Comparative Study of

Liquidity Management of Commercial Banks

(With reference to Kumari Bank Limited and Nabil Bank Limited)

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Submitted To:

Office of the Dean

Faculty of Management

Tribhuvan University

In partial fulfillment of the requirement for the degree of

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RECOMMENDATION

This is certify that the thesis

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Entitled

"Comparative Study of

Liquidity Management of Commercial Banks

(With reference to Kumari Bank Limited and Nabil Bank Limited)"

has been prepared as approved by this department in the prescribed format of the Faculty of Management. This is forwarded for examination.

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and found the thesis to be the original work of the student and written in according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirements for the Degree of Master's in Business Studies (MBS)

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DECLARATION

I hereby, declare that the work reported in this thesis entitled **"Comparative Study of Liquidity Management of Commercial Banks (With reference to Kumari Bank Limited and Nabil Bank Limited)"** Submitted to Shanker Dev Campus, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Degree of Master of Business Studies (M.B.S.) under the supervision of Mrs. Ruchila Pandey, Associate Professor of Shanker Dev Campus .

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Abbreviation

%	Percentage
&	And
A. D.	Anno Domini
AM ($\bar{X}$)	Arithmetic Mean
B. S.	Bikram Sambat
CA	Current Assets
CD	Cerficate of deposit
CL	Current Liabilities
CRR	Cash Reserve Ratio
Cum NA	Cumulative Net Assets
C. V.	Coefficient of Variation
DCBL	Development Credit Bank Limited
e. g.	Example
Etc	Etcetera
Fig.	Figure
F.Y	Fiscal Year
FSRP:	Financial Sector Reform Program
Govt.	Government
i. e.	That is
IRC	Interest Rate Changes
KBL	Kumari Bank Limited
Ltd.	Limited
MBA	Masters in Business Administration
MBS	Masters in Business Studies
NIBL	Nepal Investment Bank Limited
NBL	Nabil Bank Limited
NDBL	Nepal Development Bank Limited
NRB	Nepal Rastra Bank
P.E	Probable Error
PEs	Public Enterprises
ROA	Return on Assets
Rs.	Rupees
SBL	Siddhartha Bank Limited
S.D.	Standard Deviation
TAs	Total Assets
T.U.	Tribhuvan University
www	World Wide Web

CHAPTER - I
INTRODUCTION

1.1 General Background

The word bank originates Italian word 'Banca' meaning a bench on which the banker would keep its money and his transaction records. The history of modern banks begins from Bank of Venice established in 1157 AD, Bank of Barcelona established in 1401, Bank of Geneva established in 1407, Bank of Amsterdam established in 1609 and bank of England which was established in 1694. 'Bank of France' established in 1800 AD The ancestors of modern day banks have been attributed to merchants, the goldsmiths and the money lenders.

In Nepal there was no organized banking system before 1994 B.S. and few moneylenders carried out all the monetary transaction people had done their financial transaction with local money lender or landlords who charged high interest rate. Economic liberalization policies of HMG led to a dozen of commercial banks actively playing in the financial market of the kingdom.

In early India, the religious book namely 'Manu' contains references regarding deposits, pledges, policy of loan and rates of interest. The banking service in those days largely meant only money lending. The complicated mechanism of modern banking was not known to them.

Meaning & Definition of Bank

Bank is one type of financial institution especially operating its transaction day to day with directly involves in financial as well as economics activities. Bank is a custodian of money received from the depositors. A bank is an organization, the major function of which is to deal in money and credit. Bank's main business is to pool the scattered idle deposits in the public and channel it to productive use. Bank collects deposits and

lends or invests to those who stand in need of money. Modern day bank's business is not confined in borrowing deposits and lending advances only, it performs a host of other financial activities which has immensely contributed to achieve industrial and commercial progress of every country.

According to G. Crowther "A bank is an institution which collects money from those who have it spare or who are sharing it out of their income and lends this out to those who require it ."

As per R. S. Sayers - "A bank is an institution whose whole debts are widely accepted in settlement of other people's debts."

Chambers Twenties Century Dictionary defines a bank as on "Institution that accepts deposits from the public and in turn advances loans by creating credit. "

As per Banking resolution Act of India-"Banking means the accepting for the purpose of lending or investment of deposit of money from the public repayable on demand or otherwise and withdraw by cheque, draft or otherwise."

As per U.S. Law - "Any institution offering deposits subject to withdrawal on demand and making loans of a commercial or business nature of the bank."

