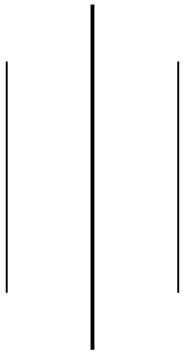
"Risk Management Of Commercial Banks"

(With Special Reference to Kumari Bank Ltd. And Machhapuchchhre Bank Ltd.)



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Declaration

I hereby declare that the work reported in this thesis entitled "A study on Risk Management of Commercial Banks" submitted to St. Xavier's College, Faculty of Management, Tribhuvan University is my original work done in the form of partial fulfillment of the requirement for the Masters Degree in Business Studies (MBS) under the supervision of Mr. Shankhar Thapa.

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Date:

TABLE OF CONTENTS

Chapter III
Research Methodology

Chapter IV
Data Analysis & Presentation

List of Tables

List of Figures

Abbreviation

FY = Fiscal Year
KBL = Kumari Bank Ltd.
MBL = Machapuchchhre Bank Ltd.
NRB = Nepal Rastra Bank
NBL = Nepal Bank Ltd.
RBB = Rastriya Banijya Bank
NPL = Non- Performing Loan
NBA = Non Banking Asset
ECA = Export Credit Rating Agencies
CIB = Credit Information Bureau
IRR = Interest Rate Risk
NG = Nepal Government
IRC = Interest Rate Change
CAR = Capital Adequacy Ratio
VAR = Value at Risk
NPA = Non- Performing Asset
CB's = Commercial Banks
NIBL = Nepal Investment Bank Ltd.
S.D. = Standard Deviation
C.V. = Coefficient of Variance
P.E = Probable Error
IRSA = Interest Rate Sensitivity Asset
IRSL = Interest Rate Sensitivity Liabilities
RWA = Risk Weighted Asset
LLP = Loan Loss Provision

CR = Current Ratio

CRR = Cash Reserve Ratio

CD Ratio = Credit Deposit Ratio

FDR = Fixed Deposit Receipt

L & A = Loan and Advances

ALCO = Asset Liability Management Committee

CEO = Chief Executive Officer

CPO = Credit Policies Guideline

RT = Row Total

CT = Column Total

NIM = Net Interest Margin

RSA = Risk Sensitivity Asset

RSL = Risk Sensitivity Liabilities

KYC = Know Your Customer

ABBS = Any Branch Banking Services

EOD = End Of Day

ATM = Automated Teller Machine

POS = Point Of Sell

SCT = Smart Choice Technology

L.C. = Letter of Credit

AML = Anti Money Laundering

Govt. = Government

i.e. = that is

SDC = Shanker Dev Campus

Estb. = Establishment

Chapter- I
Introduction

1.1 General Background

Sound banking system is the crucial means to accelerate the development of a country by strengthening the economic condition in this globalize 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.

Concisely, [1]Bank is a financial institution, which deals with money by accepting various types of deposits, disbursing loan and rendering various types of financial services. It is the intermediary between the deficit and surplus of the financial resources. Banking when properly organized, aids and facilitates growth on trade and considered not as dealers money but as the leader of development. Bank are not just the storehouse of the county's wealth but are the reservoirs of resources necessary for economic development.

In Nepal, banking sector started in 1937 A.D with the establishment of Nepal Bank Ltd., Nepal Rastra Bank, the central bank of Nepal, established in 1957 A.D followed by Rastriya Banijya Bank in 1966 A.D. As Nepalese government took liberal economic policy, joint venture banks started to operate since 1984 A.D with the establishment of Nepal Arab Bank Ltd. Since then, commercial banks have increased to 25 with the addition of 5 banks in 2007/08. Commercial bank's branches have increased to 106 to 558. With the growth rate of banking industry from the 1984 A.D., the risk on banking has also made a mark simultaneously. Most of the Nepalese banks have suffered from the

[1] Radhaswami and Vasudevan, 1991, p.29

credit risk, which is associated with the non-payment of loan by the borrowers. Nepal Bank Limited, Rastriya Banijya Bank are the greatest victim of such risk, leading these banks to have negative net worth. Present challenges to the banking sector are: to manage the excess liquidity outstanding, to invest the money in productive as well as new sector, to manage the accumulated non- performing loan. Commercial banks collect deposits from individuals and invest them 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 action must be taken by the banks and government to overcome this situation.

In addition to the credit risk the bank faces other risks. According to the Nepal Rastra Bank Unified Directives 2005, the major source of risk is credit risk, liquidity risk, foreign exchange risk, and interest rate risk and operation risk etc.

Current context of globalization, privatization, free market, economic liberalization etc have made the activities of banks and financial institutions more complex and challenging. Recent development in science and information technology has turned the whole world as a small village. A small mistake made by an organization affect in numerous sectors for the long run; to the organization, and nation. Therefore, organizations must be conscious and vigilant in their activities.

1.2 Brief Introduction of Banks under Study

[2]According to Nepal Commercial Banks Act. 2031," A commercial banks refers to such type of banks which deals in money exchange, accepting deposits, advancing loans and other commercial transactions other than some special function performed by specified banks such as co-operative, agriculture and industrial banks."

[2] Commercial Bank Act. 2031, Central Office, Legal Department, NRB, p.3

Two commercial banks Kumari Bank Ltd (KBL) and Machhapuchchhre Bank Ltd (MBL) have been selected for the study. Since their date of establishment and the size of capital are also quiet similar, these two banks are chosen for study. The brief introduction of these banks is as follows:

a. Kumari Bank Limited:

Kumari Bank Ltd (KBL) was established in December 10, 1999 as the fifteenth commercial bank in Nepal and stared its operation from April 3, 2001. The main head office of KBL is located at Putalisadak in Kathmandu. The bank 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 main mission of the bank is to provide world-class service to the customer at a higher satisfaction level, practice total quality management, embrace good governance and optimization of the assets to achieve sound business growth.

Kumari Bank Limited (KBL) is the growing bank of Nepal. The bank has the paid of capital of Rs. 1078.272 million, with total deposit of Rs12778.158 million and Rs11338.726 million worth of lending in fiscal year 2007/08. The bank has the non-performing loan of 1.35 % of total loan in fiscal year 2007/08. The bank has adopted computerized system in banking. The main software of the bank is called Globus and the bank has the Any Branch Banking System (ABBS). The bank also provides different services such as ATM and electronic banking etc. The bank is pioneer in providing some of the latest / lucrative banking services like E-Banking and SMS banking services in Nepal. 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 providing loans and advances in various sectors

such as Agriculture, manufacturing, deprived sector, industry and consumer financing etc.(Annual Report, 2006/07)

Based on the personal finding, it is found that risk is considered as the major threatening factor in KBL, which is given high priority by the top management for its proper management. The bank has developed well defined polices and procedure with structured organizational layers for management of risks. Accordingly, the bank has categorized the overall risk into credit risk, market risk, liquidity risk, operation risk etc. The main risk management committee includes Asset Liability Management Committee, Audit Committee and Human Resource Committee.

b. Machhapuchchhre Bank Limited:

Machhapuchchhre Bank Limited started its operation in December 10, 2000 as the fourteenth commercial bank and the first commercial bank in the western part of Nepal. The main head office of MBL is located in Pokhara and the corporate office is in Kathmandu. The bank has 25 branches located all over the major parts of the country. The bank also established its branch in Jomsom, Mustang district. 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. The bank aims to serve the people of both urban and rural areas.

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., of which the promoters group, public and employees hold 70 %, 25 % and 5 % of total shares respectively. The bank has the deposit and loan and advances of Rs. 11101.18 million and Rs. 8674.976 million respectively in fiscal year 2007/08. The bank has the non-performing loan of 1.04 % of total loan in fiscal year 2007/08. The bank has adopted computerized system in banking. The main software of the bank is called Globus and the bank has the

Any Branch Banking System (ABBS). The bank also provides different services such as ATM and electronic banking etc. The bank has been providing loans and advances in various sectors such as agriculture, manufacturing, deprived sector, industry and consumer financing etc. (Annual Report, 2006/07)

Risk management has been identified as the key function of the bank in all levels of management. The Credit Committee, Internal Audit & Compliance Department are the key departments that are concerned with the management, compliance and evaluation of the risk management procedure.

1.3 Statement of Problem

Banking industry in the eyes of the layman appears as a very profitable sector. However, unlike the general perception, the industry is plagued with immense challenges to sustain it and outpace those within the industry, mainly due to rising competition with the establishment of 25 commercial banks with the addition of 5 banks in 2007/08 in addition to weak economic situation of the country, indicated by the GDP growth rate of 3.3 % in 2007/08. One of the major challenges is the government's policy of total liberalization of the banking industry from fiscal year 2009/10 A.D, which has allowed the foreign banks to operate their branch in Nepal without joint venture of Nepalese investors. This has resulted in the increased pressure for Nepalese commercial banks to face the competition of foreign banks. Similarly, Nepal Rastra Bank (NRB) directives to commercial banks to increase the paid up capital Rs. 2 billion by 2010 has challenged most of the commercial banks in Nepal. *(NRB,* 2005, p.30)

Major problem and challenges of commercial banks include:

Credit Risk:

Credit risk is the main problem of the banking sector in Nepal. 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 120.46% of total loan in fiscal year 2007/08. Nepal Bank Ltd. and Rastriya Banijya Bank that hold about 70 percent of total deposit collected by Nepalese commercial banks have recovered Rs 10.64 billion and Rs 8.03 billion of their non-performing loan (NPL) in cash respectively from 2003/04 to mid- April 2007. As a result, NPL, which is taken as an indicator of the financial health of the commercial banks, declined from 30.4 percent in mid-July 2002 to 14.1 percent. NBL & RBB have held non-performing loan of 8.05% & 21.63% respectively in fiscal year 2007/08. Due to the high amount of non-performing loan of these banks, these banks carries high amount of accumulated loss, which is indicated by the high amount of negative retained earnings . Because of the huge negative retained earnings of these banks, the overall commercial banks have negative retained earnings. The high amount of negative retained earnings of these banks leads the negative capital fund. The overall commercial banks had negative capital fund. On the contrary, the risk weighted asset of the commercial banks has increased, which results the negative capital adequacy ratio. NRB in the recent year has provisioned to maintain the capital adequacy ratio at 11%.

Likewise, the Non Banking Asset (NBA) is also the major problem in banking industry. Because of this phenomenon, the management of these banks has been handed over to the foreign experts. Likewise, Lumbini Bank Limited (LBL), because of its continuous poor performance, was taken over by NRB for few years however, the management of the bank was handed over to the private sectors.(NRB, 2005)

Similarly, the loan exposure in production and retailers has resulted in the high credit concentration risk. The recovery of loan is also the major challenge for Nepalese Commercial banks. The willful defaulter, that is the client who defaults the loan intentionally, is also one of the big problems of Nepalese commercial banks especially for NBL and RBB. Besides, the proper asset liabilities management of Nepalese commercial banks is also the striking problem. In assets side, the proportion of loan is

70%, which means that there is less diversification in investment of Nepalese commercial banks. Because of the improper asset liabilities management of commercial banks, Nepalese commercial banks have been suffering from interest rate risk and liquidity risk. (NRB, 2005, p.30)

Market Interest rate and Operational Risk:

In addition, the change in market interest rate is also one of the biggest challenges to the Nepalese banks. The interest rate on the both the deposit and the loan have been declining each year. The average interest rate on loan and advances in fiscal year 2003 A.D. was 11.46 % that has decreased to 10 % in 2006 A.D. The annual decline in interest rate is around 5 points. Similarly, the interest rate on deposit has also been declining each year. The average interest rate on deposit in fiscal year 2003 was 4.93 %, which has decreased to 3.9 % in 2006. On the one hand the average interest rate on deposit is 3.9 % in 2006, whereas the inflation rate of the country was 6% in 2006/07.

Likewise, the usage of computerization in banking such as computerized banking system, Internet Banking, Mobile Banking, ATM, Credit Card services have also increased the operation risk of the banking sector.

Foreign Exchange Risk:

According to Ministry of Finance, the remittance has been the major part of national economy of the country's, which results in the increase in foreign exchange in banking sectors. Private sector remittance inflow which became a major source of foreign currency earnings in recent years has increased by 3.9 percent in the first 11 months of 2006/07 to Rs. 91.10 billion. The increased foreign exchange transactions lead to increased foreign exchange risk of the banking sectors, which result due to appreciation and depreciation of the foreign exchange rate. Likewise the money laundering is also one of the most important issues throughout the world in current scenario. As the issue of money laundering has been significantly increasing globally, Nepalese commercial banks

also have to deal tactfully in this regard. On February 2006, the Union De Banques Arabes Et Francaises (UBAF) has declined the transactions with Nepalese by showing a reason that Nepal Government does not have polices for anti money laundering. Few staffs of the banks have stated that foreign banks frequently ask about the anti money laundering policies of the bank.

Further, the issuance of new 16 unified directives by the NRB in 2005 has also provided the commercial banks different measures related to credit risk, interest rate risk, foreign exchange risk, liquidity risk and operation risk coupled with maintaining adequate capital to safeguard the interest of investors, depositors and shareholders. The commercial banks need to comply with these prudential, which have also provided the challenges to the commercial banks of Nepal. Among these, the loan loss provisioning and capital adequacy measures have been providing the major challenges to Nepalese commercial banks.

Likewise, the implementation of Basel II from 2007 has also been the challenges for Nepalese Commercial Banks. Basel II is mainly concerned with the management of various types of risks and the capital framework for providing enough cushions to absorb the risks faced by commercial banks. The Basel II has categorized Nepal as the high-risk country with ECA (Export Credit Rating Agencies) rating 7. This means that the Nepalese Commercial banks assets are rated risky up to 150%.

Kumari Bank Ltd. and Machhapurchare Bank Ltd. established as 14th and 15th commercial banks in Nepal respectively are not isolated with above mentioned challenges and problems faced by the entire banking industry. More specifically, the major problems related to these banks are asset liabilities management, proper compliance of NRB Directives and international measures. NRB had instructed to then Chairmen of Machhapuchhre Bank to step down from his position, as chairman in 2002. The decision was taken after the central bank's Monitoring and Supervision Department found out that the chairman was Managing Director of another company that was blacklisted by the Credit Information Bureau (CIB). The decision was based on the latest

directives of the central bank, which clearly states that no person involved in the firms blacklisted by the CIB will be allowed to hold a sensitive and responsible post within the Board of Directors of Financial Institutions. (Kantipur, 2002) Similarly NRB frequently comments on these banks credit granting process.

Within this competitive market scenario, the stringent credit risk management, sound portfolio analysis, and proper management of asset and liabilities, compliance of NRB's prudential and Basel II are crucial for these banks to sustain and grow in the industry. From the review of the annual reports and finding with these banks, it is found that both banks have been giving high priority to these problems for the prompt solution to show their continuous competency in the market.

1.4 Objectives of the Study

The study aims to study and analyze how the selected commercial Banks have managed different types of risk in this competitive Nepalese banking industry. The specific objectives of this study are:

a. To analyze the following types of risk of selected commercial banks in Nepal:

    1. Credit Risk
    2. Market Risk
        i. Interest Rate Risk
        ii. Liquidity Risk
    3. Operation Risk

b. To analyze the management of such risks by the KBL and MBL.
c. To analyze Nepal Rastra Bank's directives and measures on the risk management of Commercial Banks
d. To analyze the risk management system of KBL & MBL in reference to NRB Guidelines.

1.5 Rationale of the study

Banking sector is vital sector for economic growth in a country. For the growth and development of this sector proper management of risk by considering the return is required. In today's competitive scenario, several macro economic factors such as political, economical, social and technological factors have increased the challenges to the banking sector. The success of any organization is largely dependent on how properly the organization can manage the risk. Banking sector also involves several risks, which need to be handled promptly for the survival and growth. This research is done mainly to analyze the various risks and their management, in reference to NRB directives. This research will also provide various measures that will provide valuable insight to different stakeholders about the major problems of banks and action taken by them for its management. The key stakeholders who will be largely facilitated by this research includes,

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

1.6 Limitations of the Study

a. 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.
b. The study is based on secondary data. Therefore, the accuracy of results and conclusions highly depends on the reliability of these facts.
c. 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.
d. Resource, time, money constraints and inaccessibility of sufficient information also limit the conclusion drawn from study.
e. This study may not be precise as it is prepared to fulfill the partial requirement of the MBS program.
f. The study has covered only the five years data from fiscal year 2002/03 to 2006/07.

Chapter II

Review of Literature

2.1 Theoretical Review

[3]Bank plays a crucial role in enriching the economic and social life of a country. It is assumed that the "bank" was originated through the Italian word "Banco" which refers to the meaning of accumulation of money or stock (share capital). Similarly, the term bank has been derived from German word "Banch" which refers to the "heaps or mound the term raising". So, bank was related to the issue of paper money. Thus the first meaning of bank has been derived from Italy and secondly from Germany.

[4]According to Indian banking company Act 1949 A.D., "Banking means accepting for the purpose of lending or investment of deposit of money from the public, repayable on demand or otherwise withdrawal by cheque, draft, and order or otherwise." The past decade has seen dramatic losses in the banking industry throughout the world. Firms that had been performing well suddenly announced large losses due to credit exposure that turned sour, interest rate positions taken or derivative exposures that may or may not have been assumed to hedge balance sheet risk. In response to this, commercial banks have almost universally embarked upon an upgrading of their risk management and control systems.

2.2 Meaning of Risk

[5]"Uncertainty is not measurable, risk is." Risk refers to uncertainty on the investment faced by the investors on investment. It is the possibility that actual outcome may be different from those expected. Risk can be defined as the possibility of deviation of the actual return from the expected return. Kupper (2003) defines risk as the volatility of

[3] Khadka S. & Singh H (2060), Banking & Insurance Legislation & Practice, Nabin Prakashan, KTM, p5
[4] Dahal B. & Dahal S. (2002), A Handbook to Banking, Asmita Books & Stationary, KTM, p7.
[5] Frank Knight, Risk, Uncertainty & Profit (1921)

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. [6]'Risk management is attempting to identify and then manage threats that could severely impact or bring down the organization.' In general, the strategies employed include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk, and accepting some or all of the consequences of a particular risk. Traditional risk management, which is discussed here, focus on risks stemming from physical or legal causes (e.g. natural disasters or fires, accidents, death, and lawsuits). Financial risk management, on the other hand, focuses on risks that can be managed using traded financial instruments. Regardless of the type of risk management, all large corporations have risk management teams and small groups and corporations practice informal, if not formal, risk management.

2.3 Types of Risk Faced by Commercial banks

[7]"Banking is 19th century disaster prone industry". Commercial banks are in the risk business. In banking sector risk refers to the possibility that the bank will turn into liquidation. In the process of providing financial services, they assume various kinds of financial risks. Though the banking sector has been facing different types of risks, in this study only credit risk, liquidity risk, interest rate risk and operation risk have been included. However, the brief introduction of foreign exchange risk is also included. The major sources of risk in banking business are:

2.3.1 Credit Risk

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. [8]According to Geoffrey Crowether,"a bank or banker as a dealer in debt of his own and other people. The bankers business is them to take

[6] Carter McNamara, MBA, PhD, Authenticity Consulting, LLC (1997-2008)
[7] Merton Miller (Novel Laureatte)
[8] Ibid, p4

the debt of the other people to offer his own in exchange and thereby to credit money. 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 nonperformance 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.

[9]Success in business, to a certain degree, requires owners and managers to take calculated risks. The most successful business is usually managed by people who know when to push forward and then pull back. The successful company is managed by people who understand what risk in business is, and how this risk should be managed and mitigated.

[9] Yasmin Yousof, Risk Management in Multinational Company, p 3

2.3.2 Market Risk

[10]Market risk is defined as the risk of losses in on-balance sheet and off- balance sheet positions arising from adverse movement in markets prices.' Market risk is exposure to the uncertain market value of the firm's asset. In another word, Market risk is the change in the net value of underlying Asset- Liability due to adverse changes in underlying economic factors such as Interest rates, Exchange rates and equity / commodity prices. Major components of Market risk are

a. Interest Rate Risk (IRR):

Interest Rate Risk is the probability of decline in earnings, due to the adverse movements of the interest rate risk in various markets. Changes in the interest rate can significantly alter net interest income (interest income-interest expenses) depending on the mismatch of assets and liabilities held by the bank. Change in interest rates also affects the market value of bank's equity. [11]Prices and return for long-term bonds are more volatile than those for shorter-term bonds and can generate capital gains and losses creating substantial difference between their real return and the yield to maturity known at the time of the purchase.

b. Foreign Exchange Risk:

Foreign exchange risk is the risk that a bank may suffer losses as a result of adverse exchange rate movements during a period. The bank is also exposed to interest rate risk, which arises from the maturity mismatching of foreign currency positions. Even in cases where spot and forward positions in individual currencies are balanced, the maturity pattern of forward transactions may produce mismatches. In consequence, banks may

[10] Capital Adequancy Framework (2007), NRB, p.21
[11] Mishkin (1995), p.90

suffer losses as a result of changes in premium/discounts of the currencies concerned.

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.

Banks also face another risk called time- zone risk, which arises out of time lags in settlement of one currency in one centre and the settlement of another currency in another time zone. The foreign exchange transactions with counterparties from another country also trigger sovereign or country risk.

2.3.3 Operational risk

Operational risk is associated with the problems of accurately processing, settling, and taking or making delivery on trades in exchange for cash. [12]Operational risk is the risk of loss resulting from inadequate internal processes, people, and system, or from external events. It also arises in record keeping, processing system failures and compliance with various regulations As such, individual operating problems are small probability events for well- run organizations but they expose a firm to outcomes that may be quite costly.

The Basel Committee on Banking Supervision (2000) defines operational risk as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events." Examples of operations risks are:

[12] Capital Adequancy Framework (2007), NRB, p.19

- Risk of loss arising from various types of human or technical error.
- Risk associated with settlement or payment risk and business interruption and legal risk.
- Risk of fraud by employees and outsiders; unauthorized transaction by employees and errors relating to computer and telecommunication systems.

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)

The quantification of operational risk is difficult, as it is difficult to build a clear mathematical or statistical link between individual risk factors and the likelihood of a loss. Data limitations and lack of analytical tools are contributing factors.

2.4 Review of NRB Directives related to risk management of Commercial Banks

The main focus of this study is analysis of the directives of Nepal Rastra Bank issued to 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. The first directive was concerned with the acceptance of deposits and disbursement of loans. In the present context, the directives are issued by NRB, regularly. In 2005, NRB 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.

NRB (2005) prescribes following prudential in different aspects of risk

2.4.1Credit Risk and Directive No. 2 and 3

With an objective to minimize the possible risks associated with credits extended by finance companies in the form of overdraft, loans and advances, bills purchased and discounted, the new unified directive relating to loan classification and provisioning has been issued in 2005.

According to new unified directive No. 2, banks should classify outstanding loan and advances on the basis of aging of principal amount into the following 4 categories.

a. Pass: Loan and advances, whose principal and interest payment has not exceeded the due date, a period of 3 months, shall be included under this category. These are classified and defined as Performing Loan.

b. Substandard Loan: All the loans and advances, whose principal and interest have exceeded the due date, a period of 3 months to 6 months, shall be included in this category.

c. Doubtful Loan: All the loans and advances, principal and interest have exceeded the due date, a period of 6 months to 1 year, shall be included in this category.

d. Bad Loan: All the loans and advances, whose principal and interest, has crossed the due date for a period of more than 1 year are included in this category. Advances, which have least possibility of recovery or considered unrecoverable and also has minimal possibility of partial recovery in future shall be included in this category.

Loan and Advances falling in the category of Sub-standard, Doubtful, and Bad Loan are classified and defined as Non- Performing Loan.

2.4.1.1 Additional arrangement in respect of Pass Loan

Loans and advances fully secured by gold, silver, fixed deposit receipts and HMG (now its NG) securities shall be included under "Good loan"/Pass Loan category. However, where collateral of fixed deposit receipt or HMG (NG) securities or NRB Bonds is placed as security against loan for other purposes, such loan has to be classified on the basis of ageing. Loans against Fixed Deposit Receipts of other banks shall also qualify for inclusion under Pass Loan.

2.4.1.2 Additional arrangement in respect of "Bad Loan"

Even if the loan is not past due, loans having any or all of the following discrepancies shall be classified as "Bad Loan"

- No security at all or security that is not in accordance with the borrower's agreement with the bank
- The borrower has been declared bankrupt.
- The borrower is absconding or cannot be found.
- Purchased or discounted bills are not realized within 90 days from the due date.
- The credit has not been used for the purpose originally intended Owing to non- recovery, initiation as to auctioning of the collateral has passed six months and if the recovery process is under litigation.
- Loans provided to the borrowers included the black list and where the credit information Bureau blacklists the borrower.

Note: Bills purchased/Discounted are to be classified into Bad Loan if they are not realized within 90 days from the due date. Accordingly, bills would have only two classifications (i.e. Pass and Bad)

2.4.1.3 Additional arrangement in respect of term loan

In respect of term loans, the classification shall be made against the entire outstanding loan on the basis of the past due period overdue installment.

Loan Loss Provisioning:
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, which are 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.

2.4.1.4 Additional Provisioning in the case of Personal Guarantee Loans

Where the loan is extended only against personal guarantee, a statement of the assets, equivalent to the personal guarantee amount not claimable by any other shall be obtained. Such loans shall be classified as per above and where the loans fall under category of Pass, Substandard and Doubtful, in addition to

normal loan loss provision applicable for the category, an additional provision by 20 percent point shall be provided. Classification of such loans and advances shall be prepared separately. Hence the loan loss provision required against the personal guarantee loan will be 21%, 45%, and 70 % for Pass, Substandard and Doubtful category respectively.

2.4.1.5 Rescheduling and restructuring of Loan

In respect of loans and advances falling under the category of Substandard, doubtful or loss, banks may reschedule or restructure such loans only upon receipt of a written plan of action from the borrower citing the following reason:

a. The internal and external causes contributing to deterioration of the quality of loan.

b. The reduced degree of risk inherent to the borrower/ enterprise determined by analyzing its balance sheet and profit and loss account in order to estimate recent cash flows and to project future one, in addition to estimate recent cash flows and to project future ones, in addition to assessing market conditions.

c. Evidence of existing of adequate loan documentation.

d. An evaluation of the borrower/ enterprise's management with particular emphasis on efficiency, commitment and high standards of business ethics.

2.4.1.6 Loan Loss Provisioning in respect of reschedule, restructured or swapped loan

a. Except for priority sector, in respect of all types of rescheduled or restructured or swapped loan, if such credit falls under pass category

according to NRB directives, loan loss provisioning shall be provided at minimum 12.5%.

b. In Case of rescheduling or restructuring or swapping of insured or guaranteed priority sector credit, the loan loss provisioning shall be provided at one fourth of the percentage mentioned in clause (a).

c. In respect of swapped loans, the bank accepting the loans in swapping has to provide loan loss provision classifying the loan under the same classification as were existed. The bank accepting the loan in swapping shall obtain certification from the concerned bank of financial institution as to the existing classification.

2.4.1.7 Directive No 3 (Single person or group limit/ Single obligor limit)

Single obligor limit refers to the limit of loan disbursement to a person or a firm or a group of borrowers. 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.

a. 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.

b. 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.

c. 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 approve by the board of directors.

