank. If a bank provides loan against the false documents, the bank will have to suffer loss in case of default by the client. Similarly, while purchasing the cheques and bills, if the document is not genuine, this leads a bank to suffer a huge loss. This document risk is associated with human error of banks' staff as well as the intention of the client. When interviewed to key employees of both banks, it is found that banks have taken a high precaution for the document risk. There is no such a case that banks have suffered a huge loss due to fraud or mistaken documents. To minimize

the risk, both the banks have provided hierarchy wise authority to take Credit Decision and set up legal department and credit administration department for proper documentation.

#### **4.2.8. Common Sources of Major Credit Problems**

Major banking problems have been either explicitly or indirectly caused by weaknesses in credit risk management. According to the experience of key respondents of KBL, MBL as well as Nepal Rastra Bank, certain key problems tend to recur in the banking industry that results in the high credit losses. Severe credit losses in a banking system usually reflect simultaneous problems in several areas, such as concentrations, failures of due diligence and inadequate monitoring. According to the key respondents of KBL, MBL and NRB, some of the most common problems are related to the broad areas of concentrations, credit processing, and market- and liquidity-sensitive credit exposures.

##### **4.2.8.1. Concentration**

Concentrations are the one of the most important cause of major credit problems. Credit concentrations are viewed as any exposure where the potential losses are large relative to the bank's capital, total assets, and overall risk level. Relatively large losses may reflect not only large exposures, but also the potential for unusually high percentage losses.

Credit concentrations can further be grouped roughly into two categories as follows:

1. Conventional credit concentrations include concentrations of credits to single borrowers or counterparties, a group of connected counterparties, and sectors or industries, such as commercial real estate, oil and gas etc.
2. Concentrations based on common or correlated risk factors reflect more situation-specific factors, and often cannot be covered through analysis.

Disturbances in economic sector because of strikes, curfew, and blockade have also slowed down the business of the banks as well as the borrowers. Similarly, a highly leveraged borrower will produce larger credit losses for a given severe price or economic shock than a less leveraged borrower whose capital can absorb a significant portion of any loss.

#### **4.2.8.2. Credit Process Issues**

1. Many credit problems reveal basic weaknesses in the credit granting and monitoring processes. While shortcomings in underwriting and management of market-related credit exposures represent important sources of losses at banks, many credit problems would have been avoided or mitigated by a strong internal credit process.
2. According to the key respondents, carrying out a thorough credit assessment (or basic due diligence) is a substantial challenge for all banks. For traditional bank lending, competitive pressures and the growth of loan syndication techniques create time constraints that interfere with basic due diligence.
3. The absence of testing and validation of new lending techniques is another important problem. Adoption of untested lending techniques in new or innovative areas of the market, especially techniques that dispense with sound principles of due diligence or traditional benchmarks for leverage, have led to serious problems at banks. Sound practice calls for the application of basic principles to new types of credit activity. Any new technique involves uncertainty about its effectiveness. That uncertainty should be reflected in somewhat greater conservatism and corroborating indicators of credit quality.
4. Some credit problems arise from subjective decision-making by senior management of the bank. This includes extending credits to companies

they own or with which they are affiliated, to personal friends, to persons with a reputation for financial acumen or to meet a personal agenda, such as cultivating special relationships with celebrities.

5. Lack of effective credit review process is also one of the major sources of credit risk in the commercial banks. Credit review at banks usually is a department made up of analysts, independent of the lending officers, who make an independent assessment of the quality of a credit or a credit relationship based on documentation such as financial statements, credit analysis provided by the account officer and collateral appraisals. The purpose of credit review is to provide appropriate checks and balances to ensure that credits are made in accordance with bank policy and to provide an independent judgment of asset quality, uninfluenced by relationships with the borrower. So, the lack of the effective credit review is also the key factors for higher credit risk.
6. A common and major source of the credit risk is the failure to monitor borrowers or collateral values. The negligence by the banks to obtain periodic financial information from borrowers or real estate appraisals in order to evaluate the quality of loans on their books and the adequacy of collateral has resulted banks failure to recognize early signs that asset quality was deteriorating and missed opportunities to work with borrowers to stem their financial deterioration and to protect the bank's position. This lack of monitoring led to a costly process by senior management to determine the dimension and severity of the problem loans and resulted in large losses.
7. In some cases, the failure to perform adequate due diligence and financial analysis and to monitor the borrower can result in a breakdown of controls to detect credit-related fraud. For example, banks experiencing

fraud-related losses have neglected to inspect collateral, such as goods in a warehouse or on a showroom floor, have not authenticated or valued financial assets presented as collateral, or have not required audited financial statements and carefully analyzed them.

8. A related problem is that many banks do not take sufficient account of business cycle effects in lending. As income prospects and asset values rise in the ascending portion of the business cycle, credit analysis may incorporate overly optimistic assumptions. Industries such as retailing, commercial real estate and real estate investment trusts, utilities, and consumer lending often experience strong cyclical effects. Sometimes the cycle is less related to general business conditions than the product cycle in a relatively new, rapidly growing sector, such as health care and telecommunications. Effective stress testing which takes account of business or product cycle effects is one approach to incorporating into credit decisions a fuller understanding of a borrower's credit risk.

#### **4.2.9. Banking Risk and Capital Adequacy Measures**

Capital Adequacy Ratio (CAR) is one of the major tools of minimizing the overall risk of a bank including the credit risk through adequate arrangement of capital. In other words, it is the cushion to cover the loss suffered by the bank. The higher the CAR of a bank, more safe the bank will be. It is because in case of losses, the capital will be used to cover those losses. So it is the great safeguard measure for the bank, depositors and investors. For the management of default risk of bank, NRB has prescribed capital adequacy ratio for primary capital and total capital fund. All the commercial banks need to maintain the required ratio. If any bank fails to maintain the required ratio, bank is not allowed to increase its assets, disburse loans, collect deposits and distribute dividend.

#### **4.2.9.1. Core Capital to Total Risk Weighted Asset (RWA)**

Core Capital to Total Risk Weighted Asset (RWA) ratio measures the proportion of funding of total Risk Weighted Asset from the core capital. Risk weighted asset refers to all the on balance sheet and off balance sheet asset which has been weighted by some portion of risk. The assets have been weighted on the basis of their risk level (e.g. 0 % for cash & investment on government bills to 100% on loans and advances). The total loans, advances and overdrafts covers more than 80% in average of the total risk weighted assets in case of KBL; and in MBL, more than 65% of the total risk weighted assets is covered by the total loans, advances and overdrafts. Core Capital, on the other hand, refers to the shareholders equity, which includes Share Capital, Retained Earning, General Reserve, Net profit & Non redeemable Preference Share). The higher ratio does a bank maintain, the better position a bank has and vice versa. Higher ratio also means more use of equity while financing the asset, which means lower use of debt (i.e. borrowings and deposit). As we know the lower the use of the debt, the less risk a bank has and vice versa; the higher ratio is always preferred.

**Table 4.12**  
**Core Capital to Total Risk Weighted Asset**

**(Rs in million)**

Fiscal Year	Statutory Ratio (%)	KBL				MBL			
		Core Capital	Total RWA	Core Capital/RWA (%)	Excess/Shortfall	Core Capital	Total RWA	Core Capital/RWA	Excess/Shortfall
2001/02	4.50	347.29	1,356.83	25.60	21.10	78.43	980.98	8.00	3.50
2002/03	5.00	359.55	2,528.77	14.22	9.22	501.71	2,092.01	23.98	18.98
2003/04	5.50	529.68	4,449.41	11.90	6.40	552.87	3,250.66	17.01	11.51
2004/05	5.50	641.72	6,291.84	10.20	4.70	637.74	6,063.13	10.52	5.02
2005/06	5.50	858.52	7,625.05	11.26	5.76	911.54	7,631.99	11.94	6.44
2006/07	5.50	1019	9,959.91	10.24	4.74	982.57	9,200.66	10.68	5.18
2007/08	5.50	1359	13,070.38	10.40	4.90	1,142.97	10,417.06	10.97	5.47
		Average		13.40	8.12	Average		13.30	8.01
		S.D		5.15		S.D		5.04	

**Source: Annual Reports**

Table 4.12 exhibits the ratio of core capital to total risk-weighted asset of KBL and MBL for 7 years. Both banks have maintained the ratio more than that of statutory requirement prescribed by NRB. Both banks have maintained higher ratio in earlier years which is also because of bank's lower risk weighted asset. The average core capital to RWA ratio of KBL and MBL is 13.40 % and 13.30 % respectively. This indicates that KBL has employed higher capital than MBL to finance the risk-weighted asset. KBL has higher amount of cushion against the losses. However, there is very slight difference between the ratio of core capital to RWA of the two banks. The average excess ratio

than the statutory requirement of both KBL and MBL is 8.12% and 8.01% respectively. This ratio indicates that KBL can slightly increase its risk-weighted asset more than MBL. The higher capital ratio does a bank maintain, the higher amount of asset can be increased by the bank and vice versa, which also means higher income and profit. This above figures shows almost similar position of KBL and MBL in terms of the ratio of Core Capital to Total RWA but KBL is in slightly less risky position than MBL. The standard deviation of the ratio of Core Capital to RWA of KBL and MBL is 5.15 and 5.04 respectively. These figures indicate that the actual ratios of MBL are slightly more fluctuating from the average than KBL which shows inconsistency.