Therefore, a bank is an institution that accepts deposits from the public and in turn advances loans by creating credit. Banking system has evolved itself as an integral part of trade, commerce and industry. Financial sector is the lifeblood of the commercial and industrial activities. So, commercial banks and other financial institutions can play a vital role in giving a direction to economy's development by financing the requirement of trade and industry in the country. They collect the saving from community and transfer to the require sector of trade and industries, so that banking sector development is necessary to economy development.

Liquidity Management

Liquidity is the availability of cash at the time needed at a reasonable cost. The capacity of banks to exchange cash for deposit is the liquidity. It is the asset of bank in form of cash and near about cash. Near about cash means the assets, which can be converted into cash immediately without losing the value of them. The examples of liquid asset is cash, marketable securities, short term loans, deposits, receivables The

banks capacity to meet immediate maturing liabilities is the liquidity of banks. Liquidity is the most important factor to the commercial banks and financial institutions. A commercial bank needs a high degree of liquidity in its assets. Banks maintain liquidity in various forms like ready cash at its disposal, certain percentage at central bank as a statutory requirement, makes placements in other banks and some percentage is utilized in investment on government securities. So those banks never fail to meet daily cash demand. A bank is considered to be liquid if it has ready access to immediately spendable funds at reasonable cost at the time these funds are needed.

Lack of adequate liquidity is often one of the first signs that a bank is in serious financial trouble. The troubled bank usually begins to lose deposits. This destroys its supply of cash and forces the bank to dispose is more liquid assets. In this situation, other banks become increasingly reluctant to lend the troubled bank any funds without additional security or a higher rate of interest. This will further reduce the earnings of the problem of bank and threatens it with failure. Liquidity position of banks is very important to maintain the public faith upon banks. People deposit their precious assets and funds into bank with the faith that banks repay it with guarantee as agreed terms and conditions. When bank fails to repay deposited money on demand, it leads to the loss of public faith upon banks. The accountholders run into bank to withdraw their deposited money. Bank keeps more liquidity loses the opportunity of investment and profit and if bank keeps less liquidity, then it will loses the goodwill and believe from the customers.

High liquidity is not good for the commercial Banks and the crisis of liquidity too is not good. How much liquidity exists in the economy in a particular period depends on the policy of the central bank, the commercial banks, common people and the government. Due to high liquidity in the form of cash, the banks are not being able to proper utilize the cash collected from depositors. In this situation, the banks earn less return from lending .

The basic importance of bank liquidity can be presented as:

- To maintain Cash reserve ratio
- To sustain Statutory liquidity ratio
- To provide loan to the customer
- To Pay dividend

- To bear risk
- To growth and Expansion of modern banking sector.
- To be safe from fluctuation

Their are many factors that affect banks liquidity. These factors are Rules for reserve fund, Banking habit of the people, Banking system, Condition of money market, Condition of capital market, Nature and condition of the economy, Business condition, Nature of loan advances etc.

1.1.1 History of Banking System in Nepal

The history of organized banking system in Nepal is very short. Late former Prime Minister Judda Samser Jung Bahadur Rana established first bank, Nepal Bank Limited in 1994 B.S. the bank was established to remove the inconveniences caused to the people. When the concept of planning was formulated, there are needed for established a central bank. From the view point of planning, it is necessary that the banking activities specially the loans should be regulated as per priority, thus, Nepal Rastra Bank as the central bank was established in 2013 B.S. for the developing of the financial sector under Nepal Rastra Bank Act 2012. In a developing country like Nepal, the central bank is supposed to help in developing banking system for mobilization of financial resources and using them into the priority areas as fixed in the development plans.

In the year 2022, another commercial bank Rastriya Banijya Bank was established under the "Rastriya Banijya Bank Act 2021". It was specially established in the response to need for forming a government owned commercial bank to look after the convenience and economic interest of general public. After a long period of establishment of these two banks, NABIL Bank is the first commercial bank from the private sector. This is the first joint venture bank of Nepal also. There after many other joint venture and non joint venture banks were set up under the Commercial Bank Act, 2031and Company Act, 2053.Now, twenty-six Commercial banks are operating in the country.