2.4.2 Market Risk and NRB Directive No. 5

According to NRB Unified directive No. 5, the bank has classified the market risk into following categories.

a. Liquidity Risk:

According to NRB directive, the Commercial banks have to classify their liabilities and asset according to the maturity period to identify the gap between asset and liabilities. It has been mentioned that the maturity period has to be classified into following period:

- Maturity period up to 90 days
- Maturity Period between 90 days to 180 days
- Maturity Period between 180 days to 270 days

- Maturity Period between 270 days 1 Year
- Maturity Period above 1 Year.

For those liabilities, which do not have certain maturity period (such as current and saving deposit), the commercial banks have to classify that part of liabilities in above 1 year, which remains as a primary deposit and should have to maintain itself as a minimum deposit.

b. Interest Rate Risk:

The NRB has issued a directive for measuring interest rate risk of commercial banks through the gap analysis method. According to directive, the assets and liabilities of a bank should have to match according to their maturity period. If there exists a gap between asset and liabilities, it is said that there exists an interest rate risk. But while calculating such gap, cash balance and non-interest bearing account should not be included.
Likewise the directive has also made provision for the assets and liabilities, which do not have fixed maturity period.

1. Asset having no fixed maturity period:

   For floating rate loan with interest adjusted periodically, the loan should be categorized into that period, when the interest rate is adjusted. Again for the loan with the interest rate adjustment is subject to special changes (such as treasury bills interest rate), such loan should be categorized into the least maturity period.

2. Liabilities with no fixed maturity period:

   For those liabilities, which do not have certain maturity period (such as current and saving deposit), the commercial banks have to classify that

part of liabilities in above 1 year, which remains as a primary deposit and should have to maintain itself as a minimum deposit.

3. Procedure for Gap Analysis:

a. The gap is determined by deducting total liabilities from the total assets of various periods and such gap can be positive or negative.

b**.** For minimizing the interest rate risk, the cumulative gap should have to be calculated at each maturity period.

c. The changes in interest rate should have to be estimated (generally 1 Percentage can be assumed)**.**

d. The estimated interest rate should have to be adjusted according to the time interval. For such provision interest rate change is calculated by following

$$\text{Interest rate change (IRC)} = \frac{\text{Maturity Period} \times \text{Change in interest rate}}{\text{Days in year}}$$

e. To identify the effect of changes in interest rate on profit and loss on bank, the IRC should have to multiply with the cumulative GAP.

c. Foreign Exchange Risk:

NRB has issued a directive to study the effect on financial position of the banks with the fluctuation in foreign exchange rate. The commercial banks have to segregate the foreign assets and liabilities in short and long term interval to identify the net position of each interval. According to directive the daily net position of bank should be at most 30% of core capital.

The commercial banks have to send such foreign asset position report on weekly basis.

2.4.3 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 No. 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

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 No. 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:

Capital Fund = Primary Capital + 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;

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

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

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

According to NRB directive 2005, the statutory Capital Adequacy Ratio (CAR) for core capital is 6 %, whereas Capital adequacy ratio (CAR) is fixed at 11 percent (including for the computation of CAR for 2005/06) till BASEL II is implemented in fiscal year 2006/07.

2.4 Review of Literatures

2.4.1 Review of Articles and Journals

[13]"Banking business is not to run away from the risk, it is to manage the risk." 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:

a. Risk that can be eliminated by simple business practices.
b. Risk that must be actively managed at the firm level.
c. Risk that can be transferred to other participants.

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

a. Managerial self interest
b. Non linearity of tax structure
c. Cost of financial distress
d. Existence of capital market imperfection.

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

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

[13] Mr. Ziegfried Vermaak, the CEO of SIMARCH NV (nepalbiznews, april, may, june 2008)

For Interest Rate risk, gap Analysis of both interest sensitive and fixed rate asset and liabilities.

Similarly, For Liquidity Risk Management**,** crises model coupled with operational details is prescribed. However usefulness of such model is limited by the realism of the environment considered.

In case of Foreign Exchange Risk, VAR (Value at Risk) model is the main tool.

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 led to a deterioration in the credit standing of a bank's counterparties. This phenomenon is common 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 counter party 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:

a. Establishing appropriate credit risk environment
b. Operation under sound credit granting process
c. Maintaining appropriate credit administration, measurement and monitoring process.
d. Ensuring adequate controls over credit risk
e. Effective role of supervisor

Rana (2001) alerts commercial banks of the new 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. As the directives issued by NRB to commercial banks and finance companies are similar in some aspects, this article is also relevant to finance companies. 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 polices 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.

Sharma (2002), states that NRB has instructed to then Chairmen of Machhapuchchhre Bank, to step down from his position, as chairman. The

decision was taken after the central bank's Monitoring and Supervision Department found out that the chairman was the Managing Director of another Company that was blacklisted by the Credit Information Bureau (CIB). The decision goes by the latest directives of the central bank, which clearly states that no person involved in the firms blacklisted by the CIB will be allowed to hold a sensitive and responsible post in the Board of Directors of Financial institutes.

Lronv to this action of NRB, the then chairman claims that the blacklisting of the said company was done only in 1998 and he was associated with that company only until 1996. Hence, he opined that he need not step down of his position as chairman and that NRB was wrong in instructing to him to do so.

The policy of NRB seems to be vague. The existing policies might be ambiguous as a result of which people try to manipulate as per their personal requirement. However, it can be said that NRB has initiated directives, which have control on the promoters and other senior officials of commercial banks, but it is still to be found whether such directives are consistently followed. This article failed to give a clear picture on what exactly happened after the instruction of NRB. This article highlights the importance of compliance with the directives issued by NRB.

Kupper (2003) 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.

Tiwari (2004) states that Nepal's financial institution have failed in delivering beneficial services to needy people by developing credit- giving centers in rural areas without which economic growth is impossible. On the other hand banks and financial institutions have enough liquidity but they are finding it difficult to find suitable places for investment.

Problems such as insecurity, lack of market research from banks, low investment opportunities, weak operational policies for carrying out financial transaction, among others have contributed to the problems of this sector. Despite central banks directives regulating banks and financial institution, private and government banks are sanctioning haphazardly. Nepal Bank Limited (NBL) and Rastriya Banijya Bank (RBB), the two largest banks, occupy about 50 percent of the country's banking assets. Effective reform of these two is key to improved performance of the whole sector. The process currently underway to reform these two institutions, despite paying huge amounts to foreign experts, has not given expected results. Besides NBL and RBB, the Non-performing Assets (NPA) of some private banks is also very high. If the government and central bank allow the financial sector reforms to focus only on RBB and NBL, it might become a futile effort. The current management of RBB and NBL has not been able to reduce their NPL even after two years, which has crossed over 60 percent.

2.4.2 Review of Thesis

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:

- Increase in operational procedures of the bank, which increase the operational cost of the bank.
- A short term decreases in profitability, which result to fewer dividends to shareholders and less bonus to the employees.
- Reduction in the loan exposure of the bank, which decreases the interest income but increase the protection of the depositor's money.
- Increase protection to the money of the depositors through increased capital adequacy ratios and more stringent loan related documents.
- Increase demand 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. The provision of directives related to interest rate risk, foreign exchange risk, operation risk and liquidity risk are the key areas where further research can be made.

Khadka (2002) has carried out research on "A Comparative study on Investment policy of Commercial Banks" with an objective to find out the relationship between deposits, investment, loans and advances and net profit. She has made the following conclusion while comparing the performance of NBL with NABIL, SCBNL and NIBL. She concludes NBL is comparatively less successful in on balance sheet as well as off balance sheet operations than that of other commercial banks. It predicts that in the coming days if it cannot mobilize and utilize its resources as efficiently as other CBs to maximize the returns; it would lag behind in the competitive market of banking. Profitability position of NBL is comparatively worse than that of other CBs. It predicts that NBL may not maintain the confidence of shareholders, depositors and its customers if it cannot increase its volume even in future.

In this study as well, there exists several areas where further research can be made such as study of commercial banks investment policy in context of NRB provisions, investment portfolio analysis from the point of risk return, investment and Capital Adequacy measures etc.

Shrestha (2003) in her thesis has tried to find out the impact of NRB directives on commercial banks. She has also made effort to find out whether the directives are actually implemented and are being monitored by NRB or not. She has stated that both NABIL and Nepal SBI are implementing the NRB directives.

She concludes that all the changes in NRB Directives made both positive and negative impact on the commercial banks. Even though this study is limited to only two sample (i.e. Nabil Bank and Nepal SBI Bank, among the entire

population, it clears the new directives issued by NRB make good impact to more than bad impact on the various aspect of the banks. It can be seen that the provision has been changed and the increased provisioning amount has decreased the profitability of commercial banks. Apart from this, loan exposure has been cut down to customers due to the borrower limits that have been brought down by NRB. Therefore, reduction in loan amount results to decrease the interest income from loans, which will decrease the profits of the banks in coming years. Decrease in profitability push towards lesser dividends to the shareholders and less bonus to employees. Not only the negative side, but also there are positive sides of new directives. Recently the problems of banks are increasing operating cost and decreasing loan amount resulting decrease in profits of the banks but it shows it is only for short period because the directives are more effective to protect the banks from bad loans, which protect the banks from bankruptcy as well as protection of deposits of depositors. Increase in capital adequacy ratio strengthen the banks financial position, loan related provision will made safety of loans except the risk reducing provision would protect the bank from liquidation. Above all it can be concluded that newly issued directives are more effective than previous one although hit has brought some problems towards banks. To decrease the decreasing profits of the banks they should research the alternatives like more investment in other business, bank should adopt new technology according to the demand of time and must not depend on only interest income for profit.

In this thesis as well, researcher has studied the impact of NRB directive, especially related to loan provisioning, on selected banks. There exists a gap regarding the study of NRB provision related to other risks than credit risk. Similarly, commercial banks compliance in regard to those directives as well as banks policy and procedure to manage various risks can be studied further.

Bhattarai (2004) in her study has made an attempt to analyze various aspects of NRB directives with respect to Capital Adequacy and Loan Classification and Provisioning as per her view the process of continual review and classification of

loans and advances enables banks to monitor the quality of their loan portfolios and to take remedial action to counter deterioration in the credit quality of their portfolios.

She concluded that with the new provisions the banks will have its provision amount increasing in coming years and subsequently profitability of the banks will also come down. However, the true picture of the quality of the asset will be painted in the coming years to come. She recommends, "The banks should be very careful while analyzing the paying capacity of its credit clients". With longer period of past due, the bank will end up increasing its provisions which will keep the bottom line low if the bank is not careful. The major research gap found in her study is she has limited her study in Capital Adequacy and loan classification and provisioning. The research is mainly aimed to identify the NRB provision related to loan loss provision and Capital Adequacy Measures. There exists a gap to study the detail risk analysis of the banks.

In terms of credit risk, more research can be made on the whole credit risk such as concentration risk, collateral risk, exposure risk, organization risk management system etc. Similarly, capital adequacy can also be studied as measure against the risk of commercial banks.

Dhungana (2004) has made a research on the impact of NRB directives to the finance companies. The major objective of the study was:

- To study the norms and standards laid down by Nepal Rastra Bank relating to finance companies in Nepal in respect of Capital Adequacy, Collection of Funds, Statutory Deposit & Liquidity Requirements, Loan Classification and Loan Loss Provisioning, Investments in Shares and securities, Non Banking Assets, and interest income.
- To study the impact of the NRB directives in the smooth functioning and profitability of finance companies.

- To provide necessary recommendations to the NRB and finance companies on the basis of findings.

The main finding in his study regarding the impact of the new directives on the finance companies and the result thereof are:

- Protection of the depositor's money through increased capital adequacy ratio and pressure on finance companies to increase their capital base for collecting more funds from public.
- Stringent loan loss provisioning and thereby reduction on operation profit and consequently less bonus to employees and less dividends to shareholders.
- Reducing interest spread making business competitive there by forcing finance companies to be customer oriented.
- Increase in operational procedures of the finance companies which will increase the operational costs. Forcing those finance companies that were relying on software.
- A short- term decline in profitability resulting in fewer bonuses to employees and less dividend to the shareholders.
- Increased demand for shareholders contribution in the capital base by foregoing dividends for loan loss provisioning and various other reserves to increase the capital base.
- Although new directives are welcomed by finance companies, the same has not been complied with properly.

The major gap in this study is that this study is related to analysis of impact of new directive of finance companies. So, the additional research can be made on the study of impact of directive in commercial banks.

Shrestha (2005) has made study about the credit risk associated with those banks. The main objectives of her study was,

- To find out the proportion of non-performing loan in the selected commercial banks.
- To find out the factors leading to accumulation of non- performing loan in commercial banks.
- To study and analyze the guidelines and provisions pertaining to loan classification and loan loss provisioning.
- To find out the relationship between loan and loan loss provision in the selected commercial bank.
- To study and the impact of loan loss provision on the profitability of the commercial banks.

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

This study is more concentrated on the credit risk of the bank. In terms of credit risk, only non-performing loan has been studied. So there exist lots of areas where further research is called for. In context of credit risk, collateral risk, concentration risk, organization risk management system can be studied. In addition to credit risk, other risks such as market risk, operational risk, foreign exchange risk can be studied.

2.5 Research Gap

From the review of literatures, it has been found that no such research has been made in the risk management of banking sectors. Some thesis has been prepared on the credit risk.

These researches are related only with loan loss provision and non-performing loan. So, the researcher can make further research on concentration risk, collateral risk etc.

Though the different thesis has been written in the NRB Directives and their implementation, all these researches are about the loan provisioning and capital adequacy. Likewise, no research has been made regarding liquidity and, interest rate risk of a bank. Similarly the operation risk, which has the significant portion in total risk, has not been studied till now.

Hence the researcher had attempted to fill this gap by studying the overall risk system of KBL and MBL.

Chapter- III
Research Methodology

3.1 Introduction

Research methodology is a systematic way to solve the research problem. In other words, research methodology describes the methods and process applied in the entire aspect of the study. Kothari (1994) defines Research methodology as the various sequential steps (along with a rational of each steps) to be adopted by a researcher in studying a problem with certain objectives in view. 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 techniques and tools.

3.2 Research Design

A research design is the specification of methods and procedures for acquiring the information needed. It is the overall operational pattern of framework for the project that stipulates what information is to be collected, from which sources and by what procedures. Thus a research design is a plan for the collection and analysis of data. There exits different types of research design like; historical research, descriptive research, case study research, field study research, analytical research, true experimental research and so on.

This study is the combination of historical, descriptive and analytical type of research. Historical data are used to analyze different risks of a bank and each risk is analyzed separately. Historical data are used to identify and analyze past status of the bank's performance based on which future recommendation has been made. Similarly, management system, organizational structure and policies for mitigating the risk and 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 risk management system has been analyzed and

recommendations have been made for improving the 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 different risks and their management system.

Both primary and secondary data are used for analysis of various risks. In credit, interest and liquidity risk, secondary data published in annual reports of banks under study and NRB publications are mainly used. However, some primary data, collected through personal findings, are also used in analysis of credit risk and hypothesis test of such data are also made whenever felt necessary. The operation risk is all about the descriptive research as the quantification of operation risk variable is not feasible.

3.3 Population and Samples

Wolf and Pant (2000) defines the term "population" for research as the universe of research study in which the research is based. Since the research topic is about risk management of commercial banks, all the commercial banks of Nepal form population of the study. The population for the study comprises 25 commercial banks. Among the total population only two commercial banks are taken as sample for the comparative study. The sample is chosen with an objective to find out the risk management system of new commercial banks, which have completed 5 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.

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 report, prospectus, balance sheet, newspaper, Journal, Internet etc. 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. Whereas primary data are mainly collected through questionnaires, interviews and direct observations. For the credit risk analysis, information is collected through questionnaire from 10 staffs each from both KBL and MBL working in Credit

and Credit Control Divisions. In KBL, the total staffs in Credit and Credit 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 Departments has filled up the questionnaire out of 13 staffs. Besides, interview has also been taken from 6 and 4 key informants 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 are used. Besides primary data, collected from different sources are also presented whenever required. Few data are attached in annexure. 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 this 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:

a. Arithmetic Mean:

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

Mean (X) = $\frac{\Sigma x}{n}$

Where x = Mean

ǵx = Sum of all the Variable x

n = Variables involved (observed variables)

b. Standard Deviation:

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 is, 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 sigma (Ω).

It can be computed by using following formula

S.D (Ω) = $\sqrt{\frac{\Sigma(x1-x2)^2}{n}}$

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

c. Coefficient of Correlation:

For making inference about the relationship between loan and loan loss provisioning, non-performing loan and loan loss provisioning correlation coefficient has been computed. Here, Coefficient of Correlation has been used as

a tool to measure the degree of relationship between two variables. In other words, this tool is used to describe the degree to which one variable is linearly related to other variables. Two or more variables are said to be correlated if change in the value of one variable appears to be linked with the change in the other variables. Pant and Chaudhary (2000) define correlation analysis as the closeness of the relationship between the variables. Correlation may be positive or negative and ranges from -1 to + 1.

- Correlation may be positive or negative and ranges from -1 to +1. When r = +1, there is perfect positive correlation;
- When r = -1, there is perfect negative correlation;
- When r = 0, there is no correlation and
- When r < 0.5, then there is low degree of correlation.
- When 'r' lies between 0.7 and 0.999 (or -0.7 and -0.999), there is high degree of positive (or negative) correlation.
- When Y lies between 0.5 and 0.699, there is a moderate degree of correlation.

The simply correlation coefficient “r” is calculated by using following formula:

Simple Correlation Coefficient (r12) = $\frac{n\Sigma x1x2 - \Sigma x1\Sigma x2}{\sqrt{n\Sigma x1^2 - (\Sigma x1)^2}\sqrt{n\Sigma x2^2 - (\Sigma x2)^2}}$

Alternately,

$$r = \frac{Covariance\,(x1,x2)}{\sigma x1 \times \sigma x2}$$

Covariance (x1, x2) = $\frac{1}{n}\,\Sigma(x1 - \overline{x1})\,(x2 - \overline{x2})$

n = Total number of observations.

x1 and x2 = two variables, correlation between them are calculated.

d. Probable Error

In this study, Probable Error has been used for testing the reliability of value of correlation coefficient of non-performing loan and loan loss provisioning, loans and advances and loan loss provisioning. Though it is an old measure of ascertaining the reliability of the value of coefficient of correlation, the technique has been used because of its simplicity. The test of probable error has been made by following ways:

If r is the calculated correlation coefficient in a sample of n pairs of observations then its standard error, usually denoted by S.E. (r) is given by,

S. E. (r) = $\frac{1-r^2}{\sqrt{n}}$

Where,

r = correlation coefficient

n= Number of observation

Probable Error (P.E.) of the coefficient of correlation can be calculated from Standard Error of the coefficient of correlation by the following formula,

If,

- r < P.E. (r), the value of r is not all significant,

  P.E. (r) = 0.6745x S.E. (r)

P.E. (r) may be used to test if calculated value of sample correlation coefficient is significant. A few rules for the interpretation of the significance of correlation coefficient are as follows,

If,

- r > P.E. (r), the value of r is definitely significant
- In other situations, nothing can be calculated with certainty.

P.E (r) may lead to fallacious conclusions particularly when the number of pairs of observation is small. Also the probable error of correlation coefficient may be used to determine the limits within which the population correlation coefficient may be expected to lie. Limits for population correlation coefficient are r = +-P.E. (r). (Pant and Chaudhary, 1998)

e. 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, whereas 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,

1. Null Hypothesis:

Null hypothesis is a statistical hypothesis made about the population parameter to testing its validity for the purpose of possible acceptance. It is usually denoted by Ho i.e. “H sub- zero”.

2. 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_I.

f. $\mathfrak{R}$ - Test (Chi- square test)

$\mathfrak{R}$ - 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,

$$\mathfrak{R} = \frac{\Sigma(O-E)^2}{E}$$

Where,

0 = Observed frequencies

E= Expected Frequencies

After calculating the value, the calculated value is compared with the table value. The table value is determined by referring to the $\mathfrak{R}$ 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, $\mathfrak{R}^2$ -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.

g. Ratio Analysis

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

1. Loans and advances to Total Asset Ratio
2. Loans and Advances to Total Deposit Ratio
3. Non-performing Loan to Total Loans and advances Ratio
4. Loan Loss Provision to Non Performing Loan Ratio
5. Loan Loss Provision to Total Loans and Advances
6. Return on Loan & Advances
7. Current Ratio of KBL and MBL
8. Cash and Bank Balance to Total Asset Ratio
9. Cash Reserve Ratio (CRR)
10. Interest Income to Total Income
11. Interest Expenses to Total Expenses
12. Core Capital to Total Risk Weighted Asset (RWA)
13. Supplementary Capital to Total Risk Weighted Asset
14. Capital Fund to Total Risk Weighted Asset (RWA)
15. On Balance Sheet RWA to Total RWA
16. Off balance Sheet RWA to Total RWA

h. Gap Analysis

Gap Analysis is the process of analyzing the mismatch between asset and liabilities within various maturity periods. Under this measure, asset and liabilities are categorized into various groups as prescribed by the NRB Directive No 5. The main objective of this gap analysis is to identify the mismatch between asset and liabilities in different maturity periods. The higher the gap between asset and liabilities, the greater the liquidity risk and vice versa. The following gap analyses have done in this study for analysis of liquidity and interest rate risk

1. Gap Analysis for Liquidity Risk:

Under this, the gaps of total asset and liabilities of different maturity periods, prescribed by NRB, have been calculated to identify the liquidity crises in different time interval. The higher the gap between asset and liabilities, the greater the liquidity risk and vice versa.

2. Gap Analysis for Interest Rate Risk:

Gap analysis is used to identify mismatch between interest rate sensitive and fixed interest rate asset and the liabilities. Here, assets and liabilities have been classified into interest rate sensitive and fixed interest rate.

Interest Rate sensitive asset and liabilities refers to such an asset/ liabilities, interest rates of which keep on changing in the market. Such types of assets includes the inter bank loan/ placement financial derivatives etc, the interest rate on which changes over night. Interest rate sensitive liabilities includes inter bank borrowing etc. Gap refers to difference between IRSA and IRSL and gap analysis refers to the analysis of the gap between IRSA and IRSL. The higher the gap between assets and liabilities of a bank, the higher the risk does a bank have and vice versa.

Conversely, fixed interest rate asset refers to such asset of a bank, interest rate of which remains fixed for a certain period of time. The rate of interest on this type of asset normally remains constant for a long period. For example, the interest on term loan of a bank is constant for long period of time. Likewise fixed interest rate liabilities (FIRL) refers to such liabilities of a bank, interest on which remains constant for certain period of time, though the market interest rises.

Chapter IV
Data Analysis and Presentation

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 different 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. 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

Credit risk is simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. 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. The key performance indicators of credit performance of KBL and MBL are as follows:

4.2.1. Ratio Analysis

a. Loans and Advances to Total Asset Ratio:

The ratio of loans and advances to total assets measures the volume of loans and advances in the structure of total assets. The high degree of ratio indicates the good performance of the banks in mobilizing its fund by way of lending functions. However, in its reverse side, the high degree 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 asset and high degree of safety in liquidity and vice versa.

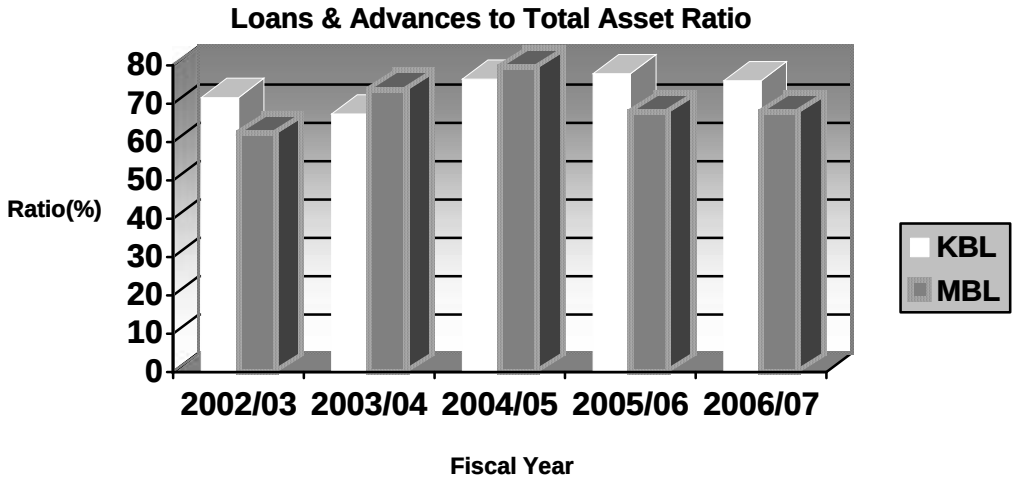
Table No. 4.1

Loans and Advances to Total Asset Ratio

(**Rs. in Millions)**

Fiscal Year	**KBL**			**MBL**		
	Loan & Advances	**Total Asset**	**Ratio**(%)	**Loan & Advances**	**Total Asset**	**Ratio(%)**
2002/03	2137.6	2986.0	71.6	1495.0	2400	62.3
2003/04	3697.9	5494.2	67.3	2541.0	3449	73.7
2004/05	5681.0	7438.0	76.4	5130.0	6456	79.5
2005/06	7007.8	9010.3	77.8	6146.6	9070	67.8
2006/07	9062.4	11918.0	76.0	7326.0	10808	67.8
		Mean	**73.82**		**Mean**	**70.19**
		S.D.	**3.86**		**S.D.**	**5.87**
		C.V.	**5.23%**		**C.V.**	**8.36%**

Source: Annual Reports



Above table and chart exhibits the loans and advances to total assets of two commercial banks for five consecutive years. This ratio shows the increasing and then decreasing trend in both MBL and KBL. The overall ratio of KBL is 73.82% where as ratio in MBL is 70.19%. From this, it is clear that out of total asset in balance items the proportion of loans and advances is higher in KBL as compared to MBL. This means that the credit risk is slightly higher in KBL as compared to MBL. It also infers that the KBL has invested in the risk free asset such as Treasury bills, debentures, National Saving bonds etc.

Likewise, the standard deviation of KBL and MBL are 3.86 and 5.87 percentage respectively. This indicates that the ratio deviate more from the average in case of MBL than KBL. The Coefficient of Variation (C.V.) is 5.23 % and 8.36% in KBL and MBL respectively, which means that per unit variation of the ratio of MBL is more than that of KBL. These indicate that the loan and advances to total asset ratio of MBL has more variation than that of KBL, which means higher risk in case of MBL than KBL.

b. Loans and Advances to Total Deposit Ratio

The core banking function is to mobilize the funds obtained from the depositors to borrowers and earn profit and loan and advances to total deposit ratio, often called

Credit Deposit ratio (CD ratio), is the fundamental parameter to ascertain fund deployment efficiency of commercial bank. In other words, this ratio is calculated to find out how successfully the banks are utilizing their total deposits on credit or loans and advances for profit generating purposes as loans and advances yield high rate of return. Greater CD ratio implies the better utilization of total deposits and better earning, however, liquidity requirements also needs due consideration. Hence 70- 80 % of CD ratio appropriate. This ratio is calculated by dividing total credit by total deposits.