#### 4.2.9.2. Supplementary Capital to Total Risk Weighted Asset

This ratio measures how much supplementary Capital does a bank have to finance the total RWA. Supplementary Capital refers to the reserve maintained by the bank for specific purpose such as loan loss, foreign exchange loss etc. The higher ratio does a bank maintain, the higher will be the capital cushion for a bank to cover the risk and vice versa.

**Table 4.13**  
**Supplementary Capital to Total Risk Weighted Asset**

Fiscal Year	KBL			MBL		
	Supplementary Capital	RWA	Supplementary Capital/ RWA	Supplementary Capital	RWA	Supplementary Capital/ RWA
2001/02	16.18	1,356.83	1.19	26.35	980.98	2.69
2002/03	31.36	2,528.77	1.24	16.16	2,092.01	0.77
2003/04	40.47	4,449.41	0.91	26.51	3,250.66	0.82
2004/05	63.81	6,291.84	1.01	51.1	6,063.13	0.84
2005/06	82.46	7625.05	1.08	64.52	7,631.99	0.85
2006/07	95.31	9,959.91	0.96	119.14	9,200.66	1.29
2007/08	523.89	13,070.38	4.01	136.82	10,417.06	1.31
	Mean		1.49	Mean		1.22
	S.D		1.04	S.D		0.63

**Source: Annual Reports**

Table 4.13 exhibits Supplementary Capital to Total Risk Weighted Asset ratio of KBL and MBL for 7 years. Both banks have very low percentage of supplementary capital to finance the total RWA. The average ratio of KBL and MBL for 5 years is 1.49 % and 1.22 % respectively. This indicates that MBL has higher amount of supplementary capital than KBL. The higher amount of supplementary capital indicates that MBL has maintained higher amount of reserve to combat the specific risk such as loan loss, asset revaluation loss and foreign exchange loss etc.

The standard deviation of the ratio of KBL and MBL is 1.04% and 0.63 % respectively. This indicates that the ratio of MBL fluctuates more than that of KBL, which depicts the less consistency in part of MBL.

#### 4.2.9.3. Capital Fund to Total Risk Weighted Asset (RWA)

Capital fund to total RWA ratio measures how much RWA is financed from the Capital Fund. Capital Fund includes Core Capital plus Supplementary Capital. The higher the ratio does a bank have, the better is the bank's financial position and the bank will be in less risky position and can increase its asset, which ultimately will increase bank's overall profit.

**Table 4.14**  
**Capital Fund to Risk Weighted Asset**

(Rs. In million)

Fiscal Year	Statutory Ratio (%)	KBL				MBL			
		Total Capital Fund	RWA	Capital Fund/RWA	Excess/Shortfall	Total Capital Fund	RWA	Capital Fund/RWA	Excess/Shortfall
2001/02	9	363.47	1357	26.79	17.79	104.78	981	10.68	1.68
2002/03	10	390.91	2529	15.46	5.46	517.87	2092	24.75	14.75
2003/04	11	570.15	4449	12.81	1.81	579.38	3251	17.82	6.82
2004/05	11	705.53	6292	11.21	0.21	688.84	6063	11.36	0.36
2005/06	11	940.98	7625.05	12.34	1.34	976.06	7,631.99	12.79	1.79
2006/07	11	1,115.21	9,959.91	11.20	0.20	1,101.72	9,200.66	11.97	0.97
2007/08	11	1,882.93	13,070.38	14.41	3.41	1,279.79	10,417.06	12.29	1.29
		Mean		14.89	4.32	Mean		14.52	3.95
		S.D		5.07		S.D		4.7	

**Source: Annual Reports**

Table 4.14 exhibits Total Capital fund to Risk Weighted Asset (RWA) of KBL and MBL for 7 years. Both banks have capital adequacy ratio higher than the statutory requirement in all 7 years. The average ratio of KBL and MBL is 14.89% and 14.52 % respectively. This shows that KBL has slightly higher Capital Adequacy Ratio than MBL, which signals that KBL is in a bit better position than MBL. The ratio of KBL was in decreasing trend till 2004/05 but in the F/Y 2007/08 it has increased to 14.41%. As the bank started to grow the capital will be more utilized on the asset. In case of MBL, the ratio is more fluctuating. Similarly, the average excess of ratio than statutory requirement of KBL and MBL is 4.32% and 3.95% respectively. This figure indicates that KBL has higher excess ratio than MBL. The standard deviation of the ratio of Total Capital fund to RWA of KBL and MBL is 5.07 and 4.7 respectively which indicates that the ratios of KBL fluctuate more from the average than that of MBL.

#### **4.2.10 Analysis of Primary Data**

Under the analysis of primary data, a questionnaire and personal interview has been conducted to the staffs of the concerned departments of both KBL and MBL. The questionnaires have been filled by 10 employees each from both KBL and MBL. The responses of the questionnaire have been analyzed as below:

1. Proportion of credit risk: The 9 staffs of KBL have responded that the proportion of credit risk is more than 60 % of total banking risk. This means that in KBL, the credit risk has the highest proportion on total risk. In MBL, 8 Staffs have agreed that the proportion of credit risk is more than 60 % of total banking risk. From this response, it is clear that in both commercial banks, the proportion of credit risk is very high.
2. Credit Risk Rating System: All the 20 staffs have answered that both banks have risk rating system for the credit clients. Ranking of different characteristics (5Cs) while granting credit has been made on the basis of majority ranks for each attribute given by the respondent.

**Table 4.15**

**Ranking of different characteristic while lending**

<b>Attributes</b>	<b>KBL</b>	<b>MBL</b>
<b>Character</b>	<b>1</b>	<b>1</b>
<b>Collateral</b>	<b>2</b>	<b>4</b>
<b>Capital</b>	<b>5</b>	<b>3</b>
<b>Condition</b>	<b>4</b>	<b>5</b>
<b>Capacity</b>	<b>3</b>	<b>2</b>

Table 4.15 clearly shows that KBL prefers character and collateral as the most important attributes while extending the credit where as the MBL gives more importance to capacity of credit client than the collateral.

Credit Concentration / Single Sector Lending: The 8 staffs of KBL has responded that KBL should lend 0-10% of total loan on single sector, where as 2 have responded that it should lend 10-20 % of total loan in single sector. Likewise, out of total 10 staffs of MBL, 6 have agreed that the bank should lend 0-10 % of total loan, where as 1 has agreed that the bank should lend 20- 30 % of total loan and rest have agreed on 10-20% of total loan.

Risk Attributes: For the credit risk analysis of the corporate borrowing clients, all the 20 respondents agreed that following attributes must be taken into considerations:

- a) Financial risk, b) Market risk, c) Management risk, d) Labor risk,
- e) Government/policy risk, f) Succession risk, g) Liquidity Risk, h) Default risk, i) Pricing risk, j) Security Risk, k) Technological Risk.

Various internal and external environmental factors impacts the overall business of the corporate credit clients. Therefore, the strengths, weaknesses,

opportunities and threats associated with the business should be analyzed by considering the above Risk Attributes.

NPL: When asked about to what extent today’s banking industry is effected by problem of NPL, 90% of the respondents were of the view that it is severely affected. Whereas 10 % were of the view that today’s banking industry is moderately affected by the problem of NPL

Preference on Sector: Regarding ranking of preference on sector wise loan, following responses have been made by the staffs of KBL and MBL.