The 19th century comes with the vast scope of development of commercial banking. It witnessed not only the phenomenal development of modern problem enabling banks to turn their attention away from old money. In 1980's to meet the need of healthy competition in financial sector, Nepal allowed to entry of foreign bank as a joint

venture with up to 51% of equity participation. Recently Nepal has allowed to entry to foreign bank as a joint ventures with up to maximum of 75% of equity participation. The 20th century observed the development of various banking institutions highly specialized and sophisticated particularly in advances countries like USA, UK & others. In 2005, Nepal has entered as a member of world trade organization. After entering world trade organization, Nepal has committed to open its financial sector for foreign bank to establish branches of their bank by 2010 A.D.

The history of banking system in Nepal can be summarized in four stages.

- Historical Age
- Commencement of banking system in co-operation with the government
- Introduce of Liberalization in the banking system
- Universal Banking Development

1.1.2 Commercial Banks in Nepal

Bank undertaking businesses with the objective of earning profits are commercial banks. In absence of commercial banks, it would have been impossible to meet the financial needs of the country.

According to A. C. Hart, "A banker or bank is a person or company carrying on the business of receiving money and collecting drafts for customers subject to the obligation of honoring cheque drawn upon them from time by the customers to the extent of the amounts available in their current accounts."

Commercial Bank Act 1974 defines "A commercial bank means bank which deals in exchanging currency, accepting deposit, giving loans and doing commercial transactions".

Functions of commercial Banks

1. Accepting deposits in various types of accounts
2. Remit funds.
3. Provide credit in the form of various loans, overdraft, and co-financing to industry, commerce, agriculture, export and import service.
4. Function of foreign exchange,
5. Invest in government securities, treasury bills etc.
6. Purchase or sale of securities.
7. Provide agency functions i.e. collection of cheques, bills, promissory notes etc.
8. Execute standing instructions such as payment of rent, insurance premium, income

tax etc. on behalf of their customers.

9. Help in foreign trade
10. Underwrite shares floated by government bodies and public bodies.

There are 26 commercial banks in Nepal which are listed below:

Table: 1.1

Commercial Banks in Nepal

S.N.	Name of Bank	Established Date	Head Office
1.	Nepal Bank Ltd.	1994/07/30	Kathmandu
2.	Rastriya Banijya Bank Ltd.	2022/10/10	Kathmandu
3.	NABIL Bank Ltd.	2041/03/29	Kathmandu
4.	Nepal Investment Bank Ltd.	2042/11/16	Kathmandu
5.	Standard Chartered Bank Nepal Ltd.	2043/10/16	Kathmandu
6.	Himalayan Bank Ltd.	2049/10/05	Kathmandu
7.	Nepal Bangladesh Bank Ltd.	2050/02/23	Kathmandu
8.	Nepal SBI Bank Ltd.	2050/03/23	Kathmandu
9.	Everest Bank Ltd.	2051/07/01	Kathmandu
10.	Bank of Kathmandu Ltd.	2051/11/28	Kathmandu
11.	Nepal Credit and Commerce Bank Ltd.	2053/06/28	Siddharthanagar
12.	Lumbini Bank Ltd.	2055/04/01	Narayangadh
13.	Nepal Industrial and Commercial Bank Ltd.	2055/04/05	Biratnagar
14.	Kumari Bank Ltd.	2056/08/24	Kathmandu
15.	Machhapuchhre Bank Ltd.	2057/06/17	Pokhara
16.	Laxmi Bank Ltd.	2058/06/11	Birgunj
17.	Siddhartha Bank Ltd.	2058/06/12	Kathmandu
18.	Agriculture Development Bank	2062/03/30	Kathmandu
19.	Global Bank Ltd.	2063/09/18	Birgunj
20.	Citizens Bank International Ltd.	2064/01/07	Kathmandu
21.	Prime Commercial Bank Ltd.	2064/06/07	Kathmandu
22.	Bank of Asia Nepal Ltd.	2064/06/25	Kathmandu
23.	Sunrise Bank Ltd.	2064/06/25	Kathmandu

24.	Development Credit Bank Ltd.	2065/02/12	Kathmandu
25.	NMB Bank Ltd.	2065/02/20	Kathmandu
26.	Kist Bank Ltd.	2066/01/24	Kathmandu

Sources: Banking & financial statistics Mid January 2010, Nepal Rastra Bank (Banking & operation Department), No.53