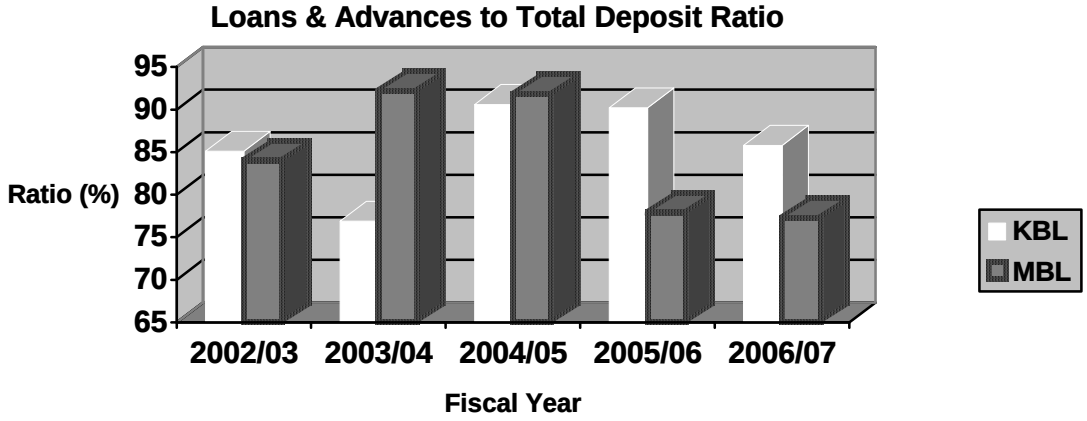
Table No. 4.2

Loans and Advances to Total Deposit Ratio

(Rs. in millions)

Fiscal Year	**KBL**			**MBL**		
	Loan & Advances	**Total Deposit**	**Ratio (%)**	**Loan & Advances**	**Total Deposit**	**Ratio(%)**
2002/03	2137.6	2513.1	85.1	1495.0	1778.8	84.0
2003/04	3697.9	4807.9	76.9	2541.0	2754.6	92.2
2004/05	5681.0	6268.9	90.6	5130.0	5586.8	91.8
2005/06	7007.8	7768.9	90.2	6146.6	7893.3	77.9
2006/07	9062.4	10560.9	85.8	7326.0	9475.5	77.3
		Mean	**85.71**		**Mean**	**84.66**
		S.D.	**4.94**		**S.D.**	**6.47**
		C.V.	**5.76%**		**C.V.**	**7.64%**

Source: Annual Reports



Above table and chart exhibits that the loans and advances to total deposit ratio of two commercial banks for 5 consecutive years. The loans and advances to total deposit ratio of both banks are fluctuating. KBL has the highest CD ratio of 90.6 % in fiscal year 2004/05 whereas MBL has 92.24% in fiscal year 2003/04. The average CD ratio of KBL and MBL for 5 years is 85.71 % and 84.66% respectively. The KBL has higher CD ratio than MBL this means that the KBL has utilized its deposit higher than MBL. This means that the KBL has the higher risk than MBL.

c. 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.

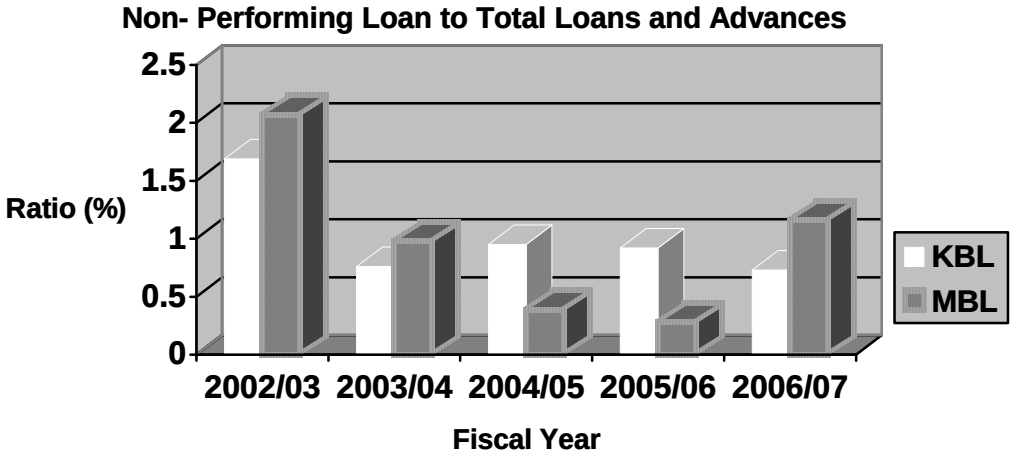
Table No. 4.3

Non- Performing Loan to Total Loans and Advances

(Rs. in Millions)

Fiscal Year	KBL			MBL		
	NPL	Loan & Advances	Ratio (%)	NPL	Loan & Advances	Ratio(%)
2002/03	36.3	2137.6	1.69	31.0	1495.0	2.07
2003/04	28.2	3697.9	0.76	25.0	2541.0	0.98
2004/05	53.9	5681.0	0.95	20.0	5130.0	0.39
2005/06	64.4	7007.8	0.92	16.9	6146.6	0.28
2006/07	66.2	9062.4	0.73	85.2	7326.0	1.16
		Mean	**1.01**		**Mean**	**0.98**
		S.D.	**0.35**		**S.D.**	**0.64**
		C.V.	**34.98%**		**C.V.**	**66%**

Source: Annual Reports



Above table and chart exhibits the ratio of non-performing loans to total loans and advances of KBL and MBL for five consecutive years. It is found that the NPL of both KBL and MBL are fluctuating whereas the loans and advances are in

increasing trend. The average NPL ratios of KBL and MBL are 1.01% & 0.98% respectively. It can be inferred that the average NPL of KBL is higher than that of MBL. The highest amount of NPL is in fiscal year 2002/03 (i.e. 2.07) of MBL. The standard deviation of KBL and MBL are 0.35% and 0.64% where as the coefficient of Variation are 34.98% and 66% respectively. Thus, it portrays that KBL ratios deviate less from the average ratio than that of MBL, which refers to less risk to KBL.

d. Loan Loss Provision to Non Performing Loan 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. Higher the ratio, the better cushion that the bank provides for recovering from loss caused by NPL. Hence, higher ratio signifies the better financial position of bank.

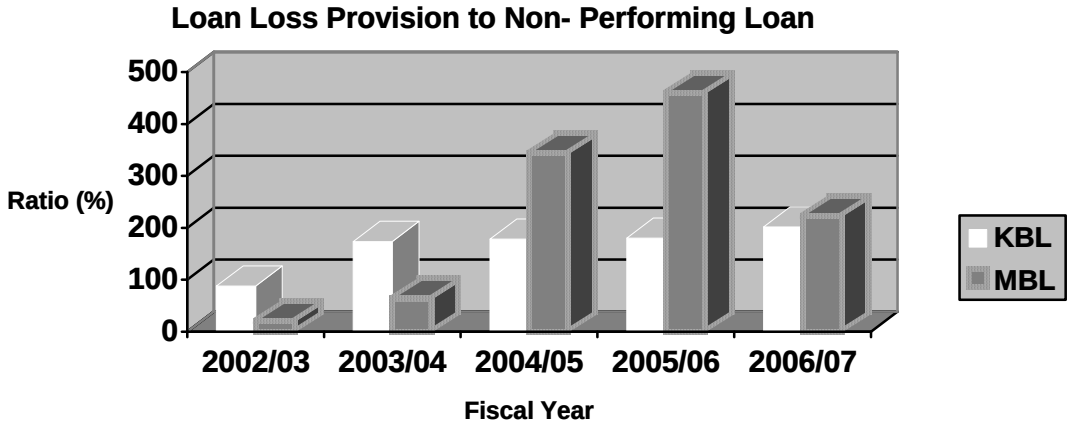
Table No. 4.4

Loan Loss Provision to Non- Performing loan (%)

(Rs in Millions)

Fiscal Year	**KBL**			**MBL**		
	LLP	**NPL**	**Ratio (%)**	**LLP**	**NPL**	**Ratio (%)**
2002/03	31.85	36.32	87.69	6.46	31.00	20.84
2003/04	48.98	28.19	173.75	16.00	25.00	64.00
2004/05	96.38	53.99	178.52	68.79	20.00	343.95
2005/06	116.00	64.35	180.26	78.14	16.99	459.90
2006/07	133.42	66.20	201.54	190.00	85.17	223.08
		Mean	**164.35**		**Mean**	**22.002**
		S.D.	**39.50**		**S.D.**	**165.46**
		C.V.	**29.03%**		**C.V.**	**74.41%**

Source: Annual Reports



Above table and chart shows the ratio of provision held to non- performing loan of KBL and MBL for five consecutive years. The figure represented in the chart depicts that the MBL has the higher ratio in all years except in fiscal year 2002/03 and 2003/04. The NPL ratio of both the banks is in fluctuating trend. The NPL ratio of MBL is highest by 85.17% in fiscal year 2006/07 as well as the provisioning is also highest by 190% in the same year. The overall ratios of NPL of KBL and MBL are 163.35 and 222 percent respectively. This shows that MBL has provided higher cushion of provisioning to nonperforming loan compared to KBL.

The standard deviation of KBL and MBL are 39.50 and 165.46 percent respectively. This means that there exists the higher deviation in this ratio in context of MBL than KBL. The coefficient of variation of KBL and MBL is 29.03 % and 74.41 % respectively, which reflects that KBL's Loan Loss Provision to Non-performing loan ratio fluctuate more from the average than that of MBL.

e. 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.

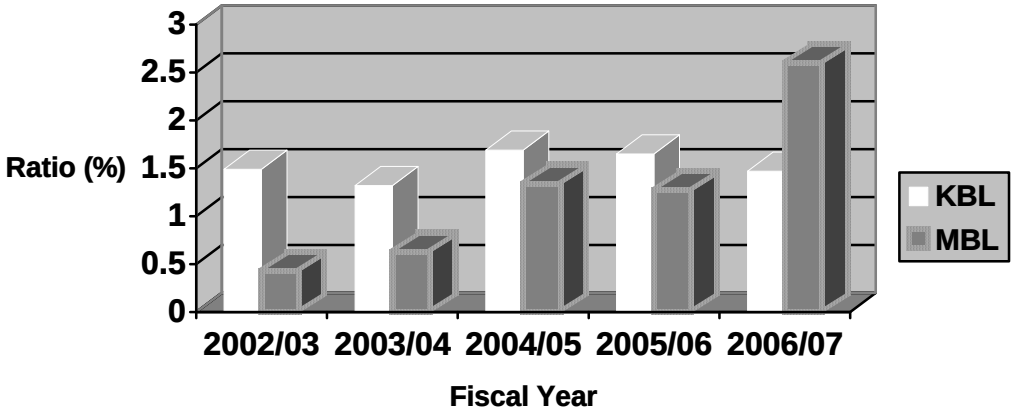
Table No. 4.5

Loan Loss Provision to Total Loan and Advances

(Rs. in Millions)

Fiscal Year	**KBL**			**MBL**		
	LLP	**Loan & Advances**	**Ratio (%)**	**LLP**	**Loan & Advances**	**Ratio(%)**
2002/03	31.85	2137.59	1.49	6.46	1495.00	0.43
2003/04	48.98	3697.98	1.32	16.00	2541.00	0.63
2004/05	96.38	5681.01	1.69	68.79	5130.00	1.34
2005/06	116.00	7007.78	1.65	78.14	6146.58	1.27
2006/07	133.42	9062.43	1.47	190.00	7326.00	2.60
		Mean	**1.53**		**Mean**	**1.25**
		S.D.	**0.13**		**S.D.**	**0.76**
		C.V.	**8.8%**		**C.V.**	**60.60%**

Source: Annual Reports



From above table and chart, 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 1.53 and 1.25 percent of KBL and MBL respectively. The ratio is higher in KBL than MBL except in fiscal year 2006/07. This higher ratio reflects that the KBL has higher non-performing loan compared to MBL.

Likewise, the Standard deviation and coefficient of Deviation of KBL are 0.13 and 8.8% respectively, which is lower than that of MBL (i.e. 0.76 and 60.60% of Standard deviation and coefficient of deviation respectively). From this, it is clear that the MBL has higher risk than that of KBL.

f. Return on Loan & Advances

This ratio indicates how efficiently the bank has employed its resources in the form of loans and advances. This ratio is calculated by dividing net- profit of the bank by total loan and advances. Net profit refers to that profit which is obtained after all types of deduction like employee bonus, tax, provision etc. Hence, this ratio measures bank's profitability with respect to loans and advances. Higher the ratio better is the performance of the bank.

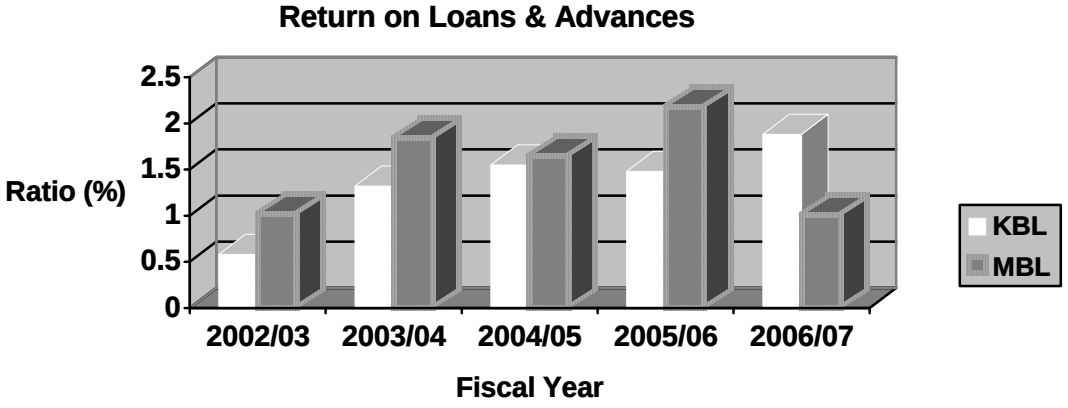
Table No. 4.6

Return on Loans & Advances (%)

(Rs. in Millions)

Fiscal Year	KBL			MBL		
	Net Profit	**Loan & Advances**	**Ratio (%)**	**Net Profit**	**Loan & Advances**	**Ratio (%)**
2002/03	12.47	2137.59	0.58	15.31	1495.00	1.02
2003/04	48.70	3697.98	1.32	46.69	2541.00	1.84
2004/05	87.88	5681.01	1.55	84.87	5130.00	1.65
2005/06	103.70	7007.78	1.48	134.00	6146.58	2.18
2006/07	170.26	9062.43	1.88	74.08	7326.00	1.01
		Mean	**1.36**		**Mean**	**1.54**
		S.D.	**0.43**		**S.D.**	**0.46**
		C.V.	**31.57%**		**C.V.**	**29.87%**

Source: Annual Reports



The above table and chart exhibits the ratio of return on loans and advances of both KBL and MBL for past 5 years. The figure represented in the above chart shows that the MBL has the higher ratio. The ratio of both the banks is in fluctuating trend whereas the lending is increasing over the years. The net profit of KBL is in increasing trend but, of the MBL is fluctuating. The average ratio for

5 years of KBL and MBL is 1.36 % and 1.54 % respectively. This shows that MBL has better return than KBL. The standard deviation of KBL and MBL for the study period is 0.43 % and 0.46 % respectively. Similarly, the coefficient of variation of KBL and MBL is 31.57% and 29.87 % respectively. These two figures indicate that the deviation of MBL and the variation of KBL return percentage are more volatile than KBL and MBL respectively, which also signifies the higher risk. From this, it can be said that MBL is in better position than KBL.

g. Security- wise Lending of KBL and MBL

Security wise lending refers to the lending of bank to the client's against various collateral. Since collateral is also key aspect 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 Fixed asset and Immovable properties. Banks can lend even without collateral to the trustworthy customers. The analysis of security wise lending is as below,

1. 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 bank risk on the basis of collateral. More liquid the collateral, more are the chances of risk to the bank. Here, security wise lending of KBL includes 12 types of securities, including lending without collateral. Due to unavailability of data only four years calculation is done.

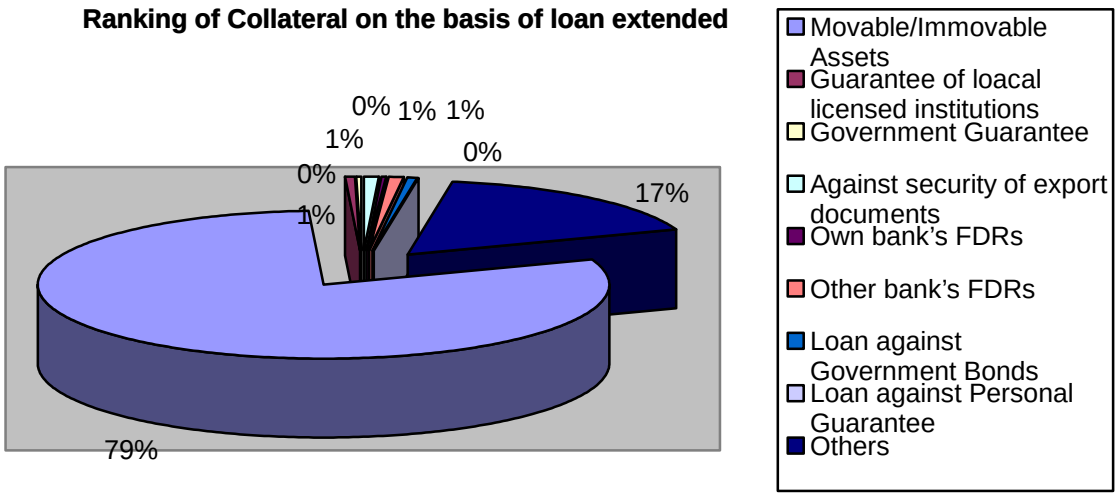


Table No. 4.7

Ranking of KBL Collateral on the basis of amount of loan extended

(Rs. In millions)

S. No.	Security against lending	Average Lending Against Each Collateral	Rank
1	Movable/Immovable Assets	5074.86	**1**
2	Guarantee of local licensed institutions	34.37	**5**
3	Government Guarantee	10.53	**8**
4	Guarantee against internationally rated bank	-	**-**
5	Against security of export documents	65.74	**3**
6	Own bank's FDRs	11.10	**7**
7	Other bank's FDRs	58.05	**4**
8	Loan against Government Bonds	33.84	**6**
9	Counter Guarantee	-	**-**
10	Loan against Personal Guarantee	4.52	**9**
11	Others	1069.39	**2**
12	Without collateral	-	**-**
	Total	**6362.4**	

Source: Annual Reports (See Annex I (A) for details)

Above table and chart exhibits the average lending of KBL against different securities. From above it is clear that over the four years the KBL has extended the credit mostly against the Movable/ Immovable Assets. The average lending against the movable/ non- movable property is 5074.86 million, which is the highest among the lending against all securities. The bank has not granted any loan without collateral, which is a good sign of lending practice. The bank does not have lending against the internationally rated bank, counter guarantee etc .The bank has extended least credit against loan against personnel guarantee which is ranked in the 9^{th} position on the basis of amount of lending. The bank also has been granting loan against more liquid and secured collateral such as own bank's Fixed Deposit Receipt (FDR) and other banks FDR, which is ranked 7th and 4th respectively. Besides, the above-mentioned collateral, the bank has also granted credit against other collaterals, which is ranked 2nd in position. However, the large portion of loan has been granted against the movable/Immovable Assets.

2. Security- wise Lending of MBL:

This analysis will help to identify the various types of securities on the basis of which loans have been provided by MBL. This also assists to analyze bank risk on the basis of collateral. More liquid the collateral, more are the chances of risk to the bank. Here, security wise lending of MBL includes 12 types of securities, including lending without collateral. Due to unavailability of data only three years calculation is done.

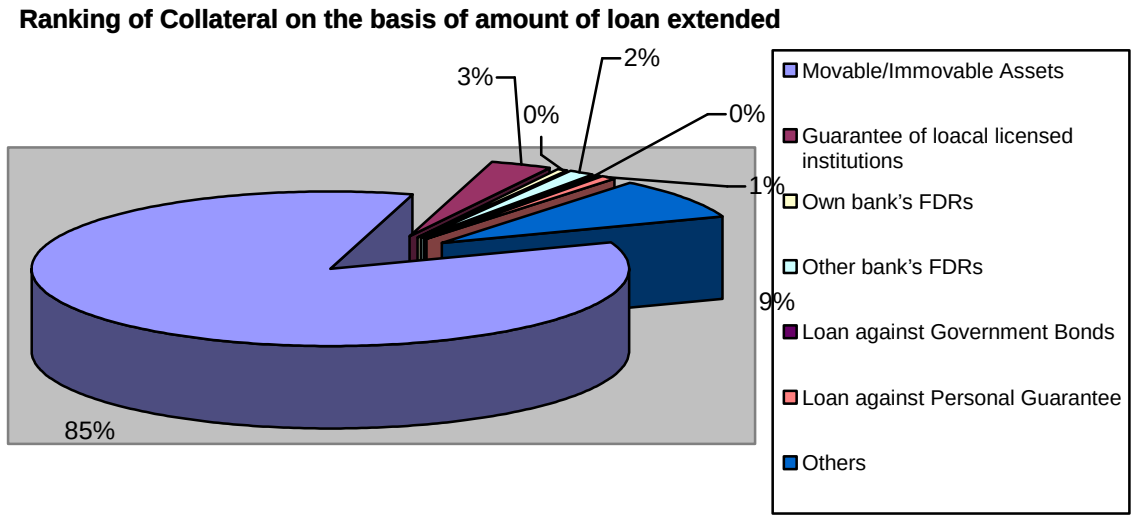
Table No. 4.8

Ranking of MBL Collateral on the basis of amount of loan extended

(Rs. in millions)

S No.	Security against lending	Average Lending Against Each Collateral	Rank
1	Movable/Immovable Assets	5266.9	**1**
2	Guarantee of local licensed institutions	213.66	**3**
3	Government Guarantee	-	**-**
4	Guarantee against internationally rated bank	-	**-**
5	Against security of export documents	-	**-**
6	Own bank's FDRs	23.71	**6**
7	Other bank's FDRs	100.18	**4**
8	Loan against Government Bonds	2.29	**7**
9	Counter Guarantee	-	**-**
10	Loan against Personal Guarantee	61.54	**5**
11	Others	532.63	**2**
12	Without collateral	-	**-**
	Total	**6200.91**	

Source: Annual Reports (See Annex I (B) for details)



From above table and chart, the loan extended against the various securities is presented along with the ranking on the basis of amount of loan extended. The above chart depicts that MBL has extended loan against 7 Securities. MBL has granted the highest amount of loan against the Movable/ Immovable Assets, the average lending against this collateral for three years is Rs. 5,266.9 million. Likewise, the average loan against the other securities above mentioned is Rs. 532.63 million, which is ranked 2nd. The loan granted against the guarantee of local licensed institutions, other bank's FDR, own bank's FDR is ranked 3rd, 4th & 6th respectively. The bank has granted least amount of loan against Personal Guarantee, loan against government bond and own bank's FDRs.

KBL and MBL have not extended any loan without collateral. If both the banks would have granted loan without collateral, the banks would have faced higher risk because of two reasons.

- The bank would have to make 100 % provision for this loan, which decreases the bank's profit.
- In case of default, the bank would have suffers losses of the total amount of loan, as there is no collateral to cover it.

h. Risk Weighted Lending Analysis

Risk Weighted lending refers to weight provided to the bank loan according to the level of risk. While risk level of the loan is categorized on the basis of the collateral, the lending against own bank's fixed deposit receipt and government securities are considered as risk free lending. Similarly, the loan against other banks fixed deposit receipt, 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

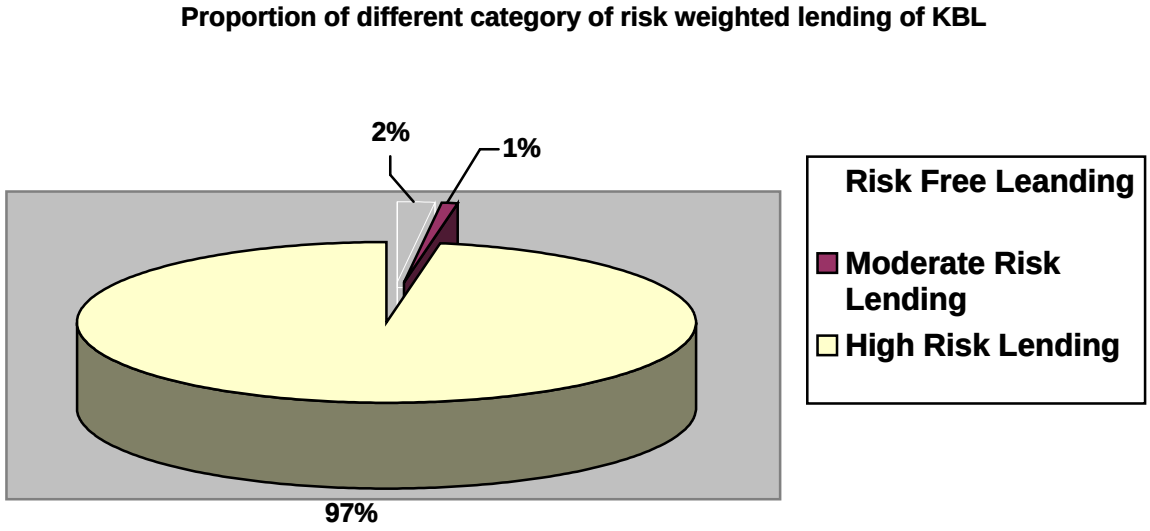
higher the risk free and moderate level lending, the lower is the credit risk of the bank and vice versa. The loan has been categorized on the basis of NRB Risk weighted Asset basis. The proportion of different category of risk weighted lending of both banks is presented below:

Table No. 4.9

Proportion of different category of risk weighted lending of KBL

	Weighted			
Year	**Risk free lending to Total Loan**	**Moderate risk lending to total loan**	**High risk lending to total loan**	**Total(%)**
2002/2003	2.62	1.13	96.25	100
2003/2004	3.62	0.86	95.52	100
2004/2005	0.77	0.89	98.34	100
2005/2006	2.88	0.31	96.81	100
2006/2007	0.24	0.94	98.82	100
Average	2.026	0.826	97.148	100

Source: Annual Reports



Above table and chart 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 fiscal year 2006/07. The bank has extended 2.62, 3.62, 0.77, 2.88 and 0.24 % of total lending against the risk free collateral (i.e. own banks FDRs and Government bills) in fiscal year 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. Likewise the bank has extended 1.13, 0.86, 0.89, 0.31 and 0.94 percent of total loan against the moderate level risk collateral in the fiscal year 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 respectively. In five years, the bank has made lower amount of high- level risk lending (i.e. 95.52 %) in fiscal year 2003/04. The average lending in 5 years on risk free, moderate level and high risk level lending is 2.026%, 0.826 % and 97.148 % respectively.