**Table 4.16**  
**Ranking of Sector for lending**

<b>Sector</b>	<b>KBL</b>	<b>MBL</b>
<b>Agriculture</b>	<b>6</b>	<b>5</b>
<b>Mines and Minerals</b>	<b>5</b>	<b>4</b>
<b>Real Estate</b>	<b>3</b>	<b>2</b>
<b>Manufacturing</b>	<b>1</b>	<b>1</b>
<b>Consumer loans</b>	<b>4</b>	<b>3</b>
<b>Service Industry</b>	<b>2</b>	<b>3</b>

Table 4.16 exhibits that KBL prefers Manufacturing, Service Industry, Real Estate, Consumer loans, mine and minerals and agriculture in first, second, third, fourth, fifth, sixth respectively. In contrast, MBL prefers real estate in second priority, where as KBL takes it into third priority. The MBL takes both the consumer loans and service industry in third priority. Both KBL and MBL has similar ranking for manufacturing and agriculture. Both the bank would like to invest more on the manufacturing sector and least to the agriculture sector.

Importance of NRB Directives: Regarding an importance of the directives related to loan classification and provisioning, 100 % of the respondents agreed that the directives are very important. Regarding an impact of new directives on provision for loan loss of commercial bank, 100 % of the respondents are of the view that newly issued directives regarding loan classification and provisioning will increase the provision. .

#### 4.2.10.1. Test of Hypotheses

##### Hypothesis- I

In 20 random samples of respondents, it contains the following ranking distribution. The test is to draw the ranking of sector wise lending by the staffs of both banks.

**Table 4.17**  
**Hypothesis test regarding the ranking of sector of lending**

Bank	Agriculture	Mines and Minerals	Real Estate	Manufacturing	Consumer loans	Service Industry	Total
<b>KBL</b>	<b>31</b>	<b>39</b>	<b>58</b>	<b>70</b>	<b>55</b>	<b>63</b>	<b>316</b>
<b>MBL</b>	<b>32</b>	<b>41</b>	<b>58</b>	<b>66</b>	<b>55</b>	<b>55</b>	<b>307</b>
<b>Total</b>	<b>63</b>	<b>80</b>	<b>116</b>	<b>136</b>	<b>110</b>	<b>118</b>	<b>623</b>

**Source: Field study (See APPENDIX 8 for detail)**

Null Hypothesis (Ho): There is no significant difference between observed and expected frequencies regarding the choice of sector of lending

Alternative Hypothesis (H1): There is significant difference between observed and expected frequencies regarding the choice of sector of lending.

Fixing the level of significance at 5 %

Calculation of expected frequencies (E):

**Expected frequency of R1C1 = Row Total x Column Total**

$$\text{Grand Total} = \frac{316 \times 63}{623} = 31.96$$

Similarly,

<b>R1C1 = 31.96</b>	<b>R2C1 = 31.04</b>
<b>R1C2 = 40.58</b>	<b>R2C2 = 39.42</b>
<b>R1C3 = 58.84</b>	<b>R2C3 = 57.16</b>
<b>R1C4 = 68.98</b>	<b>R2C4 = 67.02</b>
<b>R1C5 = 55.79</b>	<b>R2C5 = 54.21</b>
<b>R1C6 = 59.85</b>	<b>R2C6 = 58.15</b>

**Test of Chi- Square:**

Observed Frequencies (O)	Expected Frequencies (E)	(O-E)	(O- E) <sup>2</sup> /E
31	31.96	-0.96	0.03
39	40.58	-1.58	0.06
58	58.84	-0.84	0.01
70	68.98	1.02	0.02
55	55.79	-0.79	0.01
63	59.85	3.15	0.17
32	31.04	0.96	0.03
41	39.42	1.58	0.06
58	57.16	0.84	0.01
66	67.02	-1.02	0.02
55	54.21	0.79	0.01
55	58.15	-3.15	0.17
<b>Total</b>			<b>0.60</b>

**Test Statistics:**

$$\chi^2 - \text{Calculated} = \frac{\sum (O-E)^2}{E} = 0.60$$

**Degree of Freedom:**

$$\text{d.f.} = (R-1) (C-1)$$

$$= (2-1) (6-1)$$

$$= 5$$

$\chi^2$ - tabulated at 5 % level of significance for 5 d.f. is 11.07

Decision:- Since tabulated value of  $\chi^2$  is greater than calculated value of  $\chi^2$  ( i.e.  $11.07 > 0.6$ ), null hypothesis is accepted which means that there is no significant difference between observed and expected ranking of lending on different sectors.

### **Hypothesis- II**

In 20 random samples of respondents, it contains the following ranking. The test is to identify the ranking of various factors to be considered while lending.

**Table 4.18**  
**The ranking of various factors to be considered,while lending**

<b>Rank</b>	<b>Character</b>	<b>Collateral</b>	<b>Capital</b>	<b>Condition</b>	<b>Capacity</b>	<b>Total</b>
<b>KBL</b>	<b>63</b>	<b>58</b>	<b>45</b>	<b>48</b>	<b>55</b>	<b>269</b>
<b>MBL</b>	<b>64</b>	<b>45</b>	<b>54</b>	<b>40</b>	<b>60</b>	<b>263</b>
<b>Total</b>	<b>127</b>	<b>103</b>	<b>99</b>	<b>88</b>	<b>115</b>	<b>532</b>

**Source: Field Study ( See APPENDIX 8 for detail)**

Null Hypothesis ( $H_0$ ): There is no significant difference between observed and expected frequencies regarding the ranking of various factors

Alternative Hypothesis ( $H_1$ ): There is significant difference between observed and expected frequencies regarding the ranking of various factors

Fixing the level of significance at 5 %, calculation of expected frequencies (E):

**Expected frequency of R1C1 = Row Total x Column total**

$$\text{Grand Total}$$

$$= \frac{127 \times 269}{532} = 64.22$$

Similarly,

$$R1C2 = 52.08$$

$$R2C1 = 62.78$$

$$R1C3 = 50.06$$

$$R2C2 = 50.92$$

$$R1C4 = 44.50$$

$$R2C3 = 48.94$$

$$R1C5 = 58.15$$

$$R2C4 = 43.5$$

$$R2C4 = 56.85$$

Test of Chi- Square:

Observed Frequencies (O)	Expected Frequencies (E)	(O-E)	(O-E) <sup>2</sup> /E
63	64.22	-1.22	0.02
58	52.08	5.92	0.67
45	50.06	-5.06	0.51
48	44.5	3.5	0.28
55	58.15	-3.15	0.17
64	62.78	1.22	0.02
45	50.92	-5.92	0.69
54	48.94	5.06	0.52
40	43.5	-3.5	0.28
60	56.85	3.15	0.17
<b>Total</b>			<b>3.34</b>

Test Statistics:

$$\chi^2 - \text{Calculated} = \frac{\sum(O-E)^2}{E} = 3.34$$

Degree of Freedom:

$$\begin{aligned} \text{d.f.} &= (R-1) (C-1) \\ &= (2-1) (5-1) \\ \text{d.f.} &= 4 \end{aligned}$$

$\chi^2$ - tabulated at 5 % level of significance for 4 d.f. is 9.49

Decision: - Since tabulated value of  $\chi^2$  is greater than calculated value of  $\chi^2$  (i.e.  $9.48 > 3.34$ ), null hypothesis is accepted which means that there is no significant difference between observed and expected ranking of different factors to be considered while lending.

### **4.3 Major Findings of the Study**

From the above analyses of credit risks, following major findings have been obtained:

1. The major problems in credit risk are related to the broad areas of concentrations, credit processing, and market- and liquidity-sensitive credit exposures. From the analysis of primary data, it is found that the majority of the respondents of both banks have favored with the bank's single sector, which is upto 10 % of total loan. However, the sector wise lending analysis portrays that KBL and MBL have extended up to 19.88 % and 30.12% of loan in a single sector respectively in FY 2005/06. Similarly, the exposure on the single sector of KBL and MBL exceeds 10 % of total loan in 3 and 5 sectors respectively. The single sector loan to core capital shows that the ratio crossed 100% in 2 sectors of both KBL and MBL. In regard to concentration risk, KBL has more risk in manufacturing and others sector where as MBL has more risk on manufacturing and Whole seller and sectors as the single sector credit to core capital ratio in these sectors is more than 100 %. MBL has very high loan concentration on manufacturing sector of 199.35% of the core capital. From the personal interview of the key respondents it was found that both banks have

been extending credit in those highly concentrated sectors after getting approval from the board of director. This clarifies that concentration risk is the main source of credit risk for KBL and MBL.