1.2 Introduction of the company under the study

1.2.1 Introduction to Kumari Bank Limited

Kumari Bank Limited, came into existence as the fifteenth commercial bank of Nepal by starting its banking operations from Chaitra 21, 2057 B.S (April 03, 2001) with an objective of providing competitive and modern banking services in the Nepalese financial market. Kumari Bank Ltd has been providing wide - range of modern banking services through 22 points of representations located in various urban and semi urban part of the country, 13 outside and 9 inside the valley. The bank is pioneer in providing some of the latest banking services like E-Banking and SMS Banking services in Nepal. The bank always focus on building sound technology driven internal system to cater the changing needs of the customers that enhance high comfort and value. The adoption of modern Globus Software, developed by Temenos NV, Switzerland and arrangement of centralized data base system enables customer to make highly secured transactions in any branch regardless of having account with particular branch. Similarly the bank has been providing 365 days banking facilities, extended banking hours till 7 PM in the evening, Utility Bill Payment Services, Inward and Outward Remittance services, Online remit Services and various other banking services.

The capital Structure of KBL is as follows.

Authorized Capital NRs. 160 million

Issued Capital NRs. 118.6 million

Paid up Capital NRs. 118.6 million

Total Share of Kumari Bank Limited are subscribed as follows:-

- Private Sector Promoters 69.88%
- Institutional Promoters 0.12%
- General Public 30%

Total	**100%**

Mission

- Provide world class service to the customers at a higher satisfaction level.
- Practice total quality management and embrace good governance.
- Optimize assets to achieve sound business growth.

Vision

- Customer satisfaction is the 1st priority of bank
- Employees have direct input and control over work processes.
- Employees are treated equitably, with respect and good faith.
- Transparent in dealings and conduct.

Values

- Teamwork
- Driven
- Initiative
- Adaptable to changes
- Professional
- Always striving to improve quality of service
- cost conscious
- High ethical standards
- Compliance.

1.2.2 Introduction to NABIL Bank Limited

Nabil Bank Limited was first joint venture bank in Nepal, established in 2041 B.S. under commercial bank act 2031 and company act 2021. This bank has renamed as Nabil Bank Limited from 1st January 2002. First, Dubai Bank Limited was partner of 50% equities capital. Later Dubai Bank Limited takeouts its hand from this bank and transferred its equities share capital to National Bank Limited of Bangladesh. Nabil, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business. This bank is the leader in bringing the best international standard of banking practices, products & services.

The capital Structure of NBL is as follows.

Authorized Capital NRs. 1600 million

Issued Capital NRs. 965.7 million

Paid Up Capital NRs. 965.7 million

Total Share of Nabil Bank Limited are subscribed as follows:-

National Bank Limited Bangladesh	50%
Nepalese public shareholders	30%
NIDC	10%
Rastriya Beema Sasthan	9.66%
Nepal stock exchange	0.34%
Total	**100%**

Mission

- To be the Bank of 1st choice to all the stakeholders
- To be the first choice in meeting all the financial requirements for the customer
- To be the investment of choice for the shareholders.
- Practice total quality management and embrace good governance and be the example of model bank for the regulators.

Vision

- A full service bank providing an entire range of products / starting with deposit , Visa & Master Card,
- Customer satisfaction is the 1st priority of bank
- Employees are treated with respect, good faith & provided equal opportunities.
- The bank is transparent in their dealings & conduct.

Values

- Customer Focused, Result oriented, Innovative, Synergistic & Professional

Service offered by Nabil Bank Limited

Nabil Bank Limited has offers various types of services to its customers are as follows:-

a. Accepting deposits from it customer in various account like current, fixed and saving account.
b. Granting loan and advance in terms of overdraft, demand loan, time loan, making investment in treasury bills, foreign bills and indigenous bill.
c. Discounting bills.
d. Providing bank guarantee

e. Opening facility of letter of credit

f. Remittance service

g. Issuing traveler cheques.

h. Safety locker's facility.

1.3 Statement of the Problem

There are various commercial banks operating their activities in the different part of the country. Banks are not to be considered merely as dealers of money but also the leaders in development.

The management of cash and liquidity is synonymous to the management of working capital. It is very essential to analyze and find out problems and its solutions to make efficient use of funds for minimizing the risks to attain profit objectives. Cash is the most important current assets for the operation of the business firm, which includes coins, currencies and cheques, held by firm. The adequate level of cash is the secret of success of the every business organization.