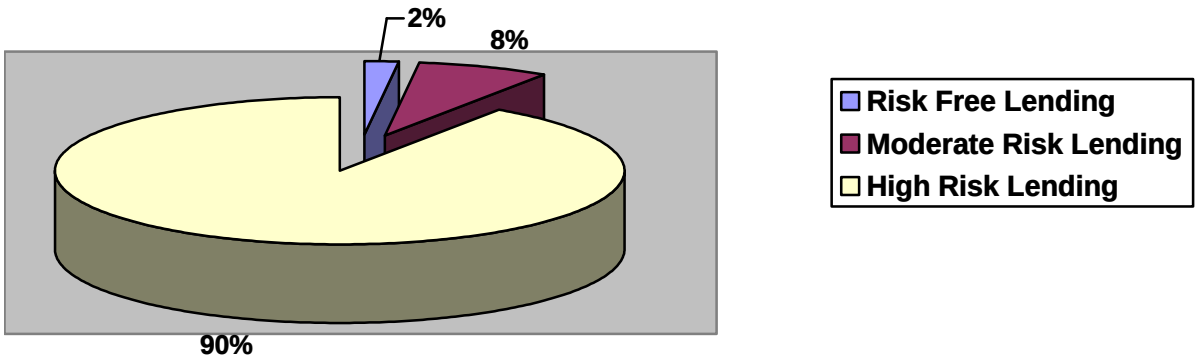
Table No. 4.10

Proportion of different category of risk weighted lending of MBL

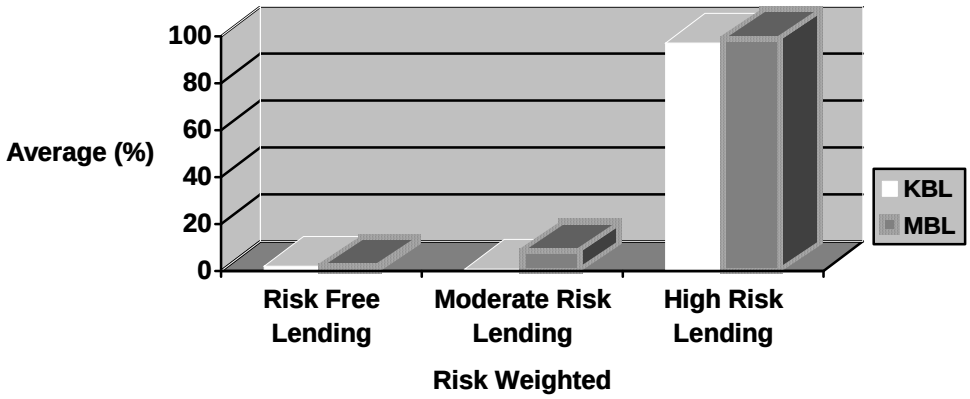
	Weighted			
Year	**Risk Free Lending to Total Loan**	**Moderate risk lending to total loan**	**High risk lending to total loan**	**Total(%)**
2002/2003	0.1	-	99.9	100
2003/2004	0.04	-	99.96	100
2004/2005	0.25	-	99.75	100
2005/2006	6.97	13.57	97.94	100
2006/2007	2.56	28.82	96.78	100
Average	1.984	8.478	98.86	100

Source: Annual Reports

Proportion of different category of risk weighted lending of MBL



Above table and chart exhibits the 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 0.1, 0.04, 0.25, 6.97 and 2.56 % of total lending against the risk free collateral (i.e. own banks FDRs and Government bills) in fiscal year 2002/03, 2003/04, 2004/05, 2005/06 and 2006/07 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 2005/06 and 2006/07, which is 13.57 % and 28.82 % respectively. In five years, the bank has made lower amount of high-level risk lending (i.e. 96.78 %) in fiscal year 2006/07. The average lending in 5 years on risk free, moderate level and high risk level lending is 1.984 %, 8.478 % and 98.86 % respectively.



From the above data, 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 lending. It can also be said that MBL has been providing more loan against own & other banks FDRs and government bills than KBL. This indicates that MBL has less risk in lending than KBL.

i. 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. It is because when there is a problem or crises in that particular sector, it will result in a significant loss to the bank. The proportion of sector wise lending to total loan has been presented in table below:

Table No. 4.11

Credit Concentration on different Sector on fiscal year 2006/07

Sector	**KBL (%)**	**MBL (%)**
Agriculture	3.30	0.73
Mine	2.91	0.78
Manufacturing	18.46	20.33
Construction	10.13	7.16
Metal and Electric Products	2.05	5.19
Transport equipment	5.15	1.44
Transport, communication and public utilities	2.11	10.44
Whole Seller & Retailer	8.35	20.67
Finance Insurance & Real Estate	9.6	9.77
Service Industries	8.80	8.01
Consumer Loan	6.38	0.51
Local Government	0	0
Others	22.69	14.41
Total	**100**	**100**

Source: NRB, Banking & Financial Statistics 2007 (see Annex I (C) for detail)

From the Table, it is found that KBL and MBL has extended more than 10 % of their total loan in 3 sectors and 4 sectors respectively. Similarly, KBL & MBL have invested highest of 22.69 % and 20.67% of total loan in others and whole seller &retailer sector respectively. KBL has extended least credit in Metal & Electric Products and Transport, Communication & Public utilities sector. Whereas MBL has extended its least credit in Consumer Loan and Agriculture sector. Loan to local government is the neglected area in the case of both the banks. It is also clear that credit concentration on single sector of KBL is more than that of MBL. This indicates that KBL has higher risk concentration on other and manufacturing sector, as the exposure on this sector is 22.69 % and 18.46 % of total loan respectively.

j. Sector- wise Loan to Core Capital

This is the ratio between loan extended by bank in a sector and core capital. Core capital includes share capital, retained earnings, general reserve, capital adjustment fund, non redeemable preferred stock etc. The higher the ratio a bank has, the higher will be the risk to the bank and vice versa. According to NRB directive no 3 of Unified Directive 2005, if the loan exposure on single sector is more than 50 % of core capital, it needs to be verified on quarterly basis since there is an existence of the concentration risk. Similarly, if there is a single sector loan concentration of more 100 % of core capital, it needs to be approved by the board of directors. The core capital of KBL and MBL is Rs. 1019.893 million and Rs. 982.577 million respectively in the fiscal year 2006/07.

Table No. 4.12

Sector- wise loan to Core Capital in fiscal year 2006/07

(Rs. In millions)

S.N	SECTOR	Sector-wise Loan Of KBL	Sector-wise loan to Core Capital (%)	Sector-wise Loan Of MBL	Sector-wise loan to Core Capital(%)
1	Agriculture	299.5	29.36	54	5.49
2	Mine	263.3	25.82	57.1	5.81
3	Manufacturing	1627.8	159.6	1488.8	151.52
4	Construction	918	90.01	524.2	53.35
5	Metal and Electric Products	185.9	18.23	380	38.67
6	Transport equipment	466.4	45.73	105.6	10.75
7	Transport, communication and public utilities	191.5	18.78	764.3	77.78
8	Whole Seller & Retailer	756.4	74.16	1513.6	154.04
9	Finance Insurance & Real Estate	870.2	85.32	715.1	72.78
10	Service Industries	797.2	78.16	586.6	59.7
11	Consumer Loan	578.1	56.68	37.2	3.788
12	Local Government	0	0	0	0
13	Others	2056.6	201.65	1054.8	107.35
	Total		**883.5**		**741.03**

Source: NRB, Banking & Financial Statistics, Mid July 2007

Above table exhibits the percentage of loan on single sector to core capital of KBL and MBL in fiscal year 2006/07. The table also depicts the ratio KBL has

crossed, which is 50 % in 4, 8, 9, 10 and 11 sectors. Out of them, the ratio of KBL has crossed 100 % in 3 and 13 sectors. Whereas in MBL, sectors 4, 7, 9 and 10 has crossed it's 50% level. Out of them, the ratio of MBL has crossed 100% in sectors 3, 8 and 13. The above table indicates that KBL has higher concentration risk than MBL as KBL has extended more loans in few sectors than MBL. KBL and MBL has higher ratio in other sector and in whole seller and retailer sector respectively, which is 201.65% and 154.04% respectively.

k. Correlation Analysis

1. Correlation between Loan Loss Provision (LLP) and Loans and Advances (L&A):

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

Table No. 4.13

Correlation between LLP and Loans and Advances

Banks	**Correlation Coefficient (r)**	**Probable Error (P.E.)**	**6 * P.E.**
KBL	0.984	0.0097	0.0579
MBL	0.905	0.0546	0.3276

(See Annex I (D) for details)

Above table explains the relationship between loans and advances and LLP. Correlation coefficient of KBL is 0.984, which means that the LLP is highly correlated with loans and advances. It means that the bank's LLP will increase with the increase in Loans and Advances. Similarly, the

correlation coefficient of MBL is 0.905, which also shows that there exists positive correlation between the LLP and Loan and Advances.

The probable error (multiplied by 6), which is used to test the significance of calculated correlation coefficient, of both KBL and MBL is 0.0579 and 0.3276 respectively. The Probable Error (multiplied by 6) of both banks is less than the correlation coefficient. Therefore it can be said that the correlation coefficient value is significant.

2. Correlation between Loan Loss Provision and Non-performing Loan:

This correlation indicates the relationship between LLP and NPL. How a unit increase in NPL effects the LLP is exhibited by this correlation. NPL has been treated as an independent variable, whereas the LLP a dependent variable.

Table No. 4.14

Correlation between LLP and NPL

Banks	**Correlation Coefficient (r)**	**Probable Error (P.E.)**	**6 * P.E.**
KBL	0.946	0.032	0.1902
MBL	0.809	0.104	0.624

(See Annex I (E) for details)

The above table exhibits correlation between LLP and NPL of two commercial banks. The correlation between LLP and NPL of KBL and MBL are positive, which indicates that the LLP of both the banks changes with the change in NPL i.e. 0.946 and 0.809. The probable error multiplied by 6, i.e. 0.1902 and 0.624 of KBL and MBL respectively, which is used to test the significance of correlation coefficient, is also less than the correlation coefficient, which means that the value of correlation coefficient is significant.

4.2.2. Organizational Structure for Credit Risk Management

Since, credit risk has the highest proportion of risk in banking sector, banks should have a well- defined management committee to analyze and manage the credit risk. For handling the credit function of bank, KBL and MBL have credit department headed by the credit manager. The credit manger will take the credit decision to certain extent as per bank's policies. After the decision made by the credit manager, the file is forwarded to the CEO and the decision is made by the CEO or sometimes by the Board of Directors if the bank has to extend credit to single borrower above 25 % of fund based and 50 % of non fund based loan. For effective credit risk management, KBL and MBL have separate Committees, which monitors the risk associated with the lending practice and these develop strategies and plans to minimize the risk.

a. Kumari Bank Ltd (KBL):

KBL staff states that Board of Directors of KBL will have the overall responsibility for formulating policies on Risk Management and the ultimate authority for deciding the overall risk monitoring and management.

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 risk including credit risk. 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.

In KBL all the credit activities is governed by the Credit Policies Guidelines and the corporate credit and retail department perform handling of credit functions. These departments are headed by the Senior Manager and Manager.

Likewise KBL has legal department, which handles all the legal issues before extending credit to the clients. The bank also has the Credit Administration Department, which monitors all the credit documentation and performance of the credit client. This department has responsibility to monitor the credit client once the credit department has extended the loan.

Likewise, the bank also has the risk assessment department, concerned with analysis of the risk factor while extending credit. The main function of this department is to analyze different risks of the proposed credit client and have an authority to decide about credit granting. Further for timely recovery of the loans extended by the bank, KBL also has the Recovery department responsible for tracking the customers and their repayment.

b. Machhapuchchhre Bank Ltd (MBL):

MBL staff states that a special Credit Committee exists for formulating credit policies in the bank. Besides, this committee also takes a credit decision 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 etc.

In MBL, all the credit decision is governed by the Credit Policies Guidelines. Under the management level, all the credit decision is 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 documentation part. There is also a credit administration department, which handles all the administrative aspect of credit such as monitoring credit, recovery etc.

4.2.3 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 experiences 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 related to the broad areas of concentrations, credit processing, and market- and liquidity- sensitive credit exposures.

a. Credit Concentration:

Concentrations are the single 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:

- **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.
- **Concentrations based on common or correlated risk factors** reflect subtler or 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.

b. Credit Process Issues:

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.

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.

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.

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.

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.

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.

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.

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 consumers 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.

More generally, many credit problems reflect the absence of a thoughtful consideration of downside scenarios. In addition to the business cycle, borrowers may be vulnerable to changes in risk factors such as specific commodity prices, shifts in the competitive landscape and the uncertainty of success in business strategy or management direction. Many lenders fail to "stress test" or analyze the credit using sufficiently adverse assumptions and thus fail to detect vulnerabilities.

c. Market and Liquidity- Sensitive Credit Exposures:

Market and liquidity- sensitive exposures pose special challenges to the credit processes at banks. Market- sensitive exposures include foreign exchange and financial derivative contracts. Liquidity- sensitive exposures include margin and

collateral agreements with periodic margin calls, liquidity back-up lines, commitments and some letters of credit, and some unwind provisions of securitizations. The contingent nature of the exposure in these instruments requires the bank to have the ability to assess the probability distribution of the size of actual exposure in the future and its impact on both the borrower's and the bank's leverage and liquidity.

4.2.4 Analysis of Primary Data

Under the analysis of primary data, a questionnaire and personal interview has been conducted to the concerned departmental staffs 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:

Regarding the proportion of credit risk, 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.

Regarding the single sector lending, 8 staffs of KBL has responded that KBL can lend 0-10% of total loan on single sector, where as 2 have responded that it can lend 10-20 % of total loan in single sector. Likewise, out of total 10 staffs of MBL, 6 have agreed that the bank can lend 0-10 % of total loan, where as 1 has agreed that the bank can lend 20- 30 % of total loan and rest have agreed on 10-20% of total loan. Regarding credit rating system, all 20 staffs have answered that both banks have rating system for the credit client. The ranking of different characteristics while granting credit has been made on the basis of the majority of the ranks for each attribute given by the respondents.

Table No. 4.15

Ranking of different characteristic while lending

Attributes	**KBL**	**MBL**
Character	1	1
Collateral	2	4
Capital	5	3
Condition	4	5
Capacity	3	2

From above, it is clear that the 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. Regarding ranking of preference on sector wise loan, following responses have been made by the staffs of KBL and MBL.

Table No. 4.16

Ranking of Sector for lending

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

From above, it is clear that KBL prefers Manufacturing, Real State, Service Industry, Consumer loans, Agriculture and mine & minerals in first, second, third, fourth, fifth, and sixth respectively. Both MBL and KBL prefer real estate in second priority. The MBL takes the consumer loans and service industry in fourth and third priority. Both KBL and MBL have similar ranking for manufacturing, real state, service industry and agricultural sectors. Both the banks would like to invest more in the manufacturing sector.

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.

When asked about the effect of present loan classification and provisioning directive on the shareholders of the bank, 100 % of the respondents think the shareholders will enjoy lesser dividend and will have their EPS decreased however everyone believes that is only for short term.

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.

4.2.5 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 No. 4.17

Hypothesis test regarding the ranking of sector of lending

Bank	**Agriculture**	**Mines and Minerals**	**Real Estate**	**Manufacturing**	**Consumer loans**	**Service Industry**	**Total**
KBL	39	31	63	70	55	58	**316**
MBL	32	55	58	66	41	60	**312**
Total	**71**	**86**	**121**	**136**	**96**	**118**	**628**

Source: field study (See Annex II (F) for detail)

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

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

Calculation of expected frequencies (E):

Expected frequency = $\frac{RT \times CT}{N}$

Where,

RT = Row Total CT = Column Total

N = Total No. of Observation

Similarly,

R1C1 = 35.73 R2C1 = 35.27

R1C2 = 43.27 R2C2 = 42.73

R1C3 = 60.89 R2C3 = 60.11

R1C4 = 68.43 R2C4 = 67.57

R1C5 = 48.31 R2C5 = 47.7

R1C6 = 59.4 R2C6 = 58.62

Test of Chi- Square:

Observed Frequencies (0)	**Expected Frequencies** (E)	**O - E**	**(O – E)²**	$\frac{(O-E)^2}{E}$
39	35.73	3.27	10.69	0.299
31	43.27	-12.27	150.55	3.48
63	60.89	2.11	4.4521	0.73
70	68.43	1.57	2.46	0.36
55	48.31	6.69	44.76	0.93
58	59.4	-1.4	1.96	0.33
32	35.27	-3.27	10.7	0.303
55	42.73	12.27	150.55	3.52
58	60.11	-2.11	4.45	0.74
66	67.57	-1.57	2.46	0.36
41	47.7	-6.7	44.89	0.94
60	58.62	1.38	1.90	0.325
Total				**12.317**

Test Statistics:

(Calculated)

$\chi^2 = \sum \frac{(O-E)^2}{E}$ = 12.317

Degree of Freedom (d.f):

d.f. = (R-1) (C-1)

= (2-1) (6-1)

= 5

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

Decision**:-** Since tabulated value of χ^2 is less than calculated value of χ^2 (i.e. 11.07 < 12.317), null hypothesis is rejected which means that there is 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 No. 4.18

Hypothesis test regarding the ranking of various factors to be considered, while lending

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

Source: Field Study (See Annex II (G) for detail)

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

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

Calculation of expected frequencies (E): Expected frequency = $\frac{RT \times CT}{N}$

Where,

RT = Row Total CT = Column Total

N = Total No. of Observation

Similarly,

R1C1 = 70.66	R2C1 = 62.78
R1C2 = 52.08	R2C2 = 51
R1C3 = 50.05	R2C3 = 48.94
R1C4 = 44.5	R2C4 = 43.50
R1C5 = 58.15	R2C5 = 56.85

Test of Chi- Square:

Observed Frequencies (0)	Expected Frequencies (E)	(O-E)	$(O-E)^2$	$\frac{(O-E)^2}{E}$
63	70.66	-7.66	58.67	0.83
58	52.08	5.92	35.04	0.67
45	50.05	-5.05	25.5	0.51
48	44.5	3.5	12.25	0.28
55	58.15	-3.15	9.92	0.17
64	62.78	1.22	1.48	0.024
45	51	-6	36	0.71
54	48.94	5.06	25.6	0.523
40	43.5	-3.5	12.25	0.28
60	56.85	3.15	9.92	0.174
Total				**4.171**

Test Statistics:

(Calculated)

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

Degree of Freedom (d.f):

d.f = (R-1) (C-1)

= (2-1) (5-1)

= 4

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

Decision: - Since tabulated value of x2 is greater than calculated value of x2 (i.e. 9.49 > 4.171), 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 Market Risk

Market risk refers to the business risk, which arises due to the different market factors. In another word, it is the organizational risk of losing its market and value due to changes in market variables. This risk consists of liquidity risk and interest rate risk, which are presented below:

4.3.1 Liquidity Risk

Liquidity refers to degree to which an asset or security can be bought or sold in the market without affecting the asset's price. In another word, it is the ability to convert an asset to cash quickly, also known as "marketability".

Liquidity risk can best be described as the risk of a funding crisis. While some would include the need to plan for growth and unexpected expansion of credit, the risk here is seen more correctly as the potential for a funding crisis. Such a situation would inevitably be associated with an unexpected event, such as a large charge off, loss of confidence, or a crisis of national proportion such as a currency crisis.

Here, the attempt has been made to analyze how the asset and liabilities of commercial banks have been managed according to their maturity period to

analyze the funding gap or liquidity crises situation. Similarly, the analysis of banks liquid asset as well as Cash Reserve Ratio has been performed as well.

The key tools for analyzing the liquidity risk are:

a. Gap Analysis (for liquidity risk):

Gap Analysis is the process of analyzing the mismatch between asset and liabilities within various maturity periods. Under this measure, asset and liabilities are categorized into various groups as prescribed by the NRB Directive No 5. The main objective of this gap analysis is to identify the mismatch between asset and liabilities in different maturity periods. The higher the gap between asset and liabilities, the greater the liquidity risk and vice versa. Due to unavailability of data only four years data has been presented.

Table No. 4.19

Gap Analysis of Asset and Liabilities of KBL and MBL

(Rs. in millions)

Fiscal Year	**1- 90 Days**		**91-181 Days**		**181-270 Days**		**271-365 Days**		**More than 1 Year**	
	KBL	**MBL**	**KBL**	**MBL**	**KBL**	**MBL**	**KBL**	**MBL**	**KBL**	**MBL**
2003/04	263	3125	153	3886	-215	4203	241	-169	-181	-5143
2004/05	-256	203	-292	-512	1080	-169	1143	143	-872	-194
2005/06	-270	1920	584	2000	-512	3359	1412	-1597	-393	3965
2006/07	2237	2592	-643	4770	122	3397	1022	19553	-1776	-19492
Mean	**493**	**1960**	**-49**	**2536**	**119**	**2698**	**954**	**4483**	**-805**	**-5216**
S.D.	**1029**	**1101**	**462**	**2024**	**599**	**1689**	**435**	**8726**	**614**	**8850**

Source Annual Reports

The above table exhibits the net asset/ liabilities for different time interval of KBL and MBL. The positive figure indicates that the asset is more than that of

liabilities on the contrary the negative figure indicates that the liabilities are more than that of asset for each interval. From above, it is clear that the KBL has the negative net position (liabilities is more than the asset) in all time intervals except in 271- 365 days. Whereas the MBL has positive net position in short term interval and has negative net position in long interval. From this it can be said that the KBL has more problem of liquidity in short term interval compared to MBL. It is because to meet the short- term liabilities, the short time interval asset is not sufficient. So, to meet the short- term liabilities, KBL needs to borrow from the other banks. In MBL, since the short- term asset is more than that of liabilities, the bank does not have any liquidity problem. Both MBL and KBL have negative net position in time interval of more than 1 year. This indicates that both banks have long- term liabilities such as deposit and other liabilities higher than long term asset such as loan and advances, fixed asset etc.

The mean net position of KBL is Rs. 493.5 million, Rs -49.5 million, Rs 118.7 million, Rs 954.5 million and Rs -805 million in time interval 1-90 days, 91- 181 Days, 181-270 days, 271-365 days and more than 1 year respectively. Likewise the mean net position of MBL is Rs. 1960 million, Rs. 2536 million, Rs.2698 million, Rs. 4483 million, Rs -5216 million in time interval of 1-90 days, 91- 181 Days, 181-270 days, 271-365 days and more than 1 year respectively. The mismatch amount of KBL in time interval below 181 days is less than that of MBL, where as the MBL has less mismatch amount in the long-term maturity period. However, KBL has negative net gap in time interval below 181 days, where as MBL has positive net gap in the same period. In long term, the MBL has matched its asset liabilities nicely than that of KBL. This means the KBL is in more risky position than MBL in terms of meeting short-term liquidity.

Likewise, the standard deviation of KBL is Rs 1029 million, Rs 462 million, Rs 598.6 million, Rs 435 million, Rs 614 million in time interval of 1-90 days, 91-181 Days, 181270 days, 271-365 days and more than 1 year respectively. The Standard deviation of MBL is Rs.1101 million, Rs. 2024 million, Rs. 1689

million, Rs. 8726 million and Rs.8850 million in time interval of 1-90 days, 91-181 Days, 181-270 days, 271-365 days and more than 1 year respectively. This implies that the MBL net position has high level of deviation than MBL in all time buckets, which signifies the higher risk on MBL than KBL.

b. Current Ratio of KBL and MBL:

Current Ratio is the ratio between current asset and current liabilities. Current asset refers to all the assets, which has a maturity period less than 1 year and the current liabilities means all the liabilities less than 1 year. The current ratio indicates how much proportion of current assets has been financed by the current liabilities. If the current liabilities are lower than the current asset it means that the bank current asset has been financed by the long- term liabilities and capital. On the contrary, if the current ratio is very low it means the current liabilities are more than the current asset.