2. Similarly, lack of systematic and thorough credit processing is also the major source of credit risk in these banks. The problems in credit processing include lack of thorough credit assessment, absence of testing and validation of new lending techniques, subjective decision-making by senior management, lack of effective credit review process, failure to monitor borrowers or collateral values, and failure of banks to take sufficient account of business cycle effects etc. Likewise the market-sensitive and Liquidity-sensitive exposures also increase the credit risk of these banks. Similarly, it is found that both banks have their own rating system of the credit client and the sectors. Both banks have ranked 1<sup>st</sup> to the manufacturing sector where as the Agriculture sector has been ranked the last on the basis of priority. KBL has chosen others sector and real estate business in 2<sup>nd</sup> and 3<sup>rd</sup> position respectively, where as the MBL has just opposite preference in these sectors.
3. Likewise, KBL has ranked Character, Collateral and Capacity of borrower first, second and third criterion for granting credit where as MBL ranked Character, Capacity and Capital first, second and third priority respectively. The hypothesis test on the preference of the bank's staff also proves that there is no significant difference between observed and expected frequency of ranking.
4. From the analysis of lending against various collaterals, it has been found that both the banks have lent highest amount of loan against the movable/ immovable property. The average lending over 5 years period of KBL and MBL against movable/ immovable property is Rs. 2,987 million and 2,673 million respectively. Similarly, the lending against others securities (i.e. other than prescribed by NRB) is second position for both banks, whereas the lending

against guarantee of local banks and finance companies is in third position. However, MBL has also granted loan without any collateral. The average amount of loan without collateral is Rs. 3 million annually, which is in the 6<sup>th</sup> place on ranking. On the contrary, KBL has not granted any loan without backing any collateral.

#### **4.3.1. The key performance indicators**

The key performance indicators of the two banks in regard to credit management are found as follows,

1. The average loans and advances to total risk weighted assets of KBL and MBL during the study period are 86.57 % and 76.83 % respectively. Over this five years period, the proportion of loan on total risk weighted assets of MBL was in increasing trend till the FY 2004/05, but it reduced to 80.54% in the FY 2005/06, where as the proportion of loan on total risk weighted asset of KBL is more fluctuating. From this, it can be said that KBL has been frequently adjusting the proportion of loan and MBL also has started to adjust the proportion of loan. Lower average loan and advances to total risk weighted assets of MBL than that of KBL ( i.e 76.83% < 86.57%) suggests that MBL management is more risk averse than KBL
2. Analysis of non- performing loans to total loans revealed that average NPL to Total loans and advances of KBL and MBL is 1.12 % and 2.84 % respectively. This means that average performing loan of KBL and MBL is 98.88 % and 97.16 % respectively. Hence MBL has higher percentage of non-performing loan than KBL, which means that MBL has more credit risk than KBL. With higher amount of non- performing loan of MBL, the impact of it will be on the net profit of the bank. However, in recent years, MBL has managed to decrease

the non-performing loan below 1 %, which is due to more stringent credit practices and recovery system.

3. Average ratio of Loan Loss Provision to Non-performing Loan of KBL and MBL was found to be 142.70 % and 227.31 % respectively. Hence MBL has higher ratio than KBL, which depicts that the bank has higher provision against the non- performing loan. This also indicates that in case of default, the bank can cover the loss amount without any problem, as there is sufficient amount of reserve for non-performing loan. However, on the other side, the comparative low ratio of KBL also suggests that out of non-performing loan, the proportion of bad loans is lower than that of MBL. The higher amount of bad loan does a bank have, the higher will be the provision.
4. The average Loan loss Provision to total loan ratio of KBL and MBL is 1.48 % and 2.06 % respectively. The higher percent of LLP of MBL indicates that the bank has higher amount of non-performing loan than KBL. Because of the higher amount of non-performing loan of MBL in total, the provisioning amount is in higher side. This figure indicates that KBL is in better credit position than MBL.
5. Analyzing the organizational structure for the credit risk management, it has been found that KBL has more rigorous organization structure for credit risk management than MBL. In KBL, Asset Liabilities Management Committee (ALCO), mainly concerned with all types of risks management including credit risk. In MBL, Credit Committee, which includes the member of both board of directors and management, is the main body for managing credit risk. Similarly, the establishment of Credit Administration, Control & Recovery Department, Risk Assessment department in KBL portrays that KBL has been giving more importance to the control and recovery aspects of the loan as well as credit risk rating of borrowers. In MBL there is no separate department for

assessing the risk as well as recovery of loan. However, quality of the credit management of MBL is increasing in recent years as the ratio of NPL to total has been decreased to 0.28 % in fiscal year 2005/06 from the previous year's ratio of 0.039 %.

6. From the risk weighted lending analysis, it has been found that KBL also has been lending against the risk-free and moderate-level risk category even though the proportion to them in total lending is very small. The major portion of the total lending of both banks are against the collateral of High-level risk category. But in comparison, the proportion of lending of MBL against Risk-free and moderate-level risk collateral is very small than that of KBL. So, MBL is exposed to higher credit risk.

#### **4.3.2 Banking Risk and Capital Adequacy Measures**

Analysis of capital adequacy measures of the both banks reveals following findings:

The average Core Capital to Total Risk Weighted Asset of KBL and MBL is 14.64% and 14.29 % respectively. Both the banks have higher percentage of core capital than the statutory requirement made by NRB. The average ratio indicates that KBL has higher proportion of Core Capital to finance the risk-weighted asset than MBL.

The average Capital Fund to Total Risk Weighted Asset of KBL and MBL is 15.72 % and 15.48 % respectively. Both the banks have higher capital adequacy ratio than NRB statutory requirement. The average ratio indicates that KBL has higher proportion of Capital Fund to finance the risk-weighted asset than MBL. However, in fiscal year 2004/05, the CAR of both KBL and MBL is just 0.21% and 0.36 % above than NRB statutory requirement. But in FY 2005/06, both the banks have increased its capital in greater proportion than the RWA.

In both KBL and MBL, the portion of supplementary capital is very low. The average supplementary capital to total RWA is 1.09 % and 1.19 % in KBL and MBL respectively. This ratio indicates that both the banks have been fulfilling the Capital Adequacy Requirement more by core capital than supplementary capital.

### **4.3.3. Credit Risk Management Procedure**

From the analysis of interview of key respondents of both KBL and MBL and the facts of annual reports, following credit risk management procedures are in use in these commercial banks:

#### **1. Standard & Reports**

In both the banks, the risk management techniques involve two different sets of conceptual techniques (i.e. setting standard and financial reporting). Both the banks apply consistent evaluation and rating scheme to all its investment opportunities. Most of the investment decisions are guided by the standard set by top-level management and NRB directive.

In regard to credit risk management, a substantial degree of standardization of process and documentation has been set in both the banks to make credit decision in a consistent manner and for the resultant aggregate reporting of credit risk exposure to be meaningful. Both the banks have their own standard for rating both to borrowers and credit portfolio that presents meaningful information on overall quality of the credit portfolio. Interview with the respondents have revealed that both the banks have a dual system for credit rating, where both the borrowers and credit facilities are rated. While rating borrowers, the general worthiness of borrower is rated, which is the most important aspect in both banks to extend the credit. In case of the corporate borrowing clients, analysis of the various aspects of the risk like financial risk, management risk, market risk, succession risk, security

risk etc are done. Similarly, the credit facilities rating include rating of collateral and covenants. In regard to collateral, both banks have granted highest loan against the movable and non-movable property. However, MBL has also granted loan without backing any collateral. This indicates that MBL rely more on borrowers' quality than credit quality where as KBL gives equal importance to both borrowers quality and credit quality.

The basis standard and guidelines for credit decision in both banks is Credit Policy Guidelines (CPG). CPG clearly set standard of various documents required from the customer before granting credit. These documents include tax related documents, financial document, asset valuation document etc.

Further, both the banks have been weighting the pros and cons of specialization and concentration by industry group and establish subjective limit for their exposure. This is carried out with both limits and guidelines set by senior management.

## **2. Position Limit**

For the proper management of credit risk both the banks have set different organizational position to take decision. Similarly the limit of jurisdiction has also been provided in consistent with position. In KBL, the main committee for overall risk management is Asset Liabilities Management Committee (ALCO). It is concerned with asset liabilities management, analysis of various risks such as credit, interest rate risk, liquidity risk, foreign exchange risk and operation risk. ALCO includes the member of top-level management. In MBL, the decision about credit risk is taken by Credit Committee, which includes the member of both board of director and management. For the overall risk management, top-level management and board of director make overall decision.