Banks pay the depositors their money when demanded, and if this is not met, it damages the bank's image. The confidence of the public will be lost and this leads the bank towards its downfall. So, banks should not invest all the money it has on exposure based assets only, as it will not be repaid when required. Therefore, banks keep a certain percentage of their fund on such assets that can be utilized as need arises. Very high liquidity position of bank shows the investment problem, in this situation bank will face the problem earning profit this will impact on paying interest on deposits, salaries of staffs and cannot give dividend for its shareholders.

Banks maintain liquidity in various forms like ready cash at its disposal, certain percentage at central Bank (NRB) as a statutory requirement, makes placements in other banks and some percentage is utilized in investment on government securities. The study will look for the reasonable reasons on the following concentration areas of KUMARI Bank Ltd and NABIL Bank Ltd.

1. To what extent is it to predict liquidity?
2. What is the impact of liquidity on banking transactions?
3. Whether the financial performance of these banks are sound or not?
4. Do these banks have given a satisfaction to its stakeholders?

5. Whether the bank allocates the cash efficiency in banking operation or not?
6. What is the main cause of increasing or decreasing liquidity in commercial banking sector?
7. Do the liquidity increase in lack of secured investment opportunities?

1.4 Focus of the Study

The concept of financial institutions in Nepal was introduces when first commercial bank, the Nepal Bank Limited was established in 1994 B.S as a semi government financial institution. Bank is a business organization where monetary transaction occurs. It creates fund from its clients saving and lends the same to needy person or business companies in terms of loans, advances and investment.

Most of the financial decisions of a bank are concerned with current assets and current liabilities, so this study is a reference regarding the liquidity position of KUMARI Bank Ltd and NABIL Bank Ltd

1.5 Significance or important of the study

Management of liquidity is very crucial part of the day to day operation of the business firm. This study entitled "Comparative study of, **Liquidity Management of Commercial Banks** (with reference to KUMARI Bank Limited and NABIL Bank Limited)" is focused on the liquidity management. This study will be beneficial to different parties concerned with two bank as well as other interested parties.

Especially it will be beneficial to,

1) Management of two banks.
2) Lenders and borrowers of these banks.
3) Policy maker of these banks.
4) Concerned parties and general interested parties of the banks.
5) Customers of these banks.
6) Student, researcher, executive and professionals who want to study into the liquidity management of KBL and NBL.

1.6 Objective of the study

The main objective of this study is to analyze and examine the liquidity position of KUMARI Bank Ltd and NABIL Bank Ltd i.e. management of individual current assets like cash and bank balance. The following points will be considered in the research.

1. To find out the liquidity, activities or turnover and profitability ratios of the banks.
2. To examine and critically analyze the cash management practices of the banks.
3. To provide suggestion for both on the basis of findings.

1.7 Limitation of the study

This research explains and analysis the subject matter with the help of well known or already established analytical method and techniques, therefore as a conclusion oriented research. It does not much concern with the fundamental and decision oriented research. This research depends upon only five-year annual report of both banks as well as some primary data of the both banks.

Following are the limitation of this study:-

1. It will only focus on KUMARI Bank Ltd and NABIL Bank Limited covering the period of five years (i.e. 2004\2005 to 2008\2009)
2. The whole study will be based on secondary data.
3. The study follows with specific tools such as ratio analysis, mean, trend and correlation etc.
4. The ratios were analyzed based on previous year's financial statement of the selected banks.
5. Time and resource constraint may limit the area cover by study.

1.8 Organization of the study

The study will be organized into five chapters each devoted to some aspect of the study on "Comparative study of, **Liquidity Management of Commercial Banks** (with reference to KUMARI Bank Limited and NABIL Bank Limited)" The titles of these chapters will be as follows.

Chapter-1 Introduction

Chapter-2 Review of Literature

Chapter-3 Research Methodology

Chapter-4 Data Presentation and Analysis

Chapter-5 Summary, Conclusion and recommendations

The rational behind this kind of organization is to follow a simple research methodology approach, The contents of each of the chapters of this study are briefly mentioned below.

Chapter-1 Contains the introductory part of the study. As already mentioned, this chapter describes the major issues to be investigated along with the general background and objective of the study, importance of the study, limitation of the study and organization of the study.

Chapter-2 Confines the review of literature of related studies in journals (literature) and review of related studies in Nepal with reference to previous thesis and policies of the government.

Chapter-3 Describes the research methodology employed in the study. It includes research design, sample size, data collection procedure and tools used for analysis.

Chapter-4 Deals with the systematic presentation and analysis of the data. It also includes major findings.