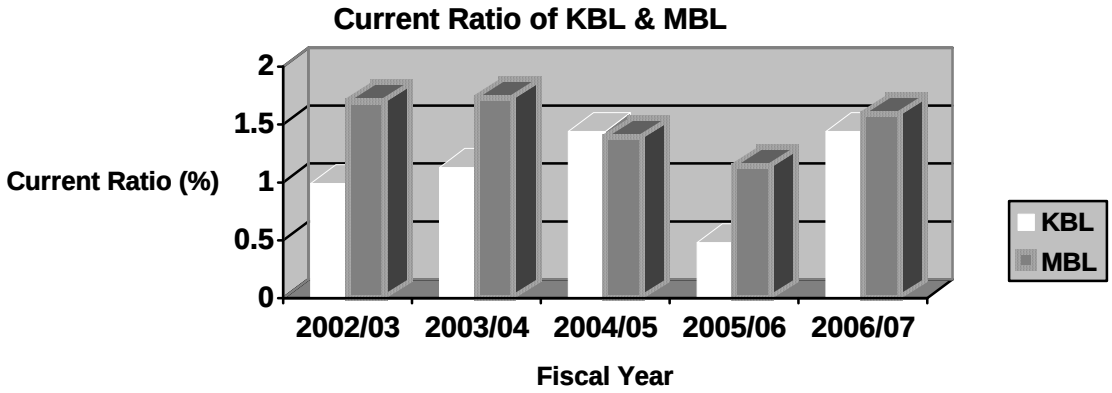
Table No. 4.20

Current Ratio of KBL and MBL

(Rs. In Millions)

Fiscal Year	**KBL**			**MBL**		
	CA	**CL**	**CR**	**CA**	**CL**	**CR**
2002/03	2194	2215	0.99	17932	10529	1.70
2003/04	3807	3366	1.13	26110	15064	1.73
2004/05	5496	3821	1.44	5502	3955	1.39
2005/06	3595	7363	0.48	45209	39527	1.14
2006/07	8940	6202	1.44	81374	51062	1.59
		Average	**1.09**		**Average**	**1.51**

Source: Annual Reports



Above table and chart exhibits the current ratio of KBL and MBL over 5 years. It is clear that the average current ratio of KBL and MBL is 1.09 and 1.51 respectively. This means that KBL has used most of current liabilities to finance the current assets where as MBL has also used current liabilities to finance the long-term asset. The lower current ratio of KBL means that the asset and the liabilities of KBL are matched adequately than MBL. On the contrary, the higher proportion of Current Ratio (CR) means that the MBL has higher liabilities than current asset.

c. Cash and Bank Balance to Total Asset Ratio:

Cash and Bank Balance to total asset ratio measures the proportion of total cash and bank balance on the total asset of the bank. This helps to measure how much liquid fund the bank has out of the total asset. Higher the ratio, the better the bank's liquidity position and vice versa. In other sense, the higher the cash and bank balance, the higher will be bank's idle cash, which reduces the banks profit. However, the bank should have to have enough liquid position to fulfill its liabilities. The cash and bank balance to total asset ratio of two banks is calculated below:

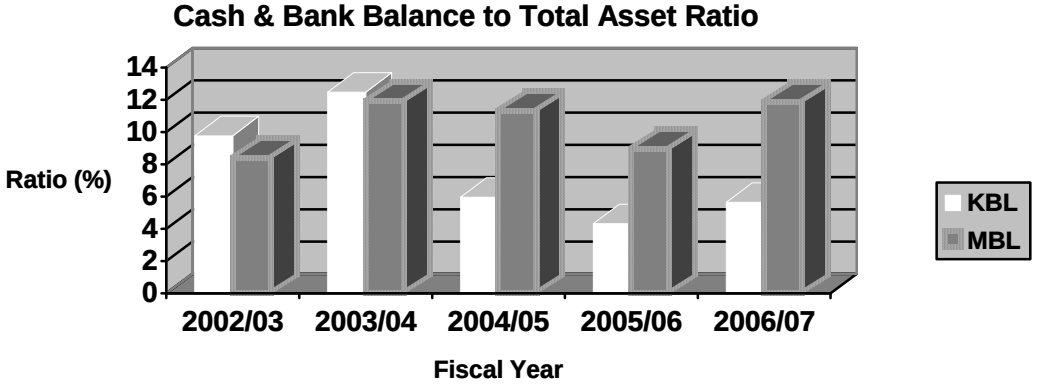
Table No. 4.21

Cash & Bank Balance to Total Asset Ratio

(Rs. in millions)

Fiscal Year	KBL					MBL
	Cash & Bank Balance	Total Asset	Cash & Bank Balance To Total Asset (%)	Cash & Bank Balance	Total Asset	Cash & Bank Balance To Total Asset (%)
2002/03	291.71	2986	9.77	201.72	2400	8.41
2003/04	685.48	5494	12.48	410.75	3449	11.91
2004/05	443.37	7438	5.96	731.13	6456	11.33
2005/06	389.63	9010	4.32	814.00	9070	8.97
2006/07	672.11	11918	5.64	1284.08	10808	11.88
		Mean	**7.63**		**Mean**	**10.5**
		S.D.	**9.96**		**S.D.**	**1.5**

Source: Annual Reports



Above table and chart exhibits the cash and bank balance to total asset ratio of KBL and MBL for 5 years. The ratio of KBL is the highest of 12.48 % in fiscal year 2003/04 and the lowest of 4.32% in the fiscal year 2005/06. On the other hand, the ratio of MBL is highest of 11.91 % and the lowest of 8.405 % in fiscal year 2003/04 and 2002/03 respectively. The ratio of both the banks is fluctuating. In the fiscal year 2006/07, the ratio of KBL is 5.64% where as MBL has ratio of

11.88%. The average ratio of KBL and MBL is 7.63% and 10.5 % respectively. This shows that the MBL has high amount of liquid fund such as cash and bank balance than the KBL. This means the MBL is in more liquid position than KBL, which also indicates the lower level of liquidity risk. The standard deviation of ratio of KBL and MBL is 9.96 and 1.5 respectively. This means that the fluctuation rate of cash and bank balance is lower in MBL than KBL. This indicates that the MBL has less variation in cash and bank balance out of total asset, which indicates the least risk.

d. Cash Reserve Ratio (CRR):

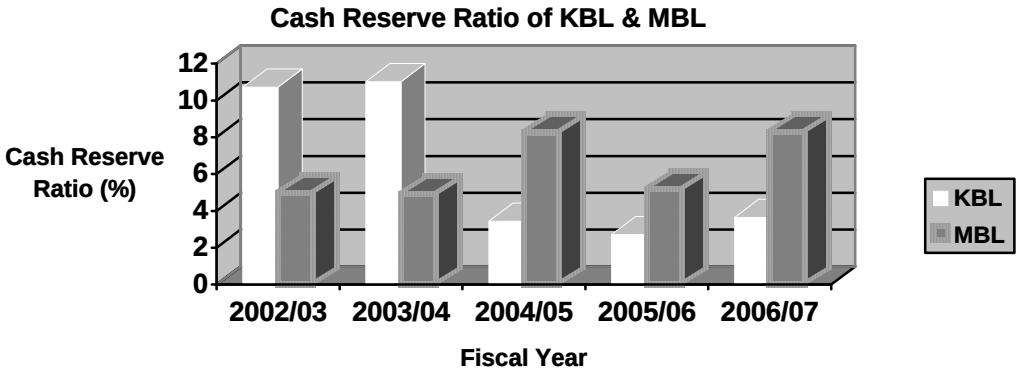
Cash Reserve Ratio refers to the portion of total deposit the commercial banks maintain in NRB. It is a statutory reserve that the bank should have to maintain in NRB. Higher CRR ratio means higher amount of bank fund is tied up in *NRB*, which means lower investment etc.

Table No. 4.22

Cash Reserve Ratio (CRR) of KBL and MBL

Fiscal Year	**KBL (in %)**	**MBL (in %)**
2002/03	10.72	4.98
2003/04	11.02	4.91
2004/05	3.44	8.27
2005/06	2.71	5.18
2006/07	3.65	8.29
Mean	**6.308**	**6.326**
S.D.	**3.8**	**1.6**
C.V.	**60.24**	**25.29**

Source: Annual Reports



Above table and chart exhibits the Cash Reserve Ratio of KBL and MBL from fiscal year 2002/03 to 2006/07. The CRR indicates the total amount of deposit of commercial banks in NRB. NRB prescribes CRR for the commercial banks each year. In fiscal year 2006/07, CRR is 5 %, which means that the bank has to maintain 5 % of total deposit in NRB. However, medium- term policy is to slash it down to 3%.

From above, it is clear that KBL has higher CRR in 2002/03 and 2003/04 than that of MBL. The CRR of KBL is the highest in fiscal year 2003/04, which means that KBL has kept more funds in NRB and also reflects its strong liquidity position. KBL has maintained more than 10 % CRR in fiscal year 2002/03 and 2003/04. In fiscal year 2004/05, 2005/06 and 2006/07 CRR of KBL is below the statutory measures (i.e. 5 %). On the contrary, the CRR of MBL is in fluctuating trend. The CRR of MBL is 4.98 % in fiscal year 2002/03 where as 8.29% in fiscal year 2006/07. The CRR of MBL in 2002/03 and in 2003/04 is 4.98% and 4.91 respectively, which is below the statutory requirement of 5 %. The mean CRR of KBL is 6.308 % with the standard deviation of 3.8 % where as the mean CRR of MBL is 6.326% with the standard deviation of 1.6%. From this, it is clear that the average CRR of MBL is higher than that of KBL, but the deviation is higher in case of KBL than that of MBL.

From above, it can be concluded that the KBL is in more liquid position than MBL. The more liquid position does the bank maintain, the more likely that the

bank can easily met its liabilities. However, higher liquidity is also associated with opportunity loss due to the idle cash balance. Besides, both banks have a short fall in CRR. KBL has shortfall of 2.71 % in fiscal year 2005/06, where as MBL has shortfall of in all fiscal year 2003/04.

4.3.2 Interest Rate Risk (IRR)

Interest rate risk refers to the risk of a bank, which arises due to changes in interest rate in the market. It is one of the important indicators of market risk. The changes in interest rate on both lending and deposit are equally risky and profitable for a bank. Increase in interest rate on deposit leads to increase cost of deposit and less profit for a bank and the increase in interest on loan leads to increase in profitability of a bank.

The comparative study of interest rate risk is presented as below by using different ratios.

a. Interest Income to Total Income:

This ratio indicates the proportion of interest income on total income of a bank. The higher the ratio does a bank maintain, the more the dependency of bank on interest income unveil, which indicates higher level of risk to the bank. On the contrary, lower ratio indicates that the bank has diversification on sources of income. Higher level of ratio also indicates the higher level of interest rate risk because the changes in interest rate on market will make significant impact on bank total income and net profit. The interest income to total income of both bank are presented below:

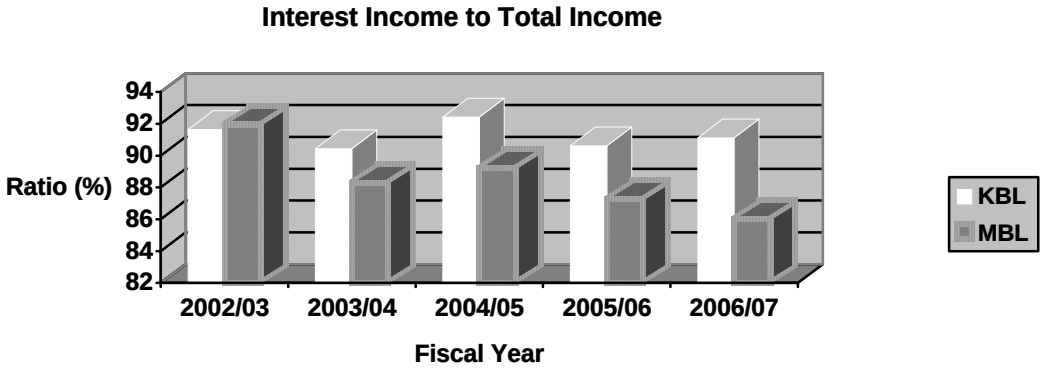
Table No. 4.23

Interest Income to Total Income of KBL and MBL

(Rs. In Millions)

Fiscal Year	KBL			MBL		
	Interest Income	Total Income	Interest Income to Total Income	Interest Income	Total Income	Interest Income to Total Income
2002/03	185.1	202.0	91.64	139.0	151.14	91.97
2003/04	310.2	343.0	90.44	215.2	243.67	88.32
2004/05	500.0	541.0	92.42	382.0	428.17	89.22
2005/06	605.5	668.2	90.62	563.4	645.61	87.26
2006/07	791.3	868.3	91.13	694.5	807.32	86.03
		Mean	**91.25**		**Mean**	**88.56**
		S.D.	**0.72**		**S.D.**	**2.01**
		C.V.	**0.79%**		**C.V.**	**2.27%**

Source: Annual reports



Above table and chart exhibits the interest income to total income of two commercial banks. The interest income to total income of KBL is in fluctuating trend. In fiscal year 2004/05, interest income to total income ratio is 92.42 %, which is the highest in five years. The ratio of MBL is also in fluctuating trend. The highest ratio is in fiscal year 2002/03 of

91.97 %. The mean ratio of KBL and MBL is 91.25 % and 88.56 % respectively. This ratio indicates that both banks are highly dependent on interest- based income, which shows the sign of high risk for both banks. Both banks have very least diversification on investment. The proportion of fee & commission based income is very low in these banks.

The standard deviation of ratio of KBL and MBL is 0.72 % and 2.01 % respectively. This shows that MBL has higher deviation on ratio than KBL. This higher deviation of MBL is mainly due to low ratio as compared to KBL.

b. Interest Expenses to Total Expenses:

This ratio indicates the proportion of interest expenses on total expenses of a bank. Higher ratio indicates that the bank has to pay high amount of interest expenses out of its total expenses, which means higher level of risk. On the contrary, lower ratio indicates that the bank has the diversification on its expenses. Higher level of ratio also indicates the higher level of interest rate risk because the changes in interest rate on market will make significant impact on bank's interest expenses, which will ultimately affect on total income and net profit. The interest expenses to total expenses of both banks are presented below.

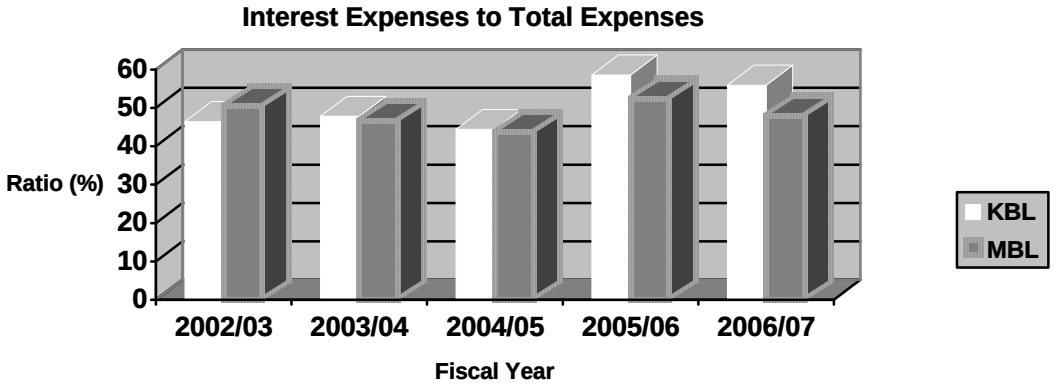
Table No. 4.24

Interest Expenses to Total Expenses of KBL and MBL

(Rs. In millions)

Fiscal Year	KBL			MBL		
	Interest Expenses	Total Expenses	Interest Expenses to Total Expenses	Interest Expenses	Total Expenses	Interest Expenses to Total Expenses
2002/03	93	202	46.4	76.2	151.14	50.4
2003/04	164	343	47.8	114	244	46.7
2004/05	240	541	44.4	187	428.17	43.7
2005/06	337	574.8	58.6	289	552	52.4
2006/07	397	710.6	55.9	398	830	48.0
		Mean	**50.5**		**Mean**	**48.22**
		S.D.	**5.7**		**S.D.**	**3**
		C.V.	**11.3%**		**C.V.**	**6.22%**

Source: Annual Reports



Above table and chart exhibits the interest expenses to total expenses of two commercial banks. The interest expense to total expenses of KBL is in fluctuating trend. In fiscal year 2005/06, the interest expenses to total expenses ratio is 58.6 %, which is the highest in five years. The ratio of MBL is fluctuating

over five years. The highest ratio is in fiscal year 2005/06 of 52.35 %. The mean ratio of KBL and MBL for 5 years is 50.5 % and 48.22 % respectively. This ratio indicates that the interest expense has higher proportion in KBL than in MBL. This implies that the changes in interest rate on deposit and borrowing will have higher impact on KBL than MBL. This produces the higher amount of interest rate risk to KBL than MBL.

The standard deviation of ratio of KBL and MBL is 5.7 % and 3 % respectively. This shows that KBL has higher deviation on average ratio than MBL. The Coefficient of Variation of KBL and MBL are 11.3% and 6.22 % respectively. This ratio indicates that KBL proportion of interest expenses on total expenses fluctuates more than that of MBL, which shows the sign of higher risk. This higher variation of KBL is due to the low ratio in 2004/05, when the bank has just started its operation and the interest expenses are lower than other operating expenses.

c. Gap Analysis (Interest Rate):

Gap Analysis, here, refers to the process of analyzing mismatch between rate sensitive and fixed rate asset and the liabilities. In other words, it is the process of identifying the net position between asset and liabilities of a bank. The higher the gap between assets and liabilities of a bank, the higher the risk does a bank have and vice versa. The gap analysis has been categorized as below:

1. Gap Analysis of Interest Rate Sensitive Asset and Rate Sensitive Liabilities (IRSA and IRSL);

Interest Rate sensitive asset and liabilities refers to such an asset/ liabilities, interest rates of which keep on changing in the market. Such types of assets includes the inter bank loan/ placement financial derivatives etc, the interest rate on which changes over night. Rate

sensitive liabilities includes inter bank borrowing etc. Gap refers to difference between IRSA and IRSL and gap analysis refers to the analysis of the gap between IRSA and IRSL. The bank has to bear higher losses if the gap is high (either positive or negative). The bank will not bear interest rate risk if the gap between IRSA and IRSL is zero. The gap analysis of IRSA and IRSL of KBL and MBL is presented below:

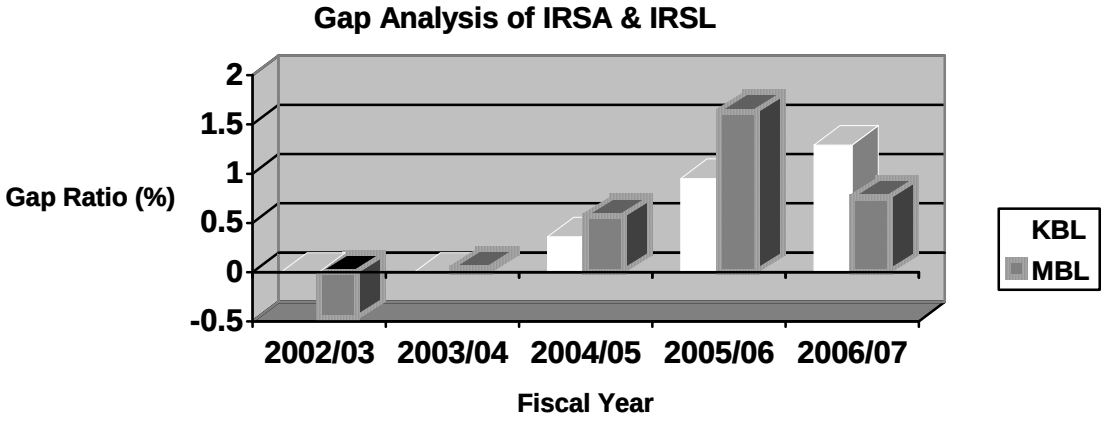
Table No. 4.25

Analysis of Gap of IRSA and IRSL of KBL and MBL

(Rs. In millions)

Fiscal Year	KBL				MBL			
	IRSA	IRSL	Gap	Gap Ratio	IRSA	IRSL	Gap	Gap Ratio
2002/03	11	0	11	0	-42.46	90	-132.46	-0.47
2003/04	33.4	0	33.4	0	4.22	102.2	-97.98	0.04
2004/05	145	402	-257	0.36	87.74	154	-66.3	0.57
2005/06	239	251.4	-12.4	0.95	215	132	83	1.63
2006/07	275.6	213	62.6	1.29	174.6	228.5	-54	0.76
		Mean	**-32.48**		**Mean**		**-53.55**	

Source: Annual Reports



Above table and chart exhibits the IRSA and IRSL of two commercial banks for 5 years. The table shows that both banks have high level of gap

in every year. But it is found that MBL and KBL has negative gap in most of the years. In fiscal year 2002/03 and 2003/04, KBL has zero Rate Sensitive Liabilities, where as MBL has negative IRSA in 2002/03. The average gap of KBL and MBL is (32.48) million and (53.55) million respectively. This average gap shows that MBL has nicely matched the IRSA and IRSL than KBL but, both have negative average gap that indicates interest rate risk. However, this low average gap is due to negative gap of MBL in almost all fiscal year except in fiscal year 2005/06. So, the mean gap will be misleading here to come to a conclusion. Therefore, it can be said that the both banks have high level of interest rate risk, as the mismatch between assets and liabilities seems to be very high in most of the years. However, if we see the latest gap position, the interest rate change will have different impact on these banks. KBL will suffer losses if the interest rate decreases and vice versa, whereas MBL will suffer losses if the interest rate increases and vice versa.

2. Gap Analysis of Fixed Interest Rate Asset/ Liabilities;

The gap here refers to the difference between fixed interest rate asset and fixed interest rate liabilities. The fixed interest rate asset refers to such asset of a bank, interest rate of which remains fixed for a certain period of time. The rate of interest on this type of asset normally remains constant for a long period. For example, the interest on term loan of a bank is constant for long period of time. Likewise, fixed interest rate liabilities (FIRL) refers to such liabilities of a bank, interest on which remains constant for certain period of time, though the market interest rises. For example, the fixed deposit of a bank, on which the interest remains constant till the maturity period. The gap ratio refers to the ratio between FIRA and FIRL. Higher gap ratio indicates that the bank has more FIRA than FIRL, which means that in future if the interest rate is to be increased,

the bank will earn profit and vice versa. Conversely, the negative gap or gap ratio of less than 1 indicates the bank has lower amount of fixed rate asset than fixed rate liabilities. In such a situation, the bank has to bear higher amount of losses if the interest rate is decreased & vice versa. The bank will not suffer any losses if the ratio is 1 and gap is zero. Here, four years data is used because of non-availability of data of fiscal year 2002/03.

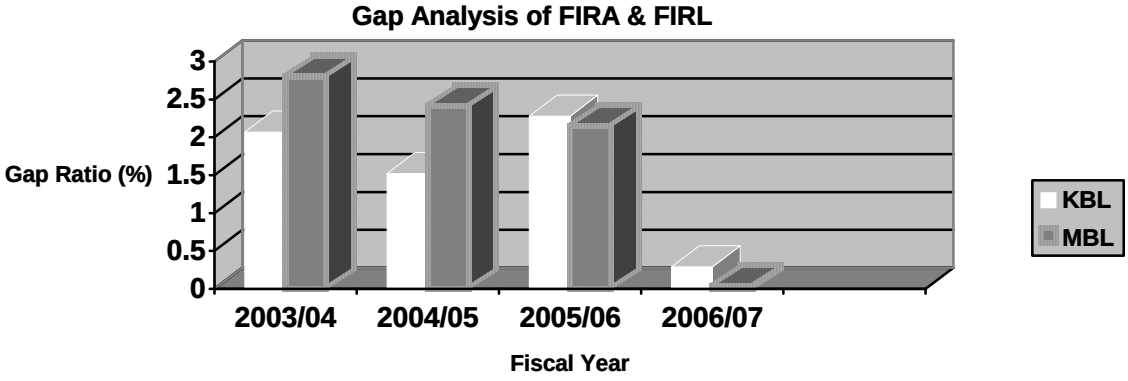
Table No. 4.26

Analysis of Gap of FIRA and FIRL of KBL and MBL

(Rs. In millions)

Fiscal Year	MBL				KBL			
	FIRA	FIRL	Gap	Gap Ratio	FIRA	FIRL	Gap	Gap Ratio
2003/04	25410	12273	13137	2.07	3614	1292	2322	2.80
2004/05	2612	1720	892	1.52	5554	2302	3252	2.41
2005/06	5956	2605	3351	2.28	6801	3163	3638	2.15
2006/07	7085	24126	-17041	0.29	115	2776	-2661	0.04
Mean			**84.75**	**1.54**	**Mean**		**1637.75**	**1.85**

Source: Annual report



Above table and chart exhibits the FIRA and FIRL of two commercial banks. The table shows that both banks have high level of gap in every year. The gap of KBL and MBL is negative in fiscal year 2006/07. The

KBL has the lowest gap of Rs. 23 million in fiscal year 2003/04, where as MBL has the lowest gap of Rs. 892 million in fiscal year 2004/05. The gap of KBL and MBL the banks is the highest in 2005/06 and 2006/07. This higher gap indicates the high level of interest rate risk of both banks. The mean gap ratio of MBL and KBL is 1.54 and 1.85 respectively. This shows that FIRA and FIRL of MBL are better than KBL, which indicates lower risk. The negative gap in both banks in recent year indicates that banks will suffer loss if the interest rate decreases and will earn profit if the interest rate increases.

3. Net Interest Margin;

Interest margin refers to the difference between interest received from bank's earning asset and the interest paid to bank's liabilities. The net interest margin (NIM) measures how much profit or loss bank will suffer if the interest rate on both interest sensitive asset and liabilities increases. The table below shows the NIM of both KBL and MBL, assuming that the market interest rates will changes by 1 percent. The four years data has been used for the analysis due to non-availability of the data of fiscal year 2002/03.

Table No. 4.27

Net interest margin of KBL and MBL

(Rs in millions)

Fiscal Year	**KBL**			**MBL**		
	RSA	**RSL**	**NIM**	**RSA**	**RSL**	**NIM**
2002/03	11.0	0	0.11	-42.5	90.0	-1.32
2003/04	33.4	0	0.33	4.2	102.2	-0.98
2004/05	145.0	402.0	-2.57	87.7	154.0	-0.66
2005/06	239.0	251.4	-0.12	356.4	154.0	2.02
2006/07	275.6	213.0	0.63	174.6	228.5	-0.54

	Mean	**-0.32**	**Mean**	**-0.29**

Where,

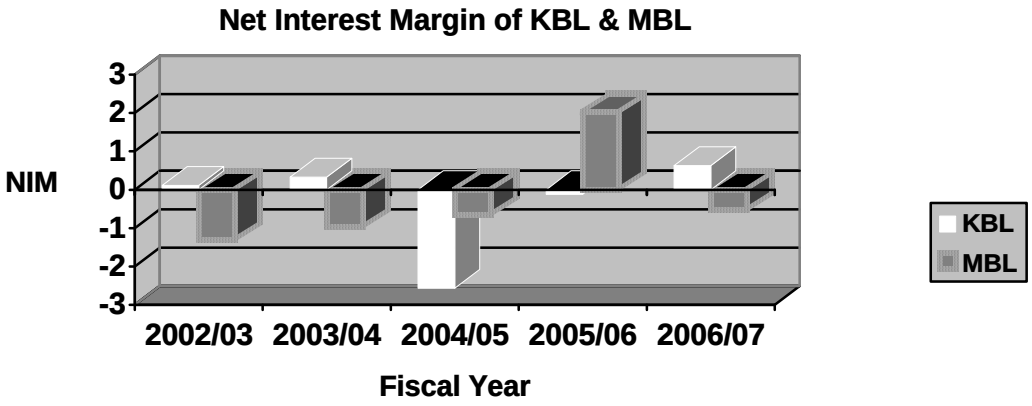
$\triangle$ NIM = (RSAs x$\triangle$rA) - (RSLs x$\triangle r_L$)

RSA = Rate Sensitive Assets

$\triangle r_A$= Changes on interest rate received on Rate Sensitive Asset

RSL = Rate Sensitive Liabilities

$\triangle$ r_L = Changes on interest rate paid on Rate Sensitive Liabilities



The above table and chart exhibits the net interest margin of KBL and MBL for 5 years. When the interest rate changes is assumed to be 1% in both RSA and RSL, the MBL shows the negative earning in most of the year, whereas KBL shows the losses in fiscal year 2004/05 and 2005/06. Negative earning is because of the bank having higher RSL than RSA. The average net interest margin of KBL and MBL is Rs. -0.32 and Rs. -0.29 million respectively. This shows that MBL has higher net interest margin than that of KBL.

d. Interest Risk Analysis According to NRB Directive no 5:

According to NRB directive no. 5, the interest rate risk is measured by calculating the net asset/ liabilities of the bank within the different time interval. While calculating the net position, cash and bank balance and non-interest bearing liabilities is excluded. The cumulative gap is calculated of each interval and the certain percent changes in interest rate (normally 1) has to multiply the cumulative gap to identify the net profit/ loss position of bank due to interest rate changes. The interest rate risk of both banks for fiscal year 2006/07 has been calculated as below.

Table No. 4.28

Interest Rate Risk Analysis of KBL for fiscal year 2006/07

(Rs. in millions)

Asset	**1-90 days**	**91-180 Days**	**181-270 Days**	**271-365 Days**	**Above 1 year**	**Total**
Investment in foreign banks	-	-	-	-	-	0
HMG Debt Papers	-	-	-	-	55	55
NRB Debt Paper	-	148	206	889	-	1242
Inter bank Loan	752	-	-	-	1	753
Loan	5133	800	203	138	2737	9011
Total Assets	**5885**	**948**	**409**	**1027**	**2793**	**11061**
Liabilities						
Borrowing	213	-	-	-	-	213
Saving Account	2828	-	-	-	4469	7297
Time Deposit	856	1591	286	5	34	2772
Debt Papers	-	-	-	-	-	0
Total Liabilities	**3897**	**1591**	**286**	**5**	**4503**	**10282**
Net Asset/ Liabilities	**1988**	**-643**	**122**	**1022**	**-1710**	**779**
Cumulative Gap	**1988**	**1345**	**1467**	**2489**	**779**	**779**

Net Profit/ Loss (cumulative gap IRC)	**4.97**	**3.36**	**3.67**	**6.23**	**1.95**	**1.95**

Source: Annual Report

Where,

IRC = Interest rate change (i.e. 1 % P.A and 0.25 % for each interval) above table shows the net profit/ loss position for each interval asset and liabilities of bank from changes in interest rate.