### **3. Monitoring and Control**

Credit administration & Control department is mainly concerned with monitoring the credit facilities and borrowers. It continuously reassesses the borrowers' financial condition, loan repayment and health of the risk assets. It also frequently reevaluate the collateral as well as its marketability to ensure that collateral is enough to cover the loss if any. More over in KBL, there exist a recovery department under the Risk Assessment Division, which is mainly concerned with prompt recovery of loan. However, in MBL credit department in cooperation with credit administration department performs the function of recovery. Similarly, there exists a risk assessment department also under Risk Assessment Division in KBL that analyze the risk of borrowers before granting credit to the clients. This department also makes portfolio analysis of different loans (such as overdraft, term loan, retail loan etc) and sectors. However in MBL, credit department itself performs all the risk assessment function.

From the above analysis, it is found that both the banks have common procedure of risk management. However, in regard to organization structure, KBL has more defined and structured department than MBL in regard to managing credit risk. It has been found that MBL has traditional types of organizational structure for credit risk management where as the recent organization restructuring of KBL has made organization more stringent for credit risk management.

## **CHAPTER V**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 Summary**

Economic development is not possible without the proper development of banking sector in a country, as banks are the real facilitator for mobilizing the resources. Banks are the institutions, which collect the scattered small savings from the public and invest them into productive sector that ultimately contributes to economic development of a country. Besides providing the services for economic development, they are established to earn profit. In the context of current competitive scenario, banks need to face challenges from all around. One of the major challenges for Nepalese commercial banks is to properly manage the risk, especially the credit risk as it covers about 60% of the total risk that a bank face. Considering the importance of credit risk management in commercial banks, this research aimed at studying the credit risk management system of selected commercial banks. For this purpose, descriptive cum analytical research design was adopted. Out of total population of 18 commercial banks (till Mid July 2006), 2 banks were taken as sample using judgmental sampling method. KBL and MBL have been taken for comparative study because of their similarities in terms of business size, date of establishment, capital size etc. Both primary and secondary data have been used in this study. Primary data has been collected mainly from personal interview with key position staff, telephone interview & structured questionnaire. Annual reports and other publication of these banks and NRB directives and reports are the bases of secondary data. The data collection from various sources are recorded systematically & presented. Appropriate statistical and financial tools have been applied to analyze the data. The data of five

consecutive years of the two banks have been analyzed to meet the objective of the study.

The major risk in KBL and MBL is associated with credit decision as the proportion of credit risk on total risk is high. Based on the response of structured questionnaire, it has been found that the proportion of credit risk on total risk is more than 60 %. The average loans and advances to total risk weighted assets ratio of KBL and MBL is 86.57 % and 76.83 % respectively. This means that loan and advances hold major portion in total risk weighted assets.

The credit risk of these banks mainly arises due to non-payment of loan by borrowers, poor appraisal of borrowers' financial condition and substandard collateral. Poor tracking of borrowers and improper diversification of lending across industries also result in higher credit risk in commercial banks. The major problems in credit risk can be categorized into three areas of concentrations; credit processing, and market- and liquidity-sensitive credit exposures. The main indicators of loan default (i.e. non performing loan (NPL)) indicate that average NPL of MBL is more than that of KBL (i.e.  $2.84 > 1.12$ ). However in recent years (i.e. 2004/05 & 2005/06), MBL has been able to reduce the NPL significantly down to 0.28 %. Against the NPL, MBL has provisioned more reserve than KBL. Collateral is also one of the important factors while extending credit. When the borrowers default, collateral is the only means to cover such losses. The credit practice of MBL shows that MBL is also granting loan without collateral, which is the poor sign of credit practice. 100 % of provision is to be made for this sort of loan, which reduces the bank's profit, and also bank doesn't have any asset to claim on in case of default. This sort of practice is not found in case of KBL.

Similarly, credit concentration on single sector of KBL and MBL shows that both the banks have very high amount of concentration in single sector. In production

sector, KBL and MBL has 19.88 % and 30.12% respectively of total loan exposure, which is the sign of putting all the eggs in one basket. Improper portfolio management also remains one of the significant problems in credit management of these banks.

Both the banks have Credit Policies Guidelines (CPG) and well-defined organizational structure for proper management of credit risk. The organizational structure of KBL is found more stringent & advanced than that of MBL. In KBL, Asset Liabilities Management Committee (ALCO) is concerned with all types of risks management including credit risk. There is also an Executive Sub Committee to review credit facilities in timely and accurate manner. In MBL, Credit Committee, which includes the members of board of directors and management, is the main body for managing credit risk. Similarly, the establishment of Recovery Department and Risk Approval Department under Risk Assessment Division in KBL portrays that KBL has been giving more importance to the recovery aspects of the loan as well as credit risk rating of borrowers. However, in MBL there is no separate department for assessing the credit risk and loan recovery.

In commercial banks, minimizing the credit risk is the major challenge. For combating the credit risk, both the banks have taken several measures. One of the major measures is capital adequacy ratio. The capital adequacy ratio depicts that both KBL and MBL has higher CAR than statutory requirement. However in recent years, the CAR is in decreasing trend. Similarly, in total capital fund, the portion of supplementary capital in both banks is low. Therefore these banks are fulfilling the capital fund requirement mainly from the core capital. In risk-weighted asset, both the banks have higher portion of on-balance sheet assets than off-balance sheet assets. The lower amount of off-balance sheet assets means both these banks need to increase the off-balance sheet items, which helps to diversify bank's source of income.

The credit risk management procedure in these banks includes four basic procedures. The major outlines for credit risk management include setting standards for all the transactions such as lending, borrowing etc, and preparing financial reports. A substantial degree of standardization of process and documentation has been set in both the banks to make decision in a consistent manner and for the resultant aggregate reporting of credit risk exposure to be meaningful. Similarly, the position for managing the credit risk as well as jurisdiction limit is also set. Investment policy is prepared in consistent with the NRB guidelines and this is the major guideline for making investment decisions. This policy outlines the amount to be invested in various sectors such as loan and advances, government bonds, shares and debentures of corporation, placements etc. Likewise, to ensure the proper implementation and functioning of credit policies of the bank, the monitoring and controlling body of the bank frequently monitors all the jobs performed. The main body for monitoring & controlling the credit facilities is Credit Administration and Control Department and there is also an Internal Audit and Compliance Department. The Audit department also audits the functioning of credit departments continuously to ensure that organization is functioning professionally and in consistent with bank's internal policy as well as NRB policy. In both the banks, Internal Audit Department reports to the Audit Committee, which includes both the top level management and board of directors.

## **5.2 Conclusion**

Nepalese government has started to liberalize the financial sector since 1980s to streamline the financial sector of the country. Prior to liberalization, there were 2 commercial banks, 1 central bank, and 2 development banks. After the adoption of financial sector liberalization policy, the financial sector widened with more banks and financial institutions. Commercial banking sectors have made a significant

mark with the establishment of 18 (till Mid July 2006) commercial banks. Though banking sector developed rapidly in quantity, it has remained far behind in terms of quality compared to international banks. Commercial banks are established with an objective to maximize the shareholders' value by performing the function of mobilizing the idle funds collected from the society to productive sector, which will help to achieve the economic development of a country. Bank needs proper handling of several problem and challenges. In current scenario, the major challenge of commercial banks is keen competition among 18 commercial banks. Proper risk management is required to remain competitive in the market & achieve the goals. The major banking risks include credit risk, market risk (i.e. liquidity risk, interest risk, operation risk etc). Among these risks, credit risk has the major impact on banking (i.e. more than 60 %). Because of the credit risk, the Non Performing Loan (NPL) of bank will increase. With the increase in NPL, the loan loss provisioning will also increase simultaneously leading to decrease in profit. The decrease in profit results in low dividend to shareholder and bonus to employees.

To remain alert and prepare plans and policies to tackle unpredictable factors such as violence riots, natural disaster, technology and employees, fault and fraud of customers and outsiders are the challenges for these commercial banks.