Chapter-5 Contains Summary, conclusions and recommendation of the study. This chapter presents the major findings. It also offers recommendations**.**

CHAPTER-II

REVIEW OF LITERATURE

2.1 Theoretical Review

2.1.1 Meaning of liquidity

"Liquidity is the status and part of the assets that can be used to meet the obligation in the commercial banks. Liquidity can be viewed in terms of liquidity stored in the balance sheet and in terms of liquidity available through purchased funds." (Bhandari; 2004:143)

'Liquidity is the availability of cash at the time needed at a reasonable cost.'
(Rose; 2002: 345)

"Liquidity refers to bank's capacity to pay off the liabilities in all those currencies. Maintaining excess liquidity in one currency while demand is for other currencies is not effective liquidity management because the liability in the demanded currency can not be met." *(*Dahal and Dahal*;* 2002:95)

"Liquidity management is the part of risk management framework of the financial services industry, which concerns all financial institutions whether they are commercial banks or development banks or finance companies or other financial institutions." *(*Shrestha; 2061: 16)

As per manning Decay," An asset is completely liquid, if its owner can count with absolute certainty on turning it into cash at a very short notice and without loss". This means, the asset should be easily converted into cash at a short notice without any loss of assets.

According to D. W. Pearce, "Availability of cash, and of assets readily convertible into cash, to meet immediate obligations ", this means, process, time and cost of conversion of liquid assets should be little.

The amount of liquidity that a common banking system should maintain is one of the basic problems of the bank management. If too much liquidity is maintained, it

means that the bank &banking system are fore going income. To little however, may be fatal not only to an individual bank but to the commercial banking system as a whole, the financial structure of the country & the economy of the nation. Too little liquidity & the demands of the depositors in the form of 'runs' on the banks are like oil & water, they do not mix well. (Reed; 2002:115)

Liquidity management is a tough task to be discharged by the management of every business entity. Managing liquidity for a bank involves having enough cash on hand and being able to borrow cash at reasonable cost in order to meet cash needs exactly when they arise. A bank's need for liquidity – immediately spendable funds- can be viewed within a demand – supply framework. The most pressing demands for spend able funds come from two sources: customers withdrawing money from their deposits, and credit requests from customers the bank wishes to keep either in the form of new loan requests, renewals of expiring loan agreements or drawings upon exiting credit lines.

To meet the foregoing demands for liquidity, banks can draw upon several potential sources of supply. The most important source normally is receipt of new customer deposits, both from newly opened accounts and from new deposits placed in existing accounts. Another important element in the supply of bank liquidity comes from customers repaying their loans, which provides fresh funds for meeting new liquidity needs, as do sales of bank assets, especially marketable securities from the bank's investment portfolio. These various sources of liquidity demand and supply come together to determine each bank's net liquidity position at any moment in time.

The significant exposure of banks to liquidity pressures arises from several sources. First, banks borrow large amounts of short-term deposits and reserves from individuals and businesses and from other lending institutions and then turn around and make long term credit available to their borrowing customers. Thus, most banks face some imbalances between the maturity dates on their assets and the maturity dates attached to their liabilities.
Rarely, will incoming cash flows from assets exactly balance the cash flowing out to cover liabilities.

2.1.2 Strategy for Liquidity management

There are three basic liquidity management strategies for liquidity managers for dealing with the bank liquidity problem. They are asset liquidity management, borrowed (liability) liquidity management, and balanced (asset and liability) liquidity management. (Rose; 2002:350)

2.1.2.1 Asset liquidity management or asset conversion strategy

This liquidity management strategy is often called asset conversion because liquid funds are raised by converting non-cash assets into cash. It is a technique of storing liquidity in the form of assets. This is the oldest approach to meet bank liquidity needs. Such liquid assets must have ready market and have stable price .When liquidity is needed; liquid assets are sold for cash until the entire bank's demands for cash are net . There is an opportunity cost to storing liquidity in assets when those assets must be sold. This strategy is used mainly by smaller banks that find it a less risky approach to liquidity management. This strategy also results in lower earnings**.**
Generally, the liquid assets have the following characteristics.

a. Ready market: Liquid assets must have a ready market so that it can be converted into cash without delay.

b. Reversible: Liquid assets must be reversible so that the seller can recover the original investment with little risk of loss.

c. Stable price: They must have reasonably stable price so that, no matter how quickly the assets must be sold or how large the sale is.