Above table shows the net profit/ loss position of asset and liabilities of each time interval of bank from changes in interest rate. The above table shows that KBL has negative gap in 91-180 days and above 1 year time interval. This shows that the bank has higher liabilities than asset in short term period and vice versa in long- term interval. The cumulative gap for total period is Rs. 779 million. The bank has no net loss. The overall profit of the bank is Rs 1.95 million if the interest rate changes by 1% in year that is divided into five periods. (i.e.0.25% in each period)

Table No. 4.29

Interest Rate Risk Analysis of MBL for fiscal year 2006/07

(Rs. in millions)

Asset	**1-90 days**	**91-180 Days**	**181-270 Days**	**271-365 Days**	**Above 1 year**	**Total**
Investment in foreign banks	2175.04	853.46	130.30	20.20	-	3179
HMG Debt Papers	7156.68	883.08	1472.96	-		9512.72
NRB Debt Paper	-	-	-	-	-	0
Inter bank Loan	6940	-	-	-	-	6940
Loan	16331.82	6312.31	2973.74	25530.14	22051.4	73199.39
Total Assets	**32603.54**	**8048.85**	**4577**	**25550.34**	**22051.4**	**92831.11**
Liabilities						
Borrowing	2885.04	-	-	-	-	2885.04
Saving Account	15659.17	-	-	-	22909	38568.15
Time Deposit	3748.34	3278.81	1179.63	5997.50	43882.7	94945.05
Debt Papers	-	-	-	-	-	0
Total Liabilities	**22292.55**	**3278.81**	**1179.63**	**5997.50**	**66791.6**	**136398.2**
Net Asset/ Liabilities	**10310.9**	**4770.04**	**3397.37**	**19552.84**	**-44740.3**	**-43567.1**
Cumulative Gap	**10310.9**	**15080.94**	**18478.31**	**38031.15**	**-6709.11**	**-50276.2**
Net Profit/ Loss (cumulative gap IRC)	**5.77**	**37.7**	**46.2**	**95.1**	**-16.77**	**-125.7**

Source: Annual Report

Where,

IRC = Interest rate change (i.e. 1% P.A and 0.25 % for each interval) above table shows the net profit/ loss position for each interval asset and liabilities of bank from changes in interest rate. The above table shows that MBL has negative gap in above 1 year. This shows that the bank has higher Liabilities than asset in above 1 year and vice versa in long- term interval. The cumulative gap for total period is Rs. (50276.24) million. The

bank would bear loss of Rs (125.7) million if the interest rate changes by 1 % in year, which consists of five periods. (i.e. 0.25% in each period.)

e. Interest Rate Spread:

The interest rate spread refers to the difference between weighted average interest on loan and advances and the weighted average interest on deposit. This interest rate spread also measures the profitability position of a bank. The higher spread does a bank have, the higher will be the profitability position of the bank because the bank has to pay less interest on deposits and will receive higher interest on loan and advances. Here, four years data is used because of non-availability of data of fiscal year 2002/03. The interest rate spread of two banks is presented as below:

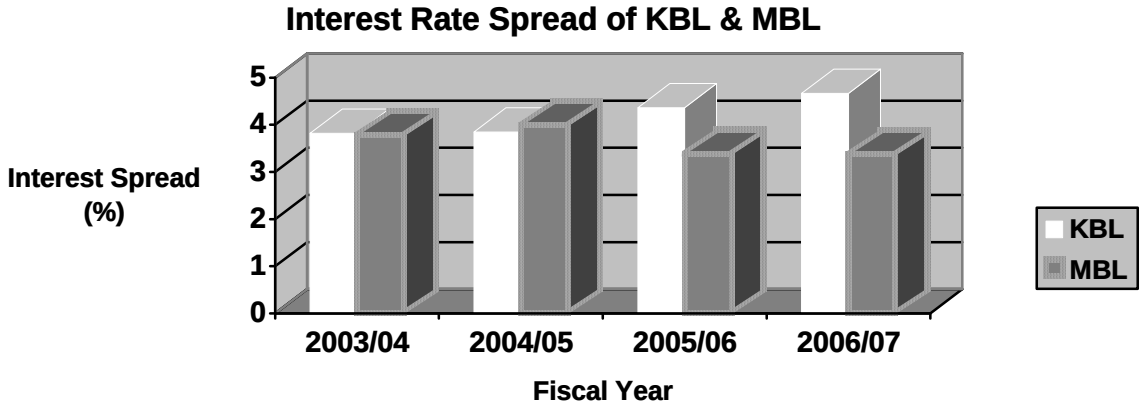
Table No. 4.30

Interest Rate Spread of KBL and MBL for 4 years

(Rs. In millions)

Fiscal year	**KBL**			**MBL**		
	Average Interest on Loan	**Average interest on Deposit (%)**	**Interest Spread (%)**	**Average Interest on Loan (%)**	**Average Interest on Deposit (%)**	**Interest Spread (%)**
2003/04	8.43	4.61	3.82	7.87	4.09	3.78
2004/05	8.33	4.48	3.85	8.71	4.72	3.99
2005/06	8.77	4.41	4.36	6.90	3.60	3.39
2006/07	8.54	3.88	4.67	7.47	4.10	3.37
Mean Spread			**4.17**	**Mean Spread**		**3.63**

Source: Annual Reports



Above table and chart exhibits the interest rate spread of two commercial banks. The interest rate on loans and advances and deposit of both KBL and MBL is fluctuating over the period. The interest rate on loan of KBL is the highest (i.e. 8.77 %) in fiscal year 2005/06. The weighted average interest on loan of MBL is the highest (i.e.8.71 %) in fiscal year 20004/05. The weighted interest rate on loan and advances of KBL is more than that of MBL in most of the years. The mean spread of both KBL and MBL is 4.17 % and 3.63 % respectively, which means that KBL has higher interest rate spread than MBL. This higher interest rate spread indicates that KBL has higher net interest income than MBL, which means higher profit. However, both banks have interest rate spread less than 5 % in every year.

4.4 Operation Risk

Risk refers to the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. The greater dependence on technology and centralized operations mean that banks are becoming increasingly exposed to operation risk. Though operation risk cannot be quantified, it has a significant impact on the banking operations. The operation risk of the banks is analyzed as below:

a. Transaction Risk:

Transaction risk refers to such types of risk, which arises from the mistake of the bank staff, while making transaction. This is one of the biggest problems in banking operation. This risk is mainly associated with human error, while making transactions.
When asked to banks operation managers & other key staffs, the major types of transaction risk includes:

1. Cash Shortage & Overage;

The cash short & over is the main transaction risk in banking sector. Cash shortage and over is associated with the employees of cash department. Cash short of a staff refers to a situation in which any amount below the actual amount required to balance the cash flow of a staff in a particular date. It also includes the loss of cash in premises of bank, customers and other banks during the course of banking transaction and any amount found short due to wrong transaction of account. Cash over of a staff, on the other hand, refers to a situation in which any amount above the actual amount required to balance the cash flow of a staff in a particular date. It also includes the excess of cash in premises of bank, customers and other banks during the course of banking transaction and any amount found excess due to wrong transaction of account. This cash short or over occurs mainly due to human error of the banks staff. Both cash short and over position is not good for a bank. Cash Short is associated with the loss of banks whereas over means the reputation risk (i.e. the customer, who pays more might come later on to claim).

Staff of KBL states the cash short and over is a regular phenomenon in banking sector, which can be minimized but cannot be completely eliminated because to “make mistake is human”. The average cash short in

a year is around Rs.50 thousands to 100 thousands. According to staffs of MBL, the average cash short is around Rs. 100 thousands in a year. In both banks, to cover the cash shortage from the bank teller, there is a provision of teller risk fund. In KBL, the per month teller risk fund is Rs 500 each employee of Assistant/ Senior Assistant level and Rs 750 each employee of officer/ senior officer. Whereas in MBL the teller risk fund is Rs. 1,000 per month for the concerned staff. The short amount is covered from this teller risk fund. If the short amount is higher than the teller risk fund, the concerned staff must have to pay to the bank.

2. Document Risk;

Document risk refers to the risk, which arises from the acceptance of false/mistake document by the bank. In document- based business such as Letter of Credit (L.C.), Credit, if the bank opens a L.C. or provides loan against false documents, the bank has to suffer losses. Similarly, while purchasing cheques and bill, if the document risk is not genuine, this leads a bank to suffer a huge loss. This type of document risk is associated with human error of banks' staff as well as the intention of the client.

While interviewing the key employees of both banks, it was found that banks have taken a high precaution for the document risk. There is no such case where banks have suffered huge losses due to fraud documents. To minimize the risk, both the banks have policies which require hierarchy wise authority to take both LC and Credit Decision.

3. Settlement Risk;

Settlement risk refers to potential of loss a bank might suffer due to unsettlement of transaction within branches of a bank or between inter

hank transactions. The unsettlement of transaction is the main problem of non- computerized bank.

However, unsettlement of a transaction also remains a problem in computerized banks as well. This problem mainly occurs in case of inter-bank transaction. A. Chaudhary (Personal Interview, 2007) stressed the major settlement problem of the bank associated with the draft payment, payment of foreign trade & visa card etc. The major problem of settlement risk is unsettling of transaction by the Nostro Banks. Nostro Bank refers to the bank in which a commercial bank keeps its money as deposit. So, when Nepalese banks have to do transaction in foreign countries in foreign trade, they will perform through such Nostro Banks. While making transaction with this bank, the debited entry made by local banks need to be credited by Nostro Banks and vice versa. But the main problem is, lots of these entries remain un-reconciled for a long time. The bank can neither record the entries as income nor expenses, which results in the risk.

Likewise, the bank also has to make inter branch transactions. Inter branch transaction refers to the transaction made between branches. While making inter branch transactions, the transaction should be settled down timely. The outstanding entries from either branch for a long time are risky for a bank.

According to Head of Reconciliation Department of MBL there is least problem in inter branch transaction because of the computerized system (i.e. Any Branch Banking Services). The bank has given high priority on the settlement of risk.

Both the banks have a reconciliation department, concerned with the reconciliation of inter branch and Nostro transactions. It is found that both the banks are doing inter branch reconciliation on a weekly basis, whereas

Nostro Reconciliation is being carried out on a fortnightly and monthly basis. From the interview of the head of reconciliation department of both the banks, it has been found that in common these banks have least outstanding entries for more than 3 months. Generally, the inter branch transactions will be settled within maximum 2-3 days, where as the foreign banks transaction might remains outstanding for 2-3 months. But, both the banks are making timely follow up with agency banks for its timely settlement of the transactions.

b. Money Laundering:

Money Laundering is defined as disguising the source or ownership of illegally gained funds to make them appear legitimate or hiding money to avoid paying taxes or using legally gained money in pursuit of unlawful activities (Economic Times, 2006). In another word, money laundering is the involvement in any one transaction, or series of transactions, that assists a criminal in keeping, concealing or disposing of the proceeds from illegal activities. Money Laundering takes place in three phases,

- When bulk cash is deposited into the banking system using currency or funds from illegal activities.
- Layering where multiple transaction are used to separate the proceeds from their illegal source.
- Integration of the illegal funds with apparently legitimate business earning.

Money Laundering is a global issue after the September 11, 2001. In both banks, sobering against the money laundering has been given a high priority. According to the managers operation, both the banks have a comprehensive anti- money laundering policy, known as "Know Your Customer (KYC) policy". The policy is

in line with international practices. Banks look following minimum standards while conducting banking business:

- Customer identity is ascertained before opening an account and/or making account operational.
- New accounts are generally subjected to a detailed interview to ascertain purpose of opening an account and sources of funds etc.
- All suspicious transactions are reviewed by senior management.
- Records are kept for all data obtained for the purpose of identification.
- Employees are trained on a regular basis on anti- money laundering measures

In both the banks, compliance department is responsible for monitoring the compliance of Know your customer (KYC) policy, N. Rai (Personal Interview, 2007) of KBL states that the compliance department is responsible for tracing out all the doubtful transaction on daily basis. The bank continuously identifies and verifies the following transactions:

1. Cash transaction above Rs. 500,000.
2. Remittance of Foreign Currency more than USD 10, 000.
3. Credit Facilities approved beyond Rs 10 million.
4. Any unusual transaction.

G. Sharma (Personal Interview, 2007) of MBL states that bank looks into following transactions:

1. Customer background, which does not justify the deposited amount.
2. Customer who have frequent large transaction without any source.
3. Multiple bank accounts of a same customer in same bank.
4. Business unit reluctant to provide information about nature and purpose of business, its key employees etc.

It has also been found from the interview of key employees of both banks that NRB frequently sends letters to commercial banks in order to block the account of terrorist, corrupted people etc.

From above, it has been found that both banks have enough measures to combat money laundering. However, to attract the deposit, banks have been opening accounts with minimum formalities.

c. System Risk:

System risk is associated with the possible losses bank might suffer due to system failure. In today's scenario, banking sector is computerized. Therefore, when the system fails, the bank might face huge problem.

The main software of both banks is GLOBUS. All the branches have been interconnected with radioactive links so that the customer can get Any Branch Banking Services (ABBS). This computerized system will be in problematic situation when system fails. A. Joshi (Personal Interview, 2007 **)** Information Technology (IT) Manager of MBL mentioned that system failure is not usual. The bank itself configures most of the problems related to the system, however for the complex problem the bank has been using the help of Indian companies. S. Karna (Personal Interview, 2007) of KBL states that every day the bank records the transaction in a disk after operating End of Day (EOD) transaction. For the proper back up and diversification of system risk, the data are, replicated in more than one server located in various places. Proper back up of data and information is maintained by the bank, which helps to restore the data easily in case of major breakthrough. For the proper security of data, both the bank has adopted the latest device. Internet banking services, which is a new banking product in Nepalese commercial banks, has also been launched by both banks. For the security of customer transaction from Internet banking, both banks have adopted latest

technology. Similarly, frequent inspection of the equipment and preventive maintenance is carried out by both banks, which lowers the major breakthrough of the technology. Further, both banks are frequently training their staffs to handle emerging technology.

Under the system risk, the risk associated with card business is also one of the great problems in bank. Card refers to all debit and credit card issued by the bank in order to facilitate the transaction of its customers. In today's scenario, debit and credit card are being highly used, which almost substitute the money. In Nepalese context, card business has just been emerging. With the use of debit and credit card by commercial banks to facilitate the customer for making transaction, the operation risk has also increased significantly.

KBL is providing the service of Visa Debit card, with an access in all the Automated Teller Machine (ATM) and Point of Sale (POS), both in Nepal and India. KBL has owned 7 ATM machines, which are placed in major cities of the country. Similarly, MBL has provided ATM card in collaboration of Smart Choice Technology (SCT) Network, which can be used only in the ATM counter of SCT and POS. SCT Network owns and handles all the administrative function of ATM. MBL is using its service on fee basis.

The major risk in card business is associated with fraud, over payment of cash, unsettlement of credit card transaction and system failure etc. As the government is yet to come with rules and regulation regarding card business, the operation of card business looks troublesome in Nepal.

R. Shrestha (Personal Interview, 2007) head of Card department KBL states that there is least risk in debit card, as customers only are allowed to withdraw cash from their deposited amount. However, in credit card and foreign bank's card transaction, settlement risk is associated as the settlement of transaction involves various agents (for e.g. visa, correspondence banks etc)

G. Sharma (Personal Interview, 2007) of MBL explained that a technical problem with ATM is also one of the significant problems. Due to the technical problem, the ATM services remain out of service. Besides, over payment of cash than customer's request is also the problem associated with ATM services. Reviewing the responses of the key respondents, it has been found that on an average, ATM of both banks remains out of service for maximum of 5 times in a month.

Similarly, fraud is also one of the problems in card business. However, in both banks there is no incidence that bank suffered loss due to the use of fraud card and pin number.

From reviewing the organization workf1ow, it has been found that KBL has made card department more stringent than MBL. A separate ATM Cell is in operation for tracking the technical problem. This department is mainly responsible for reducing technical problem of bank and tracing the fraud transaction if any. Whereas in MBL, only administrative function is carried out by the bank and all the technical functions is carried out by SCT Network.

4.5 Banking Risk and Capital Adequacy Measures

Capital Adequacy Ratio (CAR) is one of the major tools of minimizing the overall risk of a bank. 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 measures 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 the bank fails to maintain the required ratio, bank is not allowed to increase its asset, disburse loans, collect deposits and distribute dividend.

a. 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). Core Capital, on the other hand, refers to the shareholders equity, which includes Share Capital, Retained Earnings, General Reserve, Net profit & Non redeemable Preference Share etc. 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 No. 4.31

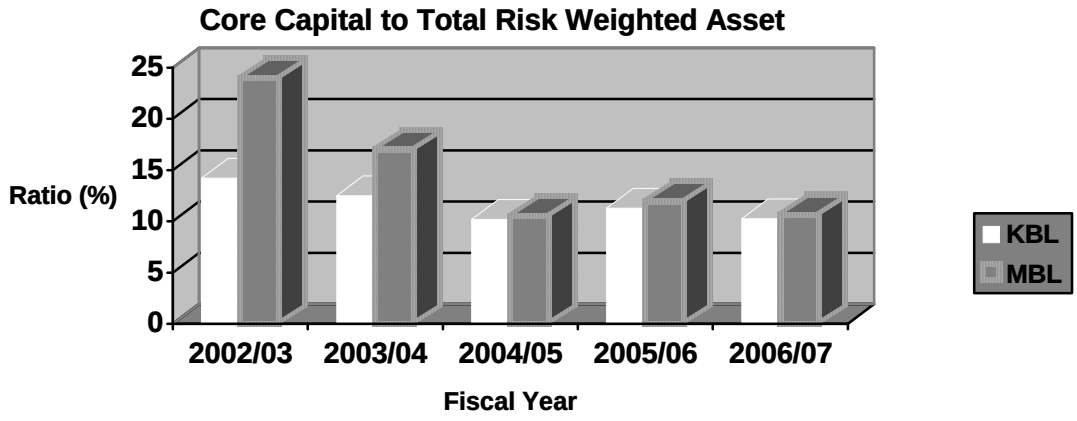
Core Capital to Total Risk Weighted Asset

(Rs in millions)

		KBL			**MBL**			
Fiscal Year	**Statutory Ratio**	**Core Capital**	**Total RWA**	**Core Capital/ RWA(%)**	**Core Capital**	**Total RWA**	**Core Capital/ RWA(%)**	**Excess/ Shortfall**
2002/03	5.50	359.6	2529	14.22	501.7	2092.0	23.98	11.51
2003/04	5.50	556.0	4449	12.50	553.0	3250.7	17.01	11.51
2004/05	5.50	641.7	6292	10.20	637.8	6063.0	10.52	11.51
2005/06	5.50	860.0	7625	11.28	912.0	7632.0	11.95	6.44
2006/07	5.50	1022.0	9960	10.26	982.6	9200.7	10.68	5.18
		Average		**11.7**	**Average**		**14.83**	
		S.D		**1.52**	**S.D**		**5.15**	

		C.V	**13%**	**C.V**	**34.7%**	

Source: Annual Reports



Above table and chart exhibits the ratio of core capital to total risk- weighted asset of KBL and MBL for 5 years. Both banks have maintained the ratio more than that of statutory requirement prescribed by NRB. Both banks have maintained high ratio in earlier years. The higher ratio in earlier years is also because of bank's lower risk weighted asset. The average core capital to RWA ratio of KBL and MBL is 11.7% and 14.83 % respectively. This indicates that MBL has employed higher capital than KBL to finance the risk- weighted asset MBL has higher amount of cushion against the losses. 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 also indicates KBL is in less risky position than MBL. The Standard deviation of core capital to RWA of KBL is 1.52%, whereas the ratios of MBL are 5.15 %. Similarly, the Coefficient of Variation (C.V) of KBL on core capital to RWA is 13 %, whereas C.V. of the ratios of MBL is 34.7 %. The higher percentage of deviation and variation is due to higher capital adequacy ratio of MBL in fiscal year 2002/03 (i.e. 23.98 %). Besides this, in rest of the periods the ratio has fluctuating movement.

b. Supplementary Capital to Total Risk Weighted Asset:

This ratio measures how much supplementary Capital a bank has to finance the total. Supplementary Capital refers to the reserve maintained by the bank for specific se such as loan loss, foreign exchange loss etc. It includes General Loan Loss Provision, Asset Revaluation Reserve, and Foreign Exchange Reserve etc. Higher the bank maintains, the higher will be the capital cushion for a bank to cover the risk and vice versa.

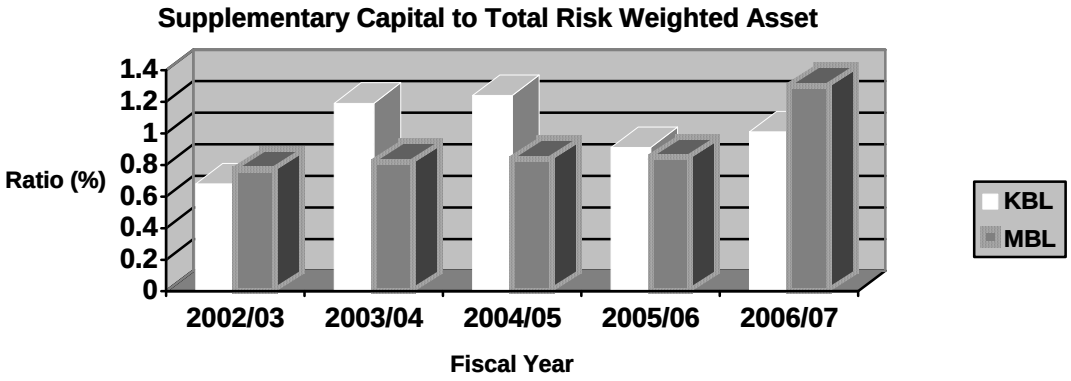
Table No. 4.32

Supplementary Capital to Total Risk Weighted Asset

(Rs. In millions)

Fiscal Year	KBL			MBL		
	Supplementary Capital	RWA	Supplementary Capital/ RWA	Supplementary Capital	RWA	Supplementary Capital/ RWA
2002/03	31.36	2528	0.68	16.11	2092	0.77
2003/04	40.47	4449	1.19	26.66	3251	0.82
2004/05	63.81	6292	1.24	51.10	6063	0.84
2005/06	82.46	7625	0.91	64.87	7632	0.85
2006/07	95.31	9960	1.01	119.61	9200	1.30
	Mean		**1.006**	**Mean**		**0.916**
	S.D		**0.2021**	**S.D**		**0.194**
	C.V		**20.1%**	**C.V**		**21.18%**

Source: Annual Reports



Above table and chart exhibits Supplementary Capital to Total Risk Weighted Asset ratio of KBL and MBL for 5 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 1.006 % and 0.916 % respectively. This indicates that KBL has higher amount of supplementary capital than MBL. The higher amount of supplementary indicates that KBL 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 0.20 % and 0.194 % respectively. Likewise, the coefficient of variation of KBL and MBL is 20.1 % and 21.18 % respectively. The S.D. and C.V. indicate that the ratio of MBL fluctuates more than that of KBL, which depicts the less consistency in part of MBL.

c. 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. Some excess/shortfall is not mentioned due to unavailability of data.

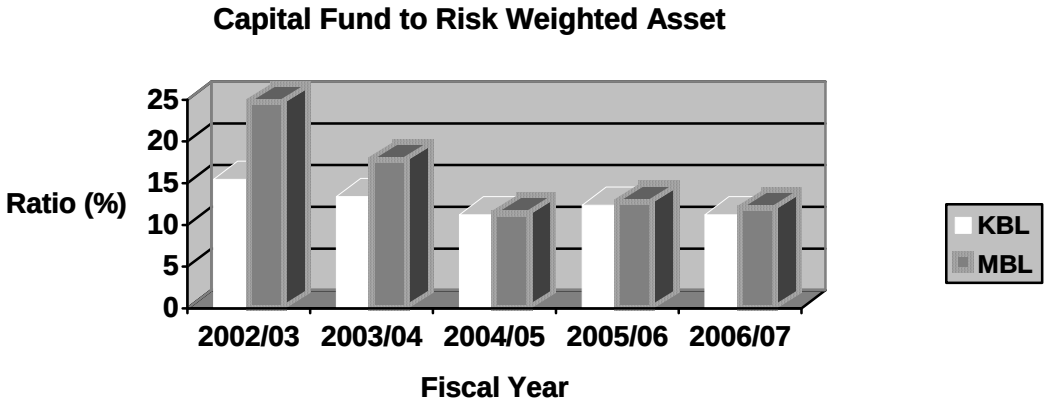
Table No. 4.33

Capital Fund to Risk Weighted Asset

(Rs. In millions)

Fiscal Year	Statutory Ratio (%)	KBL				MBL			
		Total Capital Fund	RWA	Capital Fund/ RWA	Excess/ Shortfall	Total Capital Fund	RWA	Capital Fund/ RWA	Excess/ Shortfall
2002/03	9	390.9	2528	15.46	5.46	517.8	2092	24.75	-
2003/04	10	596.7	4449	13.41	1.81	579.3	3251	17.82	6.82
2004/05	11	705.31	6292	11.21	0.21	688.8	6063	11.36	6.82
2005/06	11	942.5	7625	12.36	-	976.1	7632	12.79	1.79
2006/07	11	1117.5	9960	11.22	-	1101.3	9201	11.97	0.97
		Mean		**12.73**		**Mean**		**15.74**	
		S.D		**1.59**		**S.D**		**5.05**	
		C.V.		**12.49%**		**C.V**		**32.1%**	

Source: Annual Reports



Above table and chart exhibits the Total Capital fund to Risk Weighted Asset (RWA) of KBL and MBL for 5 years. Both banks have capital adequacy ratio higher than the statutory requirement in all 5 years. The average ratio of KBL and MBL is 12.73 % and 15.74 % respectively. This shows that MBL has higher Capital Adequacy Ratio than KBL, which signals that MBL is in better position than KBL. The ratio of KBL is in fluctuating trend. As the bank has started to

grow, the capital will be more utilized on the asset. In case of MBL also the ratio is in fluctuating trend. Similarly, the excess of ratio than of statutory requirement of MBL is higher than that of KBL. In more recent years, the CAR of KBL is just 0.22 % above than statutory requirement; whereas the CAR of MBL is 0.97 % above than statutory requirement.

d. On Balance Sheet RWA to Total RWA:

This ratio measures the proportion of on balance sheet RWA on total RWA of a bank. On balance sheet RWA refers to the risk weighted of all the balance sheet items such as loans and advances, fixed asset, investment etc. Since, the risk weight of cash and bank balance, investment in governments is nil, such assets do not have impact on total RWA. The higher ratio refers that the bank has high amount of loans & advances, fixed asset, investment and other assets and vice versa.