For proper management of the credit risk, both banks have their own set of policies and practices, which is in consistence with NRB guidelines. For credit risk management, both banks have Credit Policies Guidelines (CPG). Similarly, NPL is regularly monitored by both the banks on regular basis and provisioning is done on quarterly basis by categorizing the loan as per NRB guidelines. Similarly, sector wise and security wise lending is being analyzed by these banks on monthly

basis. Organizational structure of these banks is frequently restructured for proper credit risk management as per requirement.

For minimizing the loss arising due to occurrence of the credit risks, capital adequacy have been maintained by these banks within the standard prescribed by NRB. However, the trend of Capital Adequacy ratio of these banks suggests that both the banks need to increase their capital fund, which is possible mainly by issuing shares, debentures or preference share.

Though both the banks have their own set of procedures for assessing various risks and their management, problems are still prevalent in these banks. In credit risk, single sector loan concentration is the main problem in both the banks. In MBL, the major problem is a high amount of lending in manufacturing sector, lending without collateral, non-performing loan & organizational structure for handing credit risk. In KBL, with the increase in total loan, NPL is also increasing. So, proper adjustment is needed for managing the NPL.

### **5.3 Recommendations**

From the above analysis of the credit risk management procedure of both KBL and MBL, following recommendations are made to these banks, NRB and Nepal government in respect to credit risk management:

#### **i. General Recommendations**

Following general recommendations can be made to these banks regarding credit risk management

1. In the current context, both banks have been applying old techniques for managing the credit risk. These techniques should be changed with changes in the environmental forces. They can also conduct comprehensive stress and

scenario testing on all of their portfolios and counter parties to measure the credit risk.

2. Both the banks need to upgrade the credit risk analysis system with the changes in both level and pace of technological changes in external environment. The credit risk management should be used as a strategic management tool to align Risk Adjusted Return on Economic Capital (RAROC) with ROE. These are the key tools for credit that can enable banks to select optimal portfolios and allocate their resources locally into branches, regionally and globally.
3. The banks should believe that credit risk management is really about maximizing shareholder value and that NRB Directives and the Basel II are "compliance". They should believe that credit risk management is critically important so as to ensure that they do not get downgraded by rating agencies
4. There is WTO deadline of 2010, by which Nepal's Banking Sector will have to allow foreign banks to open their branches here. Therefore, the banks that still continues the old banking paradigm will be the targets for acquisitions by larger banks that have stronger credit risk management policies in place. The only key to survival and sustainable success is to reengineer and reform the credit risk strategy that maximizes shareholder value.
5. The bankers should be able to think that Basel II and NRB Directives are not just a compliance issue but rather an opportunity to use credit risk management as a cornerstone of strategic decision making. Following the directives of NRB and acting upon it also reduces bank's risk. Therefore, both the banks are recommended to adhere to the directives and come up with a stronger internal audit and compliance to ensure that the directives are properly followed up.
7. It is often said, "Prevention is better than cure". Hence it is recommended for both the banks to take preventive measures before the risk occur and will suffer

loss. Both the banks are recommended to develop an information system to gather all the possible information and activities to take timely precaution.

## **ii. Specific Recommendations to KBL and MBL**

Specific recommendations suggested to the banks under study (KBL and MBL) are as follows:

1. It has been found that MBL has extended the credit without backing any collateral. This sort of practice seems risky and non-profitable, as there is least chance of covering default loan when there is no collateral and 100 % provision of loan amount need to be maintained. So MBL needs to stop lending without any collateral.
2. KBL and MBL have higher amount of loan and advances in total risk weighted assets. So to minimize the credit risk, the diversification in investment is needed in both the banks. These banks need to diversify investment in government bonds and placements etc.
3. Both the banks need to properly diversify its lending portfolio. The high amount of lending in manufacturing sectors need to be diversified into various sectors, which will decrease concentration risk.
4. Both the banks have extended the highest amount of loan against the movable and non-movable property, which has 100 % risk weight. So both these banks need to diversify its lending against different securities.
5. NPL of KBL is increasing with the increase in loan and advances. So, KBL need to be more careful while taking credit decision.
6. MBL should change the organizational structure for proper credit risk management. Recovery Cell is needed in MBL for timely recovery of loan.

Similarly, a separate department is needed to be formed for assessing the credit risk.

7. KBL and MBL need to follow following principles for the proper credit risk management;

#### **A. Establishing an appropriate credit risk environment**

Under this following factors need to be considered:

1. The board of directors should have responsibility for approving and periodically (at least annually) reviewing the credit risk strategy and significant credit risk policies. The strategy should reflect the bank's risk tolerance and the level of profitability the bank expects to achieve for incurring various credit risks.
2. Senior management should have responsibility for implementing the credit risk strategy approved by the board of directors and for developing policies and procedures for identifying, measuring, monitoring and controlling credit risk. Such policies and procedures should address credit risk in all the bank's activities and at both the individual credit and portfolio levels.
3. Both banks should identify and manage credit risk inherent in all products and activities. These banks should ensure that the risks of products and activities new to them are subject to adequate credit risk management procedures and controls before being introduced or undertaken, and approved in advance by the board of directors or its appropriate committee.

## **B. Operating under a sound credit granting process**

- 1 Both the banks must operate within sound, well-defined credit-granting criteria. These criteria should include a clear indication of the bank's target market and a thorough understanding of the borrower or counterparty, as well as the purpose and structure of the credit, and its source of repayment.
- 2 These banks should establish overall credit limits at the level of individual borrowers and counterparties, and group of connected counterparties that aggregate in a comparable and meaningful manner for different types of exposures, both in the banking and trading book and on and off the balance sheet.
- 3 A clearly established process in place for approving new credits as well as the amendment, renewal and re-financing of existing credits is the need for both banks. All extensions of credit must be made on an arm's-length basis. In particular, credits to related companies and individuals must be authorized on an exception basis, monitored with particular care and other appropriate steps taken to control or mitigate the risks of non-arm's length lending.

## **C. Maintaining an appropriate credit administration, measurement and monitoring process**

Both the banks should have in place a system for the ongoing administration of their various credit risk-bearing portfolios. These banks must have in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves. Banks are encouraged to develop and utilize an internal risk rating system in managing credit risk. The

rating system should be consistent with the nature, size and complexity of a bank's activities. Both the banks must have information systems and analytical techniques that enable management to measure the credit risk inherent in all on and off-balance sheet activities. The management information system should provide adequate information on the composition of the credit portfolio, including identification of any concentrations of risk.

#### **D. Ensuring adequate controls over credit risk**

- 1 Both the banks must establish a system of independent, ongoing assessment of the bank's credit risk management processes and the results of such reviews should be communicated directly to the board of directors and senior management.
- 2 These banks must ensure that the credit-granting function is being properly managed and that credit exposures are within levels consistent with prudential standards and internal limits. Banks should establish and enforce internal controls and other practices to ensure that exceptions to policies, procedures and limits are reported in a timely manner to the appropriate level of management for action. Both banks must have a system in place for early remedial action on deteriorating credits, managing problem credits and similar workout situations.

#### **E. Capital Adequacy Measure**

Both the banks are required to focus on their supplementary capital as the proportion of supplementary capital on total capital fund is very low.

##### **iii. Specific Recommendations to Nepal Government and NRB:**

1. From 2009/10, Nepal Government has allowed to establish banks in Nepal by foreigners without joint venture of Nepalese investors. This will

certainly provide threat to Nepalese banks. So, Nepal Government should provide some incentives to local banks to face the competition of foreign banks.

2. Nepal Government should provide adequate measures for taking action against the willful defaulters.
3. NRB, in addition to imposing directives, needs to provide training for commercial banks to apply new methods and system.
4. NRB should make a clear cut policies related to banking supervision. Confusing policies need to be removed.
5. NRB needs to establish a separate Credit Rating Organization, which will help to minimize bank's credit risk.