2.1.2.2 Borrowed Liquidity (Liability) Management strategy

This strategy is also known as purchased liquidity or liability management and it involves borrowing from money market to offset liquidity need. Banks can choose to borrow funds from- federal funds, reserves from central banks, issuing negotiable certificate of deposits etc; This approach is the most risk approach to liquidity management. It is risky because of the volatility of money market interest rate, which is subject to change rapidly. More often banks must purchase

liquidity when it is most difficult to do so, both in cost in availability. The banks borrowing cost is always uncertain, which adds greater uncertainty to the banks net earnings. This strategy also has the highest expected return.

A bank gets into financial trouble is usually most in need of borrowed liquidity. Because information of the bank's difficulties spread outside the bank, other financial institutions become less willing to lend to the troubled bank due to the risk factor. At this time depositors begin to withdraw their funds. These activities may cause the bank even fall deep in financial difficulties.

2.1.2.3 Balance Liquidity Management strategy

This strategy combines the use of asset conversion and borrowed liquidity approaches. It is the best liquidity management strategy. Under a balance liquidity management strategy some of the expected demands for liquidity are stored in assets, while other anticipated liquidity needs are backstopped by advance arrangements for lines of credit from correspondent banks or other suppliers of funds. Unexpected cash needs are typically met from near term borrowings. Longer term liquidity needs can be planned for and funds to meet them parked in short term and medium term loans and securities that will roll over into cash as those liquidity needs a rise.

"For the Commercial bank, sufficient liquid assets should be maintained to meet day to day needs of customers as well as overcome the withdrawal vulnerability of large deposits in the form of cash. At the same time, there are statutory reserve requirements of control bank compelling the development bank to maintain cash in their vaults and account in order to protect them from liquidity brunch. Commercial bank has to maintain an appropriate cash balance to meet banking transactions and make payment for purchase taxes, operating expressing, dividends, interests etc. in usual course of business, hence the bank manages must be cash conscious." *(Shrestha ; 2004:257)*

The liquidity position of the company as a basis for determining future borrowing and future investments. For example, excess cash if not invested, incurs an opportunity cost that is loss of the interest that could be earned. The timing of

cash flows can be controlled in many ways by management, such as increasing the effectiveness of credit and collection activities, making payment by time draft rater than cheque, and the last day of discount period batching payments and giving discount on cash sale. Many lending agencies require cash flows projections before granting loan. Cash management is important.

2.1.3 Different Technique of Liquidity Management

a) Liquidity Budget

It shows the firm's projected liquidity inflows and outflows over some particular period. It provides much more detailed information concerning firm future liquidity flow.

b) Liquidity planning

Liquidity plan is a technique to plan and control the use of liquidity. Liquidity plan may be done weekly; monthly or daily basic. It depends upon the size of business.

c) Long Term liquidity forecasting

The major use of long term liquidity forecast are company's financial needs, working capital requirement and it helps to improve corporate planning. Long term cash forecasting not only reflects more accuracy the impact of any recent acquisitions but also foreshadow financing problems; these new additional may past for the company. Long term liquidity forecasting give an idea of company's future financial requirements.

d) Short Term liquidity Forecasting

There are two methods of short term liquidity forecasting.

1) Receipt and disbursement forecasting

This method is favored to keep a control over liquidity. The prime aim of receipt and disbursement forecasts is to summarize these flows during a predetermined period. In case of those companies where cash items of income and expenses involve flow of cash:

2) Adjusted Net income method

This method of liquidity predicting involves tracing of working capital flow. It is also called the sources and uses approach. Bank liquidity rises as deposits increase and loans decrease. Bank liquidity declines when deposits decrease and loans increase. This approach is based to existence of liquidity gap between source and use of funds. If the sources and uses do not match, the bank has a liquidity gap measured by the size of total difference between its sources and uses of funds.