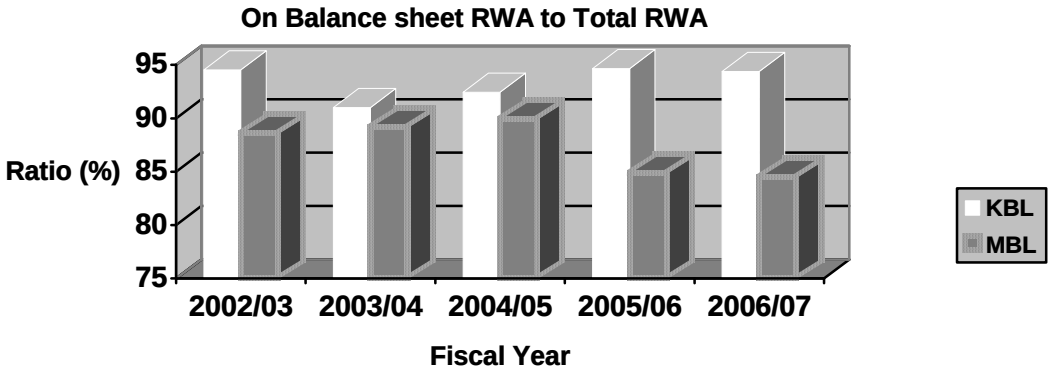
Table No. 4.34

On Balance sheet asset RWA to total RWA

(Rs. in millions)

Fiscal Year	**KBL**			**MBL**		
	On Balance Sheet Asset	**Total RWA**	**On Balance Sheet Asset/ Total RWA**	**On Balance Sheet Asset**	**Total RWA**	**On Balance Sheet Asset/ Total RWA**
2002/03	2390.69	2528.7	94.54	1854.05	2092.0	88.63
2003/04	4049.45	4449.4	91.01	2899.66	3250.7	89.20
2004/05	5816.63	6291.8	92.45	5454.88	6063.0	89.97
2005/06	7217.43	7625.1	94.65	6479.52	7632.0	84.9
2006/07	9402.00	9960.0	94.39	7776.37	9200.7	84.52
	Mean		**93.41**	**Mean**		**87.44**
	S.D.		**1.45**	**S.D.**		**2.28**
	C.V.		**1.55%**	**C.V.**		**2.61%**

Source: Annual Reports



Above table and chart exhibits the ratios of on balance sheet RWA to total RWA of KBL and MBL for 5 years. Both banks have higher amount of on balance sheet asset in total RWA. However, the ratio of both banks has been fluctuating over the years. The average ratio of KBL and MBL is 93.41% and 87.44 % respectively. This indicates that KBL has more amount of on balance sheet RWA than MBL, which means that MBL has diversified its assets more than KBL. In other word, in case of loss on on-balance sheet asset such as loans and advances and investment, KBL suffers more loss than MBL.

The standard deviation of ratio of KBL and MBL is 1.45 % and 2.28 % respectively. Likewise, the coefficient of variation of the ratio of KBL and MBL is 1.55 % and 2.61 % respectively. This indicates that the ratio of MBL deviate more from the average than that of KBL, which shows higher inconsistency and risk.

e. Off Balance Sheet RWA to Total RWA:

This ratio measures the proportion of off- balance sheet RWA an total RWA of a bank. Off-balance RAW refers to the risk weighted of all the contingent asset/liabilities such as Le contingency. The higher ratio refers the bank has high amount of contingent liabilities such as L.C. Guarantee etc.

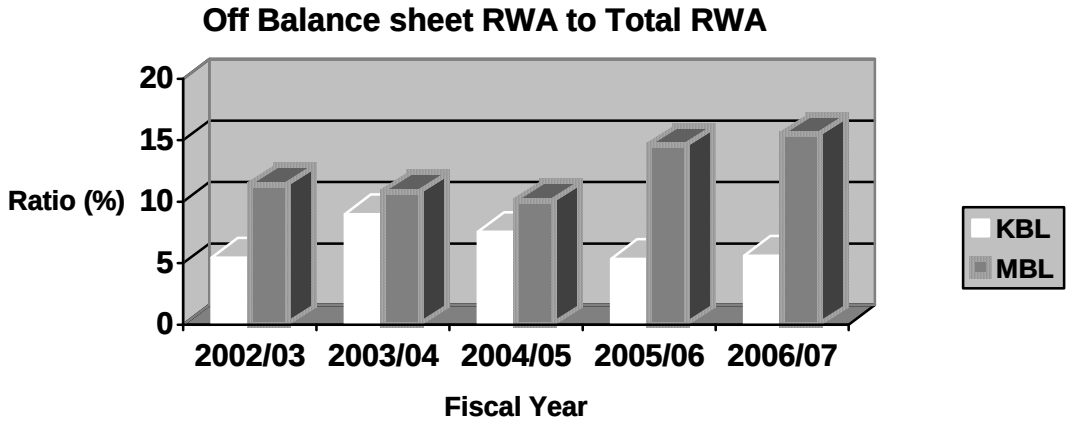
Table No. 4.35

Off Balance Sheet RWA to Total RWA

(Rs in millions)

Fiscal Year	KBL			MBL		
	Off Balance Sheet Asset	Total RWA	Off Balance Sheet Asset/ Total Risk Weighted Assets	Off Balance Sheet Asset	Total RWA	Off Balance Sheet Asset/ Total Risk Weighted Assets
2002/03	138.08	2528.7	5.46	237.96	2092.01	11.37
2003/04	399.96	4449.4	8.99	351.00	3250.66	10.79
2004/05	475.21	6291.8	7.55	611.25	6063.13	10.08
2005/06	407.62	7625.1	5.35	1113.01	7632	14.58
2006/07	558.33	9960.0	5.61	1424.30	9200.7	15.48
	Mean		**6.59**	**Mean**		**12.46**
	S.D.		**1.45**	**S.D.**		**2.15**
	C.V.		**22%**	**C.V.**		**17.25%**

Source: Annual Reports



Above table and chart exhibits the ratios of off balance sheet RWA to total RWA of KBL and MBL for 5 years. Both banks have lower amount of off- balance

sheet asset in total RWA. However, the ratio of both banks has been fluctuating over the years. The average ratio of KBL and MBL is 6.59% and 12.46 % respectively. This indicates that MBL has more amount of off- balance sheet RWA than KBL, which means that MBL has higher amount of Letter of Credit, Guarantee etc. This refers the MBL has diversified more on income generating business than KBL.

The standard deviation of ratio of KBL and MBL is 1.45 % and 2.15 % respectively. Likewise, the coefficient of variation of the ratio of KBL and MBL is 22 % and 17.25 % respectively. This indicates that the ratio of KBL deviate more from the average than MBL, which is the sign of inconsistency and risk.

4.6 Major Findings of the Study

From the above analyses of different risks, following major findings have been obtained and categorized under different risks heading.

4.6.1 Credit Risk:

From the review of the questionnaire carried out with the key employees of the banks, it was found that proportion of the credit risk on banks is more than 60 % of total risk. 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 or borrower's limit, which is 10 % of total loan. However, the sector wise lending analysis portrays that KBL and MBL have extended 22.69% and 20.67 % of loan in a single sector respectively. Similarly, the exposure on the single sector of KBL and MBL exceeds 10 % of total loan in 3, 4 and 13 in KBL and 3, 7, 8 and 13 in MBL sectors respectively. The single sector loan to core capital shows that the ratio crossed 100% in 3 and 13 sectors of KBL and 3, 8, 13 of MBL. In regard to

concentration risk, KBL has more risk in manufacturing and others sector where as MBL has more risk on manufacturing, whole, seller and retailer and other sectors as the single sector credit to core capital ratio in these sectors is more than 100 %. From the personal interview of the key respondents it was found that both banks have been extending credit after getting approval from the board of director. This clarifies that concentration risk is the main source of credit risk for KBL and MBL. 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 “1st" to the manufacturing sector where as the Agriculture sector has been ranked the 5th on the basis of priority. KBL as well as MBL has chosen service industry and real estate business in 3rd and 2nd position respectively.

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, the bank's staff also proves that there is no significant difference between observed and expected frequency of ranking.

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 of KBL and MBL against movable/ immovable property is Rs. 5074.86 million and Rs. 5266.9 million for 4 years and 3 years period 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 5th and 3rd position. Both the banks have not granted any loan without backing any collateral.

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

The average loans and advances to total asset of KBL and MBL during the study period are 73.8175 % and 70.19 % respectively. Over this five years period the proportion of loan on total assets of both the banks are fluctuating. From this, it can be said that MBL and KBL has been frequently adjusting the proportion of loan. Lower average loan and advances to total asset of MBL than that of KBL (i.e. 70.19 %< 73.8175 %) suggests that MBL management is more risk averse than KBL and also indicates that MBL has invested more on the risk free asset such as government bills (i.e. Treasury Bills, National Saving Bonds, Development Bonds etc). However, higher deviation of ratio and variability of both the banks depicts that the ratio of them is more fluctuating from average and carries higher risk.

The core banking function is to mobilize the funds obtained from the depositors and how successfully this function have been discharged by the banks is measured by the ratio of loans and advances to total deposit ratio or simply CD ratio. The average CD ratio of KBL and MBL is 85.714 % and 84.66 % respectively during the study period. This implies that KBL has utilized higher portion of deposit than that of MBL. Similarly, the deviation of the ratio of KBL is lower than MBL, which indicates that CD ratio has lower variation from the average in case of KBL than that of MBL.

Analysis of non- performing loans to total loans revealed that average NPL of KBL and MBL is 1.012 % and 0.978 % respectively. This means that average performing loan of KBL and MBL is 99.27 % and 97.87 % 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 KBL, the impact of it will be on the net profit of the bank. However, in recent years, KBL has managed to decrease the non-performing loan ratio below 1 %, which is due to more stringent credit practices and recovery system.

Average ratio of Loan Loss Provision to Non-performing Loan of KBL and MBL was found to be 164.35 % and 222 % 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, 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.

The average Loan loss Provision to total loan ratio of KBL and MBL is 1.53 % and 1.25 % respectively. The higher percent of LLP of KBL indicates that the bank has higher amount of non- performing loan than MBL. Because of the higher amount of non- performing loan of KBL in total, the provisioning amount is in higher side. This figure indicates that MBL is in better position than KBL.

The main objective of commercial banks is to earn profit through mobilization of fund. The ratio of returns on loans and advances ratio shows that the average ratio for 5 years of KBL and MBL is 1.362% and 1.54% respectively. This figure indicates that MBL has been able to earn return from its loans and advances than KBL. Similarly, the variation on return of KBL is higher than that of MBL, which means that return on loan and advances of KBL is more fluctuating than MBL.

Correlation coefficient between LLP and loans and advances of KBL and MBL is 0.984 and 0.905 respectively. This figure indicates that the LLP and loan and

advances of MBL are highly correlated than KBL. Similarly, 6 times Probable Error (P.E) of both KBL and MBL is lower than the correlation coefficient, which indicates that correlation coefficient of both the banks is significant and reliable.

The correlation coefficient of KBL and MBL is 0.946 and 0.809 respectively. The 6 times P.E shows that the correlation coefficient of both the banks is significant and reliable.

Analyzing the organization 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 Recovery Department, Risk Assessment department 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. In MBL there is no separate department for assessing the risk as well as recovery of loan. Quality of the credit management of MBL was increasing in previous year as the ratio of NPL to total was decreasing but, has again decreased as the ratio has increased by 0.884 % in fiscal year 2006/07 from the previous year's ratio of 0.276%.

4.6.2 Liquidity Risk:

Liquidity risk is associated with the funding crisis of a bank, which arises due to non-marketability of the asset. The liquidity risk is one of the market risks as the market determines the liquidity of the asset. From the above analysis, the current liquidity position of KBL and MBL has been ascertained. Besides, funding of asset through liabilities has also been analyzed by categorizing the asset and liabilities into different maturity period, from which liquidity crises and risk associated with asset liabilities mismatch is also found.

Gap analysis which is the most common and best tool for analyzing the liquidity risk has been used to find out the mismatch between asset and liabilities in different time intervals of both the banks. From the gap analysis of asset and liabilities of different time intervals, it has been found that over four years KBL has higher amount of liabilities than asset in both short term time bucket (i.e. on 1-90 days and 91-181 days) and long term time bucket (i.e. more than 1 year), where as in MBL the amount of liabilities is more than asset in long term time bucket (i.e. on 271-365 days and on more than 1 year). This higher portion of liabilities than asset in certain time bucket means the bank will be in risky position to offset the liabilities when they will mature. As the liabilities cannot be paid by liquidating the asset of that time bucket, it is needed to offset by using the asset of other time interval or through inter-bank borrowing or issuing instruments. Similarly, when the market price of asset/ liabilities of certain time interval increases, the bank will suffer a loss in such situation as the liabilities at that interval has more market price than asset. On the contrary, when the market price of asset/liabilities at certain time interval decreases, bank will suffer more loss when the bank has higher amount of asset than liabilities. Therefore, the best situation for the bank is the fewer gaps between the asset and a liability, as higher on either side is risky to the bank. Though from liquidity point of view the higher the asset than liabilities is better, however, the excess net asset liabilities position also leads the higher idle fund of the banks that ultimately results higher opportunity cost.

The mean net position of KBL is Rs. 493.5 million, Rs -49.5 million, Rs 118.7 million, Rs 954.5 million and Rs -805 million in time interval 1-90 days, 91- 181 Days, 181-270 days, 271-365 days and more than 1 year respectively. Likewise the mean net position of MBL is Rs. 1960 million, Rs. 2536 million, Rs.2698 million, Rs. 4483 million, Rs -5216 million in time interval of 1-90 days, 91- 181 Days, 181-270 days, 271-365 days and more than 1 year respectively. The mismatch amount of KBL in time interval below 181 days is less than that of MBL, where as the MBL has less mismatch amount in the long-term maturity period. However, KBL has negative net gap in time interval below 181 days,

where as MBL has positive net gap in the same period. In long term, the MBL has matched its asset liabilities nicely than that of KBL. This means the KBL is in more risky position than MBL in terms of meeting short-term liquidity.

Likewise, the standard deviation of KBL is Rs 1029 million, Rs 462 million, Rs 598.6 million, Rs 435 million, Rs 614 million in time interval of 1-90 days, 91-181 Days, 181270 days, 271-365 days and more than 1 year respectively. The Standard deviation of MBL is Rs.1101 million, Rs. 2024 million, Rs. 1689 million, Rs. 8726 million and Rs.8850 million in time interval of 1-90 days, 91-181 Days, 181-270 days, 271-365 days and more than 1 year respectively. This implies that the MBL net position has high level of deviation than MBL in all time buckets, which signifies the higher risk on MBL than KBL.

The average Current ratio of KBL and MBL over 5 years is 1.0956 and 1.57. This figure indicates that KBL has matched its current asset and liabilities more nicely than MBL. This means that MBL has used higher amount of current liabilities to finance asset with higher maturity period.

Cash and Bank balance to total assets ratio of both KBL and MBL shows the proportion of liquid asset in total assets portfolio. The higher ratio does a bank have, the better is the liquidity position of the bank (i.e. lower the liquidity risk) and vice versa. The average ratio for KBL and MBL in 5 years is 7.63 % and 10.5 % respectively. This ratio indicates that MBL has kept more liquid asset in its asset portfolio than KBL, which signifies the lower liquidity risk. On the contrary, the higher portion of cash and bank balance also portrays that bank has kept more idle fund.

Another important indicator of liquidity risk is Cash Reserve Ratio (CRR). The CRR is the amount of deposit commercial banks needs to maintain in Nepal Rastra Bank out of Rs.29.08 million and Rs.240.43 million respectively. Over the five years, MBL has higher interest rate sensitive asset than interest rate sensitive

liabilities except in fiscal year 2004/05 and 2005/06, whereas KBL has higher amount of IRSL than IRSA except in 2005/06. The higher gap of MBL means that the bank has higher amount of mismatch between IRSA and IRSL. The higher amount of mismatch represents that the bank does not have hedged the asset and liabilities properly to minimize the risk. This figure also indicates that that MBL has higher vulnerability of interest rate changes than KBL.

The gap analysis of Fixed Interest Rate Sensitive Asset (FIRSA) and Fixed Interest Rate Sensitive Liabilities (FIRSL) of both banks depicts that both the banks' structure of asset and liabilities has been changing over years. The average gap ratio for 4 years of KBL and MBL is 1.54 and 1.85 respectively. The higher gap ratio of MBL shows that compared to KBL, FIRSA of MBL is higher than FIRSL.

The net interest margin (NIM) of KBL and MBL over 5 year is Rs. -0.32 million and -0.295 million respectively. The higher amount of NIM of MBL than KBL shows that the impact of changes in interest rate on MBL is higher than that of KBL. This means that then there is a change in interest rate on Rate Sensitive Asset and Liabilities, MBL will earn more profit than KBL.

From the above gap analysis, it has been found that KBL has managed both types of assets (i.e. Interest Rate Sensitive Asset and Fixed Interest Rate Sensitive Asset) and liabilities (i.e. Interest Rate Sensitive Liabilities and Fixed interest Rate Sensitive Liabilities) better than MBL. This also indicates that KBL has less vulnerability of rest rate risk than MBL.

Interest rate risk analysis, according to NRB directive no. 5, depicts that KBL and MBL has cumulative net gap (i.e. between asset and liabilities) of Rs. 779 million and Rs. -50276.24 million respectively. The higher gap means that KBL has higher amount of asset than liabilities. When there is a 1 % change in interest rate on both rate sensitive asset and liabilities, the net profit and loss of KBL and MBL will be Rs. 1.95 million and Rs. -125.7 million respectively. The higher amount of

cumulative net profit of KBL indicates that KBL has a positive impact with changes in interest rate than MBL.

Average interest rate spread of KBL and MBL is 4.17 % and 3.63 % respectively. The higher amount of spread of KBL indicates that the net interest income (i.e. interest income less interest expenses) of KBL is more than MBL. This means KBL earns more profit than MBL.

4.6.3 Operation Risk

The major findings related with operation risk are as below:

Transaction risk has been identified as one of the major source of operation risk. Transaction risk, which arises mainly due to human error, includes cash shortage and over, document risk & settlement risk. According to the staff of both banks it has been found that cash shortage and over is a regular phenomenon as to error is human. The average cash short is around 100 thousands. In both banks, there is a provision of teller risk fund to safeguard the loss from cash short. The teller risk fund in KBL per month is Rs. 500 for assistant and Senior Assistant Level and Rs 750 for officer level. Whereas in MBL, the teller risk fund is Rs 1,000 per month.

Similarly, in documentary business such as Letter of Credit (L.C.), Credit, there is a risk of opening a L.C., providing loan against the false document. Similarly, there is also a risk of purchasing or discounting a counterfeit checks and bills by a bank. This risk arises mainly due to negative intension of clients & failure of banks to take timely precaution. According to the key respondents of both banks, it has been found that there is no such an incident that the bank has suffered a huge loss due to acceptance of counterfeit document. Settlement risk is also another source of operation risk, which arises mainly in inter-branch and inter-bank transaction. The timely unsettlement of transaction within the branches or banks means that the bank can neither record such transaction as an income nor

as an expense. To minimize the settlement risk, both the banks have reconciliation department. This department is concerned with reconciling the inter- branch and inter-bank transaction in different time intervals. According to the interview of head of reconciliation department of both the banks, it has been found that normally inter- branch transactions can remain outstanding only for 2-3 days, whereas inter- bank transaction may remain for 2-3 months. However, both the banks have been making proper follow up for un- reconciled transaction with the correspondence bank.

Money laundering is also one of the important sources of risk for commercial banks. For combating the money laundering, both the banks have their own Know your Customer (KYC) policy. It includes proper identification of customers before making transaction. In both banks, Compliance Department is concerned with tracing all doubtful transactions and evaluating the compliance of KYC policy. The bank continuously identifies and verities the following transaction:

- Cash transaction above Rs. 500,000.
- Remittance of Foreign Currency of more than USD 10, 000.
- Credit Facilities approved beyond Rs 10 million.

According to the staff of both the banks, the main factors that bank look in customer includes,

- Customer identity before opening an account and/or making an account operational.
- Detailed interview to customers before opening a new account to ascertain purpose of opening an account, sources of funds etc.

System risk refers to operational risk, which arises due to the failure in computerized system. It is the risk associated with the new computerized

technology. From the analysis of the interview of the key respondents following findings has been identified:

Both KBL and MBL have adopted the centralized computerized system. The main software of both banks is Globus made by Temenous Company of Switzerland. To minimize the system risk, in both the banks, multiple layers of security have been applied to the bank's online banking system to ensure transaction secure. High precaution has been taken for data security. Both the banks have proper backup system in case of major break down of hardware and software. In case of card business, both banks do not see any risk in terms of debit card. The major risk in card business is also associated with technological risk. The major technological risks include system failure, over payment of cash and settlement risk etc. From the interview of key respondents of both banks, it has been found that the banks have not suffered a huge loss due to cash overpayment. In regard to card risk management KBL has set up a separate ATM Cell department, mainly concerned with handling all the technical aspects of card, monitor the likely fraud transactions etc. For reducing the risk, both the banks are providing training to their employees.

From the above, it has been found that both the banks have been giving focus on operation risk. In both the banks, Internal Audit Department makes regular audit of each departments of all branches to ascertain operational procedure of the department. It also verifies and monitors whether the department properly comply with the operational declines or not. This helps to reduce the operation risk associated with mistake made by employees or the likely fraud from employees.

4.6.4 Banking Risk and Capital Adequacy Measures

Analysis of capital adequacy measures of the both banks reveals following findings: average Core Capital to Total Risk Weighted Asset of KBL and MBL is 11.7 % and 14.83 % respectively. Both the banks have higher percentage of core

capital than the statutory requirement made by NRB. The average ratio indicates that MBL has higher proportion of Core Capital to finance the risk- weighted asset than KBL. The deviation and variation is also higher in MBL than KBL, which indicates that MBL fluctuates more than KBL.

The average Capital Fund to Total Risk Weighted Asset of KBL and MBL is 12.73 % and 15.74 % respectively. Both the banks have higher capital adequacy ratio than NRB statutory requirement. The average ratio indicates that MBL has higher proportion of Capital Fund to finance the risk- weighted asset than KBL. The standard deviation and variation as well is higher in MBL than KBL, which indicates that MBL ratio fluctuates more than MBL. However, in fiscal year 2005/06, the CAR of both KBL and KBL was just 0.21 % and 0.36 % above than NRB statutory requirement. This implies that in fiscal year 2006/07 both the banks need either to increase its capital or decrease Risk Weighted Asset to meet the CAR requirement of 12 %.

In both KBL and MBL, the portion of supplementary capital is very low. The average supplementary capital to total RWA is 1.006 % and 0.916 % 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.

In regard to risk weighted asset, both KBL and MBL has higher portion of on-balance sheet asset than off- balance sheet asset. The average portion of on balance sheet RWA total RWA in KBL and MBL is 93.41 % and 87.44 % respectively. This shows that KBL has higher percentage of on- balance sheet RWA than MBL.

4.7 Risk Management Procedure

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

a. 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 rate scheme to its investment opportunities. Most of the investment decisions are guided by the standard short by top- level managing and NRB direction.

In regard to credit risk management, a substantial degree of standard of process and documentation has been set both the bank 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 are the most important aspects in both banks to extend the credit? 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. KBL and MBL have not granted loan without collateral which indicates that both the bank gives equal importance to both borrower's 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 liquidity of foreign asset considering the foreign exchange risk.

Similarly, the Cash Reserve Ratio is the major standard set by NRB for the liquidity risk.

The major reports for liquidity risk management include gap report (i.e. between asset and liabilities), which is prepared by both banks in a periodic basic. In KBL Asset Liability Management Committee (ALCO) verifies the gap on monthly basic to take timely action for asset liabilities mismatch. In MBL as well, top management verifies & monitors the gap analysis in a periodic basis. For the purpose of NRB, CRR is the main report prepared by these banks.
For the operation risk, it is hard to set standard, as the occurrence of such risk is not predictable. For minimizing such risk, both banks have their code of conduct, which guide all the operational aspect of organization. Both the banks have their own operation guidelines for all departments such as L.C., Remittance, Cash, Card etc, which have been changed and updated.

b. Position Limit:

For the proper management of 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.

The internal audit committee of both KBL and MBL is concerned with auditing the overall function of banks, which includes credit, operation and administration etc. This department frequently monitors the possible operation risk, which mainly arises from the misconduct of employees and outsiders. The committee includes the member of board of director as well.

For ensuring the proper functioning of an organization in both banks there is a provision of decision limit in all business such as credit, LC, Cash etc. Because of the centralized system in both banks all the branches need to inform all the credit, LC decision to head office.

c. Investment policy and guidelines:

For the proper management of asset of both banks, a written investment policy is formulated. This investment policy is prepared in consistent with the NRB guidelines and this is the major guideline for making investment decision. 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. Investment decision is mainly taken by considering both the risk and return factors. Similarly, while taking investment decision market risk, reputation risk and legal risk have been considered. Besides, the impact on Capital Adequacy Ratio is also considered while taking investment as the shortfall in CAR results the imposition of various restriction by NRB.

d. Monitoring and Control:

To ensure the proper functioning of bank, the monitoring and controlling body of the bank frequently monitors all the jobs performed. The main body for monitoring & controlling the various department and branches is Internal Audit and Compliance Department. These departments continuously audit the functioning of various departments to ensure that organization is functioning

professionally and in consistent with bank's internal policy as well as NRB policy. In both banks, internal audit department reports to the audit comity, which includes both the top level management and board of directors.

Credit administration department is mainly concerned with monitoring the credit facilities and borrowers. It continuously reassessed the borrower's financial condition, loan repayment. It also frequently revaluate the collateral as well as its marketability to ensure that collateral is enough to cover the loss if any. Moreover in KBL exists a recovery department, 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 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.

Besides the internal control system, external auditors of these bank and NRB also continuously monitor and control the performance of bank. These bank need to provide various reports to NRB on daily, weekly, monthly, quarterly, semiannually and annually.

These reports ensure that banks are functioning as per NRB rules and regulations and achieving various standards.

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 various types of risk. It has been found that MBL has traditional types of organizational structure for risk management where as the recent organization restructuring of KBL has made organization more stringent for 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. Considering the importance of risk management in commercial banks, this research aimed at studying the risk management system of selected commercial banks. For this purpose, descriptive cum analytical research design was adopted. Out of total population of 25 commercial banks, 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 interview with few staffs, telephone interview etc. Annual reports and other publication of these banks and NRB are the basis of secondary data. The data collection from various sources are recorded systematically & presented. Appropriate statistical and financial tools have been applied to analyze the date. 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. The credit risk analysis made through various methods like average loans and advances to total asset ratio, credit deposit ratio, Non- performing loan, Loan loss provisioning, proportion on credit concentration on single sector, correlation coefficient shows that credit risk has covered significant ground in these banks. Credit concentration on single sector of both the banks shows that both the banks

have very high amount invested in manufacturing sector which is the sign of putting all eggs in one basket. Improper portfolio management also remains one of the significant problems in credit management of these banks. Likewise, average return on loans and advances of both banks are positive which indicates that they are able to earn net profit by utilizing the loans and advances.

The credit risk of these banks mainly arises due to non-payment of loan by borrowers, poor appraisal of borrower's 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. Collateral is also one of the important factors while extending credit. When the borrowers default, collateral is the only means to cover such losses.

For proper management of credit risk, both the banks have Credit Policies Guidelines (CPG) and well- defined organizational structure. The organization structure of KBL is found more stringent & advanced than that of 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 members of B.O.D and management, is the main body for managing credit risk.