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**APPENDICES****APPENDIX-1****Key Credit Performance Indicators of KBL****(Rs. in Million)**

FY	Risk Weighted Assets (RWA)	Total Loans & Advances	Performing Loans	Non-performing Loans	Loan Loss Provision
2001/02	1,356.83	1,126.60	1,112.28	14.33	15.05
2002/03	2,528.77	2,137.59	2,101.26	36.32	31.85
2003/04	4,449.40	3,697.98	3,669.79	28.19	48.98
2004/05	6,291.84	5,681.01	5,627.02	53.99	90.09
2005/06	7,625.05	7,007.79	6,943.43	64.35	115.93
2006/07	9,959.91	9,062.43	8,996.31	66.12	133.42
2007/08	13,070.38	11,522.38	11,369.90	152.48	187.29

**APPENDIX-2****Key Credit Performance Indicators of MBL****(Rs. In Million)**

FY	Risk Weighted Assets (RWA)	Total Loans & Advances	Performing Loans	Non-performing Loans	Loan Loss Provision
2001/02	981	680.29	609.17	71.12	25.23
2002/03	2,092.01	1,495.86	1,464.77	31.09	31.70
2003/04	3,250.66	2,540.79	2,515.81	24.98	47.68
2004/05	6,063.13	5,130.22	5,110.36	19.86	68.79
2005/06	7,631.99	6,146.57	6,129.66	16.92	78.15
2006/07	9,200.66	7,319.94	7,234.77	85.17	190.05
2007/08	10,417.06	8,964.07	8,871.15	92.92	321.75

**APPENDIX – 3**

**Net Profit of KBL and MBL for last years(Rs in million)**

Fiscal Year	KBL	MBL
2000/01	-2.94	-15.43
2001/02	1.34	-42.35
2002/03	12.47	15.31
2003/04	48.69	46.69
2004/05	87.88	84.87
2005/06	103.67	134.00
2006/07	170.26	76.80
2007/08	174.93	85.02

**APPENDIX 4 (A)**

**Security against lending KBL**

S. No.	Security against lending	01/02	02/03	03/04	04/05	05/06	06/07	07/08	Average lending	Rank
	<b>A. Secured</b>									
1	Movable/Non Movable Property	661	1,440	3,006	4,266	5,564	7,463	10,565	4,709	1
2	Guarantee of local licensed institutions	27	199	-	-	137	-	-	52	3
3	Government Guarantee	1	-	-	42	-	-	-	6	7
4	Guarantee of internationally rated bank	-	-	-	-	-	-	-	-	10
5	Against export Documents	-	31	65	83	103	12	-	42	4
6	Own bank's Fixed Deposit Receipts	1	-	-	-	22	22	7	7	8
7	Other bank's Fixed Deposit Receipts	12	24	32	51	64	85	106	53	6
8	Against Government Bonds	7	56	134	1	1	-	-	28	5
9	Counter Guarantee	-	-	-	-	-	-	-	-	10
10	Loan against Personal Guarantee	-	-	-	0	18	-	-	3	9
11	Other Securities	417	387	461	1,238	1,099	1,480	844	847	2
	<b>B. Unsecured</b>	-	-	-	-	-	-	-	-	10
	<b>Total</b>	<b>1,127</b>	<b>2,138</b>	<b>3,698</b>	<b>5,681</b>	<b>7,008</b>	<b>9,062</b>	<b>11,522</b>	<b>5,748</b>	

**APPENDIX 4 (B)**

**Security against lending MBL**

S. No.	Security against lending	01/02	02/03	03/04	04/05	05/06	06/07	07/08	Average Lending	Rank
	<b>A. Secured</b>									
1	Movable/Non Movable Property	672	1,210	2,194	4,139	5,151	6,510	7,880	3,965	1
2	Guarantee of local licensed institutions	6	110	72	104	159	378	57	127	3
3	Government Guarantee	-	-	-	-	-	-	-	0	
4	Guarantee of internationally rated bank	-	-	-	-	-	-	-	0	
5	Against export Documents	-	-	-	-	-	-	-	0	
6	Own bank's Fixed Deposit Receipts	0	2	1	12	40	19	4	11	5
7	Other bank's Fixed Deposit Receipts	-	-	-	6	84	211	238	77	4
8	Against Government Bonds	-	-	-	4	2	-	-	1	7
9	Counter Guarantee	-	-	-	-	-	-	-	0	
10	Loan against Personal Guarantee	-	0	0	0	-	185	98	40	8
11	Other Securities	-	170	259	865	710	23	686	388	2
	<b>B. Unsecured</b>	2	-	15	-	-	-	-	2	6
	<b>Total</b>	681	1,492	2,541	5,130	6,146	7,326	8,963	4,611	

**APPENDIX-5**

**Credit Concentration on different Sector on fiscal year 2005/06**

**(The proportion of sector wise lending to total loan)**

Sectors	KBL		MBL	
	Loan Amt.	Ratio (%)	Loan Amt.	Ratio (%)
Agriculture	251.3	3.63	56.5	0.94
Mining	143.8	2.08	66.9	1.11
Productions	1375.1	19.88	1817.2	30.12
Construction	618.8	8.94	591.2	9.80
Metal Productions, Machinery & Electric Tools & Fittings	162.3	2.35	157.3	2.61
Transport equipment, Production & Fitting	543.8	7.86	89.5	1.48
Transport, communication and public services	121.6	1.76	748.9	12.41
Whole Seller & Retailer	417.1	6.03	1109.3	18.39
Finance Insurance & Fixed Assets	790.6	11.43	174.9	2.90
Service Industries	631.6	9.13	611.9	10.14
Consumer Loan	648.3	9.37	4.3	0.07
Local Government	0	0.00	0	0.00
Others	1214.2	17.55	605.5	10.04
Total	6918.5	100.00	6033.4	100.00

**APPENDIX-6**

**Core Capital of KBL for last Seven years**

S. No.	Particulars	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
1	Paid Up Capital	350	350	500	500	625	750	1070
2	Share Premium							
3	Non-Redeemable Preference Share							
4	General Reserve Fund	0.27	2.76	12.50	30.08	50.81	84.86	119.85
5	Cumulative profit/Loss	(2.94)	(2.98)	6.78	17.18	20.21	35.03	41.35
6	Capital Redemption Reserve							20
7	Net Profit after Provision, Tax & Bonus (Current Year)	0.04	9.76	10.39	(5.54)			
8	Capital Adjustment Fund				100	37.5	150	107.83
9	Other Free Reserve					125		
10	Less: Goodwill					-		
	Investment in excess of prescribed limit					-		
	Fictitious Assets					-		
	Investment in securities of companies with financial interest					-		
	Primary Capital	347.29	359.55	529.68	641.72	858.52	1019.89	1359.03

## APPENDIX – 7

(Rs. In million)

## Core Capital of MBL for last Seven years

No.	Particulars	2001/02	2002/03	2003/04	2004/05	2005/06	2004/05	2005/06	2006/07	2007/08
1	Paid Up Capital	136	544	550	550	715	550	715	821.65	821.65
2	Share Premium									
3	Non-Redeemable Preference Share									
	Proposed Bonus Share					107.25		107.25		164.33
4	General Reserve Fund	0.27	3.06	12.40	29.37	56.17	29.37	56.17	70.99	87.99
5	Cumulative P/L	(2.94)	57.78	45.53	9.53	13.53	9.53	13.53	103.48	3.07
6	Capital Redemption Reserve					0		0		
7	Net Profit after Provision, Tax & Bonus (Current Year)	(42.35)	12.25	35.99	67.89		67.89			
8	Capital Adjustment Fund					35		35		
9	Other Free Reserve									79.69
	Less: Goodwill									
10	Investment in excess of prescribed limit									
	Fictitious Assets					(7.00)		(7.00)	(4.6)	(4.8)
	Investment in securities of companies with financial interest					(8.41)		(8.41)	(8.9)	(8.9)
	Primary Capital	91.18	501.70	52.86	37.73	911.54	37.73	911.54	982.58	1142.97

**APPENDIX - 8**

**Calculation of Average Interest Rate on Loan**

S.No.	Loan Type	Interest Rate			
		KBL		MBL	
1	Overdraft	10-12	11	10-12	11
2	Export Credit	9.5-10.5	10	9.5-10.5	10
3	Import L/C	8-11	9.5	7.5-9	8.25
4	Against FDR	+2	+2	+1.5	+1.5
5	Against HMG Bond	7.75-9	8.375	6	6
6	Against BG/CG	X	X	7	7
7	Against other guarantee	X	X	8.5	8.5
8	Industrial Loan	10-12	11	X	X
9	Commercial Loan	10.5-12	11.25	x	X
10	Priority Sector	10-12	11	10	10
11	Deprived Sector	6-7	6.5	5-10	7.5
12	Term Loan	11-12	11	10-11	10.5
13	Working Loan	10-12	11	9-11	10
14	Hire Purchase Loan	9-11	10	8.5-9.5	9
15	Others	8-13	10.5	6.5-11	8.75
Average		9.4712		8.3077	

BG- Bank guarantee

CG – Corporate Guarantee

Source: Banking & Financial Statistics, Mid-July 2008)