2.1.4 Liquidity Management Model

Liquidity is the most sensible and crucial aspect of banks. The financial manager should have adequate knowledge of surrounding environment for proper management of cash and liquidity portion of a bank. The firm maintains less cash balance more than it needs, the firm may loose many opportunities If the firm maintains a high level of cash balance it will have a sound liquidity position but forego the opportunity to earn interests. Thus, the firm should maintain an optimum cash balance. Cash is the most important liquid assets for the operation of the business house. It is the basic input needed to keep the business running in a continuous basis. The term cash includes coins, currency and cheque held by the firm and balances in

2.1.4.1 Baumol's Model for Cash Balance

In view of minimizing the opportunity cost of holding cash and maximizing the return on the available funds, the cash balance should be maintained at a minimum level and the fund which is not required for immediate use be invested in the marketable securities. Baumol model is one of the methods that can be used for this purpose. Baumol model is based on the assumption that;

1) Cash is used at constant rate
2) The firm is able to forecasts its cash needs with certainty.
3) The firm's cash payment occurs uniformly over a period of firm.
4) The opportunity cost of holding cash is known and it does not change over time.
5) The firm will incur the same transaction cost whenever it converts securities to cash.

Under this Model Optional Cash Conversion size $C^* = \sqrt{\frac{2bt}{i}}$

Where,

b = Fixed transaction cost per transaction

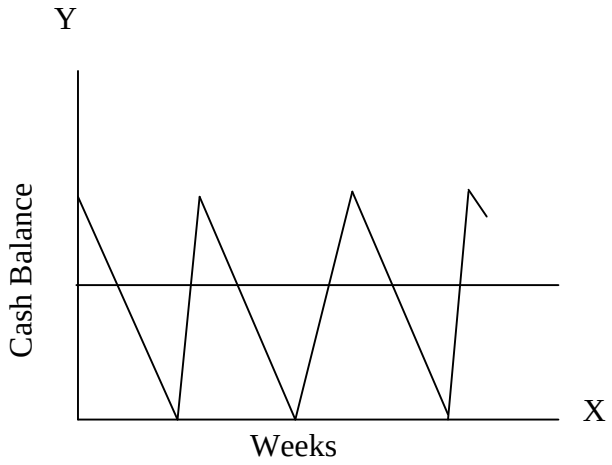
T = total cash need over the period

I = opportunity cost period

C^* = Optimal cash conversion size

The graphical representation of cash position looks like as follows.

Figure: 2.1
Baumol's Model for Cash and liquidity Balance

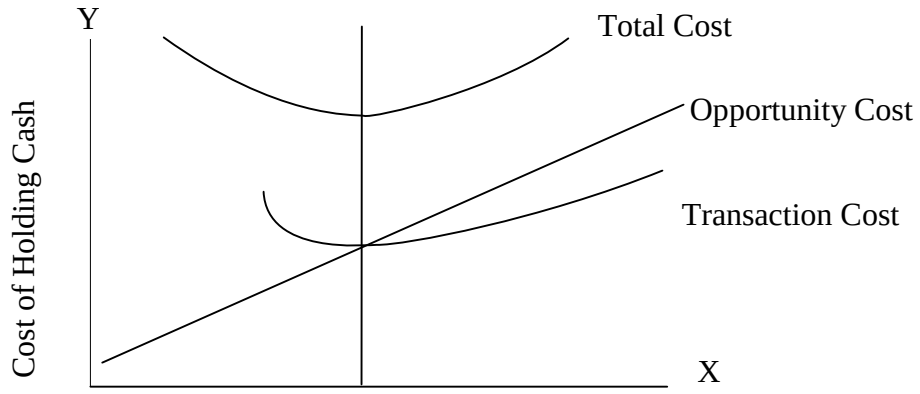


(Source: Kharel; 2008:26)

Given its assumption, the model prescribes an optimal size of cash balance and the optimal size of account of borrowing. What matter for a firm is the total of opportunity cost and the transaction cost? Therefore, the objective of this model is to minimize the total cost. The figure below shows the relationship between the average size of cash balance and various costs associated with cash maintenance.

Figure: 2.2

Relationship between average size of cash balance & cash maintenance



(Source: Kharel; 2008:29)

2.1.4.2 The Miller – Orr Model

The size of cash needs depends on the pattern and degree regulating of inflow and outflow. This model is based on the assumption that daily net cash flow receipt minus payment. It helps to know negative or positive flow. The Baumol model does not consider the possible irregularity and uncertainty of receipt and payment. Miller had developed a model known as miller model .That takes into account the realistic pattern of cash flow and prescribed when and how much transfer from cash to investment and vice versa. The model sets arrange of high and low limits within when the cash balance is allowed to fluctuate and sets the target cash balance in between two limits.

Mathematically the model is set as follows.

Under this model return point (Z) $X3\sqrt{\frac{3b\pm^{2}}{4i}}$

Where,

b = Fixed transaction cost per transaction

∃ = Variance of daily weakly cash flow