After the credit risk; market risk such as liquidity risk and interest rate risk has significant impact on organization prosperity. The liquidity risk of banks is mainly studied by analyzing the asset liabilities mismatch in various time buckets and other ratio analysis such as current ratio, cash reserve ratio, cash and bank balance to total asset ratio etc. The gap analysis shows that KBL has managed more properly its assets and liabilities in short time bucket than MBL, where as MBL has managed more properly its asset and liabilities in higher time bucket. Similarly, liquidity risk can be measured by calculating current ratio, cash and bank balance, cash reserve ratio, which shows that MBL has more

liquidity than that of KBL, but due to the shortfall to the statutory requirement in different years it reflects that these banks have poor liquidity management.

Another part of market risk is the interest rate risk. The high proportion of interest income on total income of both these banks also indicates the high level of interest rate risk, and when there is a change in interest rate this will severely hurt the banks' net income.

The analysis of operation risk shows that both the banks have same sort of operation risk, which includes mainly transaction risk (such as cash shortage and over, settlement risk, document risk), money laundering and system risk. Cash shortage, which arises due to overpayment by the teller than the asked amount is taken as regular phenomenon. Similarly, settlement risk is also another source of operation risk, which arises mainly in inter- branch and inter- bank transaction.

In commercial banks, minimizing the risk is the major challenges. For combating the risk, both banks have taken several measures. One of the major measures is capital adequacy ratio. 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 asset than off- balance sheet asset. The lower amount of off- balance sheet assets means both these banks need to increase the off- balance sheet items, which helps to diversify the source of income of banks.

The risk management procedure in these banks includes mainly the four basic procedures. The major outlines for risk management include setting standard for all the transaction such as lending, borrowing etc, and preparing financial reports. A substantial degree of standardization of process and documentation has been set in both banks to make decision in a consistent manner and for the resultant aggregate reporting of risk exposure to be meaningful. Similarly, the position for managing the risk as well as limit

of jurisdiction is also set. Investment policy is prepared in consistent with the NRB guidelines and this is the major guideline for making investment decision. 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 functioning of bank, the monitoring and controlling body of the bank frequently monitors all the jobs performed. The main body for monitoring & controlling the various department and branches is Internal Audit and Compliance department. These departments continuously audit the functioning of various departments to ensure that organization is functioning under the professionalism and in consistent with bank's internal policy as well as NRB policy. In both banks, internal audit department reports to the audit committee, which includes both the top level management and board of directors.

5.2 Conclusion

To streamline the financial sector of a country, the Nepalese government has started to liberalize the financial sector started from 1980s. Prior to the liberalization, there were 2 commercial banks, 1 central bank, and 2 development banks. After the adoption of liberalization policy in financial sector, the financial sector widened with more banks and financial institutions. Commercial banking sectors make a significant mark with the establishment of 25 commercial banks. Though banking sector developed rapidly in quantity, it has remained far behind of the commercial banks of developed banks in terms of quality. 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. However operating a bank successfully is not as easy as to set the objective. For the existence of bank needs to properly handling the several problem and challenges. In current scenario, the major challenge of commercial banks is competition from 25 commercial banks.

Proper management of risk 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 provision also increases simultaneously leading to decrease in profit. The decrease in profit results low dividend to shareholder and bonus to employees.

Similarly, poor management of asset and liabilities having different maturity period is the main problem that arises other market risk such as liquidity risk, interest rate risk etc. The other component of market risk includes the interest rate risk. Similarly, tactfully dealing with market interest movement by adjusting the interest sensitive asset and liabilities also remains challenge to these banks. 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 is also one of the challenges for these commercial banks.

For proper management of these risks both banks have its 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 banks in regular basis and provisioning is done in quarterly basis by categorizing the loan as per NRB guidelines. Similarly, sector wise and security wise lending is being analyzed by these banks in monthly basis. Similarly for the proper management of risk, organization structure of these banks is frequently restructured.

Likewise, for managing the liquidity risk, gap analysis is the major tool. The top management analyzed the gap between asset and liabilities and make decision to make adjustment for it. Further the top management decides how much liquid asset is needed to be kept in bank. Treasury and finance department of these banks continuously manage the CRR in NRB to ensure that statutory requirement is met.

For the interest rate risk, management as well the major tools employed in these banks is gap analysis of both types of asset and liabilities (i.e. Rate Sensitive and Fixed Rate). Besides the analysis of cost of fund, yield on loan & spread is made continuously in these banks to ensure that banks have competitive interest rate, which is profitable for the banks.

In regard of operational risk, the major steps banks are taking to reduce it, they are preparing and implementing the different operational guidelines and policies & frequently monitoring their compliance. Most of these policies are prepared as per NRB guidelines. Similarly, training to employees of the banks is also the major tools for minimizing the operation risk in these banks.

For minimizing the loss arises due to occurrence of the above risks, capital and reserve has been maintained by these banks within the standard prescribed by NRB. However, the trend of Capital Adequacy ratio of these banks suggests that for increasing the asset both banks need to increase their capital fund, which is possible mainly by issuing shares, debentures or preference share.

Though both banks have their own set of procedures for assessing the various risks and for their management, problems are still prevalent in these banks. In credit risk, single sector loan concentration is main problem in both the banks. In MBL, the major problem is a high amount of lending in manufacturing sector, 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. Similarly, asset liabilities mismatch is also the problems in both banks. KBL is more risky in the asset and liabilities of shorter maturity period when the market price of asset liabilities decrease whereas MBL will be in more risky position in asset and liabilities of longer maturity period, when the market price of the asset/liabilities decreases. Similarly, managing CRR to Statutory requirement is also one of the problems in these banks.

5.3 Recommendation

From the above analysis of the various risk management procedure of both KBL and MBL, following recommendation is made to these banks, NRB and Nepal government in respect of different risk management.

a. General Recommendation:

Following general recommendation can be made to these banks regarding all types of risk management

1. **Identify and deal with new risks:** Both the banks seem conservative in terms of dealing risks. Credit risk has been given high priority in both banks. To remain competent in the market both banks need to identify and deal with new risks that arise with changes in environmental forces.

2. **Upgrade system:** Both the banks need to upgrade the system with the changes in both level and pace of technological changes in external environment.

3. **Training and Development:** Both banks are recommended to initiate training and development programmed for the employees to make them efficient and professional in terms of managing various risks. Training for credit appraisal, monitoring and management of different risk can be operational. Similarly, handling of new system and procedures also assist banks to decrease it operation risk.

4. **System of check and balance:** Both banks should give focus on the system of check and balance, which helps to reduce the risk.

5. **Proper adherence of NRB directives:** Following the directives of NRB and acting upon it also reduce the risk of the banks. Therefore both the banks are recommended adhere the directives and come up with a stronger internal audit and compliance to ensure that the directives are properly implemented.

6. **Preventive Measures:** It is often said, "Prevention is better than cure". Hence it is recommended for both banks to take preventive measures before the risk occur in bank and bank suffers loss. Both banks are recommended to develop an information system to gather all the possible information and activities that provides necessary information to take timely precaution.

b. Specific Recommendation:

Specific recommendations are especially made for particular organization for specific risk. The different stakeholders include banks under study, NRB and Nepal Government.

Recommendation to KBL and MBL

The Recommendation suggested to KBL and MBL have been categorized under different risks head

Credit Risk

In regard to credit risk, following recommendations are suggested:

1. Both KBL and MBL has higher amount of loan and advances in total asset. 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, placements etc.

2. Similarly, both banks need to properly diversify its lending portfolios. The high amount of lending in manufacturing sectors need to be diversified into various sectors, which will decrease concentration risk.
3. Similarly both 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.
4. NPL of KBL is also increasing with the increase in loan and advances. So, KBL need to be more careful while taking credit decision.
5. In MBL, there should be change in organizational structure for proper credit risk management. Recovery Cell is needed in MBL for timely recovery of loan. Similarly, for assessing the credit risk, a separate department is needed to be formed.

For the proper credit risk management, both KBL and MBL need to follow following principles:

1. Establishing an appropriate credit risk environment:

Under this, following factors need to be considered

a. 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.

b. 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 of the bank's activities and at both the individual credit and portfolio levels.

c. 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 risk management procedures and controls before being introduced or undertaken, and approved in advance by the board of directors or its appropriate committee.

2. Operating under a sound credit granting process:

a. Both 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.

b. 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.

c. 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.

3. Maintaining an appropriate credit administration, measurement and monitoring process:

Both 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 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.

4. Ensuring adequate controls over credit risk:

Both 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.

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.

Liquidity Risk

a. Asset Liabilities mismatch needs to be given higher priority in both KBL and MBL. Both banks have high mismatch amount, which needs to be frequently revised and brought under control.

b. Both banks need to set up policy for the maximum mismatch amount between asset and liabilities. Similarly, NRB should make the benchmark for asset liabilities mismatch for asset and liabilities of different time bucket.

c. Both banks have problem in maintaining the CRR, which is has decrease as of previous year. So enough care should be given for maintaining CRR by both these banks.

Interest Rate risk

a. Interest income has major portion in total income of both KBL and MBL. As there is change in interest rate, it will have huge impact on total income. So both banks need to increase their fees and commission based income to minimize income concentration risk.

b. Both banks need to monitor the gap between both types of asset and liabilities (i.e. Rate Sensitive and Fixed Rate) frequently. The gaps need to be closer in both banks for proper interest risk management.

c. Interest risk analysis according to NRB directive should not be prepared for reporting purpose only. It needs to be taken as a tool for proper risk management.

d. In Rate Sensitive Asset/ Liabilities and Fixed Rate Sensitive Asset/Liabilities, the mean gap of KBL is higher than that of MBL. So KBL needs to focus more on managing both types of asset and liabilities.

e. NRB needs to fixed the standard for maximum gap between assets and liabilities.

f. For increasing the profit, both banks need to increase the interest rate spread.

Operation risk

a. A tight grip on business practice: Both the banks should maintain a tight grip on business practice. This includes proper implementation of internal and NRB policies, keeping eyes on new risks that could arises due to changing market condition, new regulatory requirements and intensifying competitive pressures.

b. Constantly evaluate principles and policies: Both the banks should constantly evaluate its internal principles and policies related to day- to-day operation. Those policies need to be evaluated periodically to ensure policies are time relevant.

c. Tackle the cultural root causes: Even if banks have the appropriate control, mitigation, and managerial backstops in place, their culture supports them. Both banks need to stop a tendency to say one thing but doing another.

d. Strictly adhere on Anti Money Laundering (AML) measures: Both banks need to prepare and strictly adhere on their anti money laundering policies. Since both banks have only Know Your Customer

policy for preventing the money laundering, both banks should prepare and implement AML policies.

Capital Adequacy Measure

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

b. As the Capital Adequacy ratio for fiscal year 2006/07 was to meet 12 %, both banks had to increase their capital size to meet the statutory requirement. But, as in fiscal year 2006/07 the Capital adequacy ratio of KBL and MBL is 11.22 % and 11.36 %, both banks can only meet the requirement in next year either by decreasing the risk weighted asset or increasing capital. As with the decrease in asset the profit of bank also decrease, both banks have only option of increasing their capital fund which is possible mainly by issuing share, debenture and preference share etc.

c. In total risk weighted asset of these banks, both banks have lesser amount of off- balance sheet, fee based income generating asset such as Letter of Credit, Guarantee etc. So, both banks need to increase the portion of off- balance sheet asset both to diversify the risk as well as return.

Recommendations to Nepal Government

a. Nepal Government should draft and implement Anti Money Laundering Policy to ensure country has given high priority to combat money laundering.

b. Nepal Government should draft and implement law relating to E- banking, Debit and Credit Card etc. to facilitate the growth of E- banking.

c. 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 intense competition of foreign banks.

d. Nepal Government should provide adequate measures for taking action against the willful defaulters.

Recommendation to NRB

a. NRB, in addition to imposing directives, needs to provide training for commercial banks to apply new methods and system.

b. NRB should make a clear cut policies related to banking supervision. Confusing policies need to be cleared.

c. In gap analysis of asset and liabilities, NRB should specify the maximum amount of gap a bank can maintain on asset and liabilities of different maturity period.

d. NRB has been mainly focusing on credit risk of the banks. Therefore, NRB needs to focus on market and operation risk too.

e. NRB needs to establish a separate credit rating organization, which will help to minimize the credit and operation risk of the banks.

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A. Ranking of KBL Collateral on the basis of amount of loan extended

(Rs. In millions)

S. No.	Security against lending/ Year wise Lending Against Each Collateral	2003/04	2004/05	2005/06	2006/07	Total
1	Movable/Immovable Assets	3006	4265.5	5564.3	7464	20299.8
2	Guarantee of local licensed institutions	-	-	137.5	-	137.5
3	Government Guarantee	-	42.13	-	-	42.13
4	Guarantee against internationally rated bank	-	-	-	-	-
5	Against security of export documents	65.35	82.51	103	12.25	263.11
6	Own bank's FDRs	0.4	0.49	21.56	21.95	44.4
7	Other bank's FDRs	32.42	50.98	63.88	84.94	232.22
8	Loan against Government Bonds	133.55	1.22	0.59	-	135.36
9	Counter Guarantee	-	-	-	-	-
10	Loan against Personal Guarantee	-	0.205	17.88	-	18.085
11	Others	460.74	1238	1099	1479.6	4277.34
12	Without collateral	-	-	-	-	-
	Year (n)= 4 years					

Average lending = $\frac{\text{Total Lending}}{N}$

B. Ranking of MBL Collateral on the basis of amount of loan extended

(Rs. In millions)

S. No.	Security against lending/ Year wise Lending Against Each Collateral	2004/05	2005/06	2006/07	Total
1	Movable/Immovable Assets	4139.37	5151.2	6510.13	15800.7
2	Guarantee of local licensed institutions	103.516	159.17	378.3	640.98
3	Government Guarantee	-	-	-	-
4	Guarantee against internationally rated bank	-	-	-	-
5	Against security of export documents	-	-	-	-
6	Own bank's FDRs	12	40.37	18.77	71.14
7	Other bank's FDRs	5.89	83.46	211.20	300.55
8	Loan against Government Bonds	4.42	2.46	-	6.88
9	Counter Guarantee	-	-	-	-
10	Loan against Personal Guarantee	0.029	-	184.6	184.63
11	Others	865	709.9	23	1597.9
12	Without collateral	-	-	-	-
	Year (n)= 3 years				

Average lending = $\frac{\text{Total Lending}}{N}$

C. Credit Concentration on different Sector on fiscal year 2006/07

(Rs in millions)

Sector	**KBL**		**MBL**	
	Credit Concentration (x)	**Credit% = x/Total Loan**	**Credit Concentration (y)**	**Credit % = y/Total Loan**
Agriculture	299.5	3.304	54	0.73
Mine	263.3	2.91	57.1	0.78
Manufacturing	1627.8	18.46	1488.8	20.33
Construction	918	10.13	524.2	7.16
Metal and Electric Products	185.9	2.05	380	5.19
Transport equipment	466.4	5.15	105.6	1.44
Transport, communication and public utilities	191.5	2.11	764.3	10.44
Whole Seller & Retailer	756.4	8.35	1513.6	20.67
Finance Insurance & Real Estate	870.2	9.6	715.1	9.77
Service Industries	797.2	8.80	586.6	8.014
Consumer Loan	578.1	6.38	37.2	0.508
Local Government	0	0	0	0
Others	2056.6	22.69	1054.8	14.41
Total Loan	**9062.43**		**7319.94**	

D.

1. Correlation between Loan Loss Provision and Loan & Advances

KBL, (Rs in millions)

Year	x1	x2	x1 * x2	$x1^2$	$x2^2$
2002/03	31.85	2,137.59	68082.24	1014.423	4,569,291.0081
2003/04	48.98	3,697.98	181127.1	2399.04	13,675,056.0804
2004/05	96.38	5,681.01	547535.7	9289.104	32,273,874.6201
2005/06	116	7007.78	812902.5	13456	49108980.53
2006/07	133.42	9062.43	1209109	17800.9	82,127,637.5049
Sum (Σ) =	**426.63**	**27,586.79**	**2818757**	**43959.46**	**181,754,839.7419**

Here,

x1= Loan Loss Provision x2 = Loan & Advances

∑X1 = 426.63 ∑x2 = 27586.79

Σx1 * x2= 2818757 $\Sigma x1^2$= 43,959.46

$\Sigma x2^2$= 181754839.7419 N= 5 years

$$rx1x2 = \frac{n\Sigma x1x2 - \Sigma x1\Sigma x2}{\sqrt{n\Sigma x1^2 - (\Sigma x1)^2}\sqrt{n\Sigma x2^2 - (\Sigma x2)^2}}$$

$$= \frac{(5\times2818757) - (426.63\times27586.79)}{\sqrt{[(5\times43959.46) - (426.63)^2]}\sqrt{[(5\times181754839.742) - (27586.79)^2]}}$$

$$= \frac{14093785 - 11769352.22}{\sqrt{(219797.3 - 182013.2)}\times\sqrt{(908774198.5 - 761030982.5041)}}$$

$$= \frac{2324432.78}{\sqrt{37784.1}\times\sqrt{147743216}}$$

$$= \frac{2324432.78}{194.38\times12154.96}$$

$$= \frac{2324432.78}{2362698.552}$$

= 0.984 i.e. 98.38%

$$PE(r) = 0.6745\frac{1-r^2}{\sqrt{n}}$$

$$= 0.6745\frac{1-(0.984)^2}{\sqrt{5}}$$

$$= 0.6745\frac{1-0.968}{2.236}$$

$$= 0.6745\frac{0.032}{2.236}$$

$$= 0.6745 \times 0.0143$$

= 0.00965

2. MBL, (Rs in millions)

Year	x1	x2	x1 * x2	$x1^2$	$x2^2$
2002/03	6.46	1,495	9657.7	41.7316	2,235,025.0000
2003/04	16	2,541	40656	256	6,456,681.0000
2004/05	68.79	5,130	352892.7	4732.064	26,316,900.0000
2005/06	78.14	6146.58	480293.8	6105.86	37780445.7
2006/07	190	7326	1391940	36100	53,670,276.0000
Sum (Σ) =	359.39	22,638.58	2275440	47235.66	126,459,327.6964

Here,

x1= Loan Loss Provision x2= Loans & Advances

∑X1 = 359.39 ∑x2 = 22638.58

Σx1 * x2= 2275440 $\Sigma x1^2$= 47235.66

$\Sigma x2^2$= 126459327.7 N= 5 years

$$rx1x2 = \frac{n\Sigma x1x2 - \Sigma x1 \Sigma x2}{\sqrt{n\Sigma x1^2 - (\Sigma x1)^2}\sqrt{n\Sigma x2^2 - (\Sigma x2)^2}}$$

$$= \frac{(5\times 2275440) - (359.39 \times 22638.58)}{\sqrt{((5\times 47235.66) - (359.39)^2)}\sqrt{((5\times 126459327.7) - (22638.58)^2)}}$$

$$= \frac{11377200 - 8136079.266}{\sqrt{(236178.3 - 129161.2)}\times\sqrt{(632296638.5 - 512505304.4164)}}$$

$$= \frac{3241120.734}{\sqrt{107017.1}\times\sqrt{119791334.1}}$$

$$= \frac{3241120.734}{327.134\times 10944.5}$$

$$= \frac{3241120.734}{3580463.822}$$

$$= 0.905 \quad \text{i.e. } 90.5\%$$

$$PE(r) = 0.6745\frac{1-r^2}{\sqrt{n}}$$

$$= 0.6745\frac{1-(0.905)^2}{\sqrt{5}}$$

$$= 0.6745\frac{1-0.819}{2.236}$$

$$= 0.6745\frac{0.181}{2.236}$$

$$= 0.6745 \times 0.0809$$

$$= 0.0546$$

E

1. Correlation between Loan Loss Provision and NPL

KBL, (Rs in millions)

Year	x1	x2	x1 * x2	$x1^2$	$x2^2$
2002/03	31.85	36.32	1156.792	1014.423	1,319.1424
2003/04	48.98	28.19	1380.746	2399.04	794.6761
2004/05	96.38	53.99	5203.556	9289.104	2,914.9201
2005/06	116	64.35	7464.6	13456	4140.9225
2006/07	133.42	66.2	8832.404	17800.9	4,382.4400
Sum (Σ) =	426.63	249.05	24038.1	43959.46	13,552.1011

Here,

x1= Loan Loss Provision x2 = NPL

∑X1 = 426.63 ∑x2 = 249.05

Σx1 *x2= 24038.1 $\Sigma x1^2$= 43,959.46

$\Sigma x2^2$= 13552.1011 N= 5 years

$$r_{x1x2} = \frac{n\Sigma x1x2 - \Sigma x1 \Sigma x2}{\sqrt{n\Sigma x1^2 - (\Sigma x1)^2}\sqrt{n\Sigma x2^2 - (\Sigma x2)^2}}$$

$$= \frac{(5 \times 24038.1) - (426.63 \times 249.05)}{\sqrt{[(5 \times 43959.46) - (426.63)^2]}\sqrt{[(5 \times 13552.1011) - (249.05)^2]}}$$

$$= \frac{120190.5 - 106252.2015}{\sqrt{(219797.3 - 182013.2)} \times \sqrt{(67760.5 - 62026)}}$$

$$= \frac{13938.2985}{\sqrt{37784.1} \times \sqrt{5734.603}}$$

$$= \frac{13938.2985}{194.38 \times 75.73}$$

$$= \frac{13938.2985}{14719.9461}$$

= 0.946 i.e. 94.68%

$$PE(r) = 0.6745\frac{1-r^2}{\sqrt{n}}$$

$$= 0.6745\frac{1-(0.946)^2}{\sqrt{5}}$$

$$= 0.6745\frac{1-0.895}{2.236}$$

$$= 0.6745\frac{0.105}{2.236}$$

$$= 0.6745 \times 0.047$$

= 0.0317

2. MBL, (Rs in millions)

Year	x1	x2	x1 * x2	$x1^2$	$x2^2$
2002/03	6.46	31.00	200.26	41.7316	961.0000
2003/04	16	25.00	400	256	625.0000
2004/05	68.79	20.00	1375.8	4732.064	400.0000
2005/06	78.14	16.99	1327.599	6105.86	288.6601
2006/07	190	85.17	16182.3	36100	7,253.9289
Sum (Σ) =	359.39	178.16	19485.96	47235.66	9,528.5890

Here,

x1= Loan Loss Provision x2= NPL

∑X1 = 359.39 ∑x2 = 178.16

Σx1 * x2= 19485.96 $\Sigma x1^2$= 47235.66

$\Sigma x2^2$= 9528.5890 N= 5 years

$$rx1x2 = \frac{n\Sigma x1x2 - \Sigma x1\Sigma x2}{\sqrt{n\Sigma x1^2 - (\Sigma x1)^2}\sqrt{n\Sigma x2^2 - (\Sigma x2)^2}}$$

$$= \frac{(5\times 19485.96) - (359.39\times 178.16)}{\sqrt{[(5\times 47235.66) - (359.39)^2]}\sqrt{[(5\times 9528.5890) - (178.16)^2]}}$$

$$= \frac{97429.8 - 64028.9}{\sqrt{(236178.3 - 129161.2)}\times\sqrt{(47643 - 31741)}}$$

$$= \frac{33400.8776}{\sqrt{107017.1}\times\sqrt{15901.9594}}$$

$$= \frac{33400.8776}{327.134\times 126.10}$$

$$= \frac{33400.8776}{41252.66}$$

= 0.809 i.e. 80.9%

$$PE(r) = 0.6745\frac{1-r^2}{\sqrt{n}}$$

$$= 0.6745\frac{1-(0.809)^2}{\sqrt{5}}$$

$$= 0.6745\frac{1-0.654}{2.236}$$

$$= 0.6745\frac{0.346}{2.236}$$

$$= 0.6745\times 0.155$$

$$= 0.104$$

Annex II

Testing Of Hypothesis

F. Calculation Of Expected Frequencies For Testing Hypothesis:

(E) = $\frac{RT \times CT}{N}$

Observed Frequencies(O)	**Expected Frequencies(E)**	**O - E**	**$(O-E)^2$**	$\frac{(O-E)^2}{E}$
39	$=\frac{R1\times C1}{N}=\frac{316\times 71}{628}=35.73$	3.27	10.69	0.299
31	$=\frac{R1\times C2}{N}=\frac{316\times 86}{628}=43.27$	-12.27	150.55	3.48
63	$=\frac{R1\times C3}{N}=\frac{316\times 121}{628}=60.89$	2.11	4.4521	0.73
70	$=\frac{R1\times C4}{N}=\frac{316\times 136}{628}=68.43$	1.57	2.46	0.36
55	$=\frac{R1\times C5}{N}=\frac{316\times 96}{628}=48.31$	6.69	44.76	0.93
58	$=\frac{R1\times C6}{N}=\frac{316\times 118}{628}=59.4$	-1.4	1.96	0.33
32	$=\frac{R2\times C1}{N}=\frac{312\times 71}{628}=35.27$	-3.27	10.7	0.303
55	$=\frac{R2\times C2}{N}=\frac{312\times 86}{628}=42.73$	12.27	150.55	3.52
58	$=\frac{R2\times C3}{N}=\frac{312\times 121}{628}=60.11$	-2.11	4.45	0.74
66	$=\frac{R2\times C4}{N}=\frac{312\times 136}{628}=67.57$	-1.57	2.46	0.36
41	$=\frac{R2\times C5}{N}=\frac{312\times 96}{628}=47.7$	-6.7	44.89	0.94
60	$=\frac{R2\times C6}{N}=\frac{312\times 118}{628}=58.62$	1.38	1.90	0.325
$\Sigma O = 628$	$\Sigma E = 628$			$\Sigma\frac{(O-E)^2}{E}=12.3$

G. Calculation Of Expected Frequencies For Testing Hypothesis:

$(E) = \frac{RT \times CT}{N}$

Observed Frequencies(O)	**Expected Frequencies(E)**	**O - E**	**$(O-E)^2$**	$\frac{(O-E)^2}{E}$
63	$= \frac{R1 \times C1}{N} = \frac{269 \times 127}{632} = 70.66$	-7.66	58.67	0.83
58	$= \frac{R1 \times C2}{N} = \frac{269 \times 103}{632} = 52.08$	5.92	35.04	0.67
45	$= \frac{R1 \times C3}{N} = \frac{269 \times 99}{632} = 50.05$	-5.05	25.5	0.51
48	$= \frac{R1 \times C4}{N} = \frac{269 \times 88}{632} = 44.5$	3.5	12.25	0.28
55	$= \frac{R1 \times C5}{N} = \frac{269 \times 115}{632} = 58.15$	-3.15	9.92	0.17
64	$= \frac{R2 \times C1}{N} = \frac{263 \times 127}{632} = 62.78$	1.22	1.48	0.024
45	$= \frac{R2 \times C2}{N} = \frac{263 \times 103}{632} = 51$	-6	36	0.71
54	$= \frac{R2 \times C3}{N} = \frac{263 \times 99}{632} = 48.94$	5.06	25.6	0.523
40	$= \frac{R2 \times C4}{N} = \frac{263 \times 88}{632} = 43.5$	-3.5	12.25	0.28
60	$= \frac{R2 \times C5}{N} = \frac{263 \times 115}{632} = 56.85$	3.15	9.92	0.174
$\Sigma O = 53.2$	$\Sigma E = 628$			$\Sigma \frac{(O-E)^2}{E} = 4.17$