**APPENDIX -9**

**Calculation of Default Probability**

**Default Probability = 1 – P = 1 – Repayment Probability**

	KBL (%)	MBL (%)	
Average Interest Rate on Loan (K)	9.4712	8.3077	
Risk Free rate of return (i)	3.25	3.25	T-bill rate 3.25% for 90-days & 3.95 for 364 days.
Repayment Probability (P)	0.9432	0.9533	= (1.0325/1.094712) & (1.0325/1.083077)
Default Probability	0.0568 i.e. 5.68%	0.0467 i.e. 4.67%	

We have,

$$P(1+K) = 1+ i$$

Or,

$$P = \frac{(1 + i)}{(1 + K)}$$

Where,

K = Promised Interest on Loan/Average Interest on Loan

i = Risk Free Rate of return

P= Repayment Probability

**APPENDIX- 8**

**Risk Weighted Asset of KBL**

S. No.	Particulars	2001/02		2002/03		2003/04		2004/05		2005/06	
		Asset	RWA	Asset	RWA	Asset	RWA	Asset	RWA	Assets	RWA
1	On Balance Sheet Asset	1608	1291	3018	2391	5543	4049	7528	5817	9,126	7,217
2	Off Balance Sheet Items	165	66	340	138	855	400	1140	475	881	408
	Total Assets	1773	1357	3358	2529	6398	4449	8668	6292	10,007	7,625
2006/07		2007/08									
	Asset	RWA	Assets	RWA							
	12051.73	9401.58	15218.13	12309.29							
	1414.09	558.32	1881.88	761.08							
	13465.82	9959.91	17100.01	13070.37							

(Rs. In million)

APPENDIX- 9

Risk Weighted Asset of MBL(Rs. In million)

S. No.	Particulars	2001/02		2002/03		2003/04		2004/05		2005/06	
		Asset	RWA	Asset	RWA	Asset	RWA	Asset	RWA	Assets	RWA
1	On Balance Sheet Asset	1130	840	2432	1854	3496	2,900	6525	5452	9,133	6,519
2	Off Balance Sheet Items	171	141	333	238	649	351	1108	611	1,781	1,113
	Total Assets	1301	981	2764	2092	4,145	3251	7634	6063	10,914	7,632
2006/07		2007/08									
Asset	RWA	Assets	RWA								
10986.48	7776.36	12808.08	9722.88								
2303.14	1424.29	1298.92	694.17								
13289.62	9200.65	14107.00	10417.06								

**APPENDIX-10**

**On balance sheet risk Asset's risk weight**

On-Balance Sheet Assets	Weight
Cash Balance	0%
Gold (tradable)	0%
Balance With Nepal Rastra Bank	0%
Investment in HMG Bonds	0%
Investment in NRB Bonds	0%
Fully Secured Loan against Banks Own Fixed Deposit Receipt	0%
Fully Secured Loan against Government Bond	0%
Interest Receivable NSB	0%
Balance With Local Banks and Financial Institutions	20%
Fully Secured Loan against Other Banks Fixed Deposit Receipt	20%
Balance With Foreign Banks	20%
Money at Call	20%
Loan against Guarantee of Internationally Rated Banks	20%
Other Investment in Internationally Rated Banks	20%
Investment in Share, Debenture and Bond	100%
Other Investment	100%
Loan, Discount and Overdraft	100%
Fixed Assets	100%
All Other Assets (Excluding Tax Paid)	100%
AIR (Accrued Interest Receivable)	100%

**APPENDIX - 11****Off Balance Sheet Asset' risk weight**

Off-Balance Sheet Assets	Weight
Bills Collection	0%
Forward Foreign Exchange Contract	100%
Letter of Credit with maturity less then 6 months	20%
Guarantee against counter guarantee of internationally rated foreign banks	20%
Letter of Credit with maturity more then 6 months	50%
Bid Bond/Performance bond & Underwriting	50%
Advance Payment Guarantee	100%
Financial Guarantee/Other Guarantee	100%
Irrevocable Loan Commitment	100%
Contingent Liability On Income Tax	100%
Acceptance and Other Contingent Liability	100%

**APPENDIX- 6****Total Capital Fund of KBL for last Seven years****(Rs. In million)**

No.	Particulars	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
1	Primary Capital	347.29	359.54	529.68	641.72	858.52	1019.89	1359.03
2	Supplementary Capital	16.18	31.37	40.47	63.81	82.46	95.31	523.89
	<b>Total Capital Fund</b>	<b>363.47</b>	<b>390.91</b>	<b>570.15</b>	<b>705.53</b>	<b>940.98</b>	<b>1115.20</b>	<b>1882.92</b>

**APPENDIX- 7****Total Capital Fund of MBL for last seven years****(Rs. In million)**

No.	Particulars	01/02	02/03	03/04	004/05	005/06	006/07	007/08
1	Primary Capital	78.43	501.7	552.86	637.73	911.54	982.57	142.97
2	Supplementary Capital	26.35	16.16	26.51	51.10	64.52	119.14	136.82
	<b>Total Capital Fund</b>	<b>104.78</b>	<b>17.86</b>	<b>579.37</b>	<b>688.83</b>	<b>976.06</b>	<b>101.72</b>	<b>279.79</b>

## APPENDIX-8

### Responses of Questionnaire

**1. Do you agree that Banking is a High Risk Business.**

The following responses have been made by the respondents of KBL.

	Agree	Strongly Agree	Disagree	Strongly Disagree
KBL	1	9	0	0
MBL	0	10	0	0

**2. What is the proportion of Credit Risk on total banking risk?**

The following responses has been made by 20 respondents

Proportion of Credit Risk	KBL	MBL
0-20 % (Low)		
20-40 % (Average)		
40-60 % (High)	1	2
Above 60 % (Highest)	9	8

**3. How much proportion of total loan does the bank can lend in a single sector/borrower?**

Single Sector loan	KBL	MBL
0-10 %	8	6
10- 20 %	2	3
20- 30 %		1
30-100%		

**4. Does the bank have credit rating system?**

Response	KBL	MBL
Yes	10	10
No		

**5. How do you rank the following aspects while granting credit? (Rank 4 for the highest priority and 1 for lowest priority)**

**Ranking by KBL Employees**

Rank	Character	Collateral	Capital	Condition	Capacity	Total
1	1	3	7	6	2	19
2	4	4	4	4	6	22
3	6	5	6	6	7	30
4	9	8	3	4	5	29
(Rank X Frequency)	63	58	45	48	55	269

**Ranking by MBL Employees**

Rank	Character	Collateral	Capital	Condition	Capacity	Total
1	1	6	3	8	2	20
2	4	6	6	6	3	25
3	5	5	5	4	8	27
4	10	3	6	2	7	28
(Rank X Frequency)	64	45	54	40	60	263

**6. On the basis of priority of lending, please rate the following sectors (Rate 5 for the highest priority sector and 1 for least priority sector)**

**Ranking by KBL Employees**

Rank	Agriculture	Mines and Minerals	Real Estate	Manufacturing	Consumer loans	Service Industry	Total
1	12	7	2	0	2	2	25
2	5	8	5	2	7	3	30
3	3	4	6	6	5	5	29
4	0	1	7	12	6	10	36
(Rank X Frequency)	31	39	58	70	55	63	316

**Ranking by MBL Employees**

Rank	Agriculture	Mines and Minerals	Real Estate	Manufacturing	Consumer loans	Service Industry	Total
1	11	6	2	1	2	2	24
2	6	8	4	2	7	6	33
3	3	5	8	7	5	7	35
4	0	1	6	10	6	5	28
(Rank X Frequency)	32	41	58	66	55	55	307

**7. To what extent, today's banking industry is affected by the problem of NPL?**

Response	KBL	MBL
Not affected		
Nominally affected		
Moderately affected	1	1
Severely affected	9	9

**8. How important do you think is the directives related to loan classification and provisioning for a commercial banks?**

Response	KBL	MBL
Very Important	10	10
Not Important		

**9. What will be the impact of new directives on provision for loan loss of commercial banks?**

Response	KBL	MBL
Will increase provision for loan loss	10	10
Will decrease provision for loan loss		
Will have no impact		
Others		

**10. How do you think the shareholders of the bank are going to be affected by present loan classification and provisioning directive?**

Response	KBL	MBL
Will enjoy lesser dividend	10	10
Will have their EPS decreased	10	10
Will not be affected at all		
Others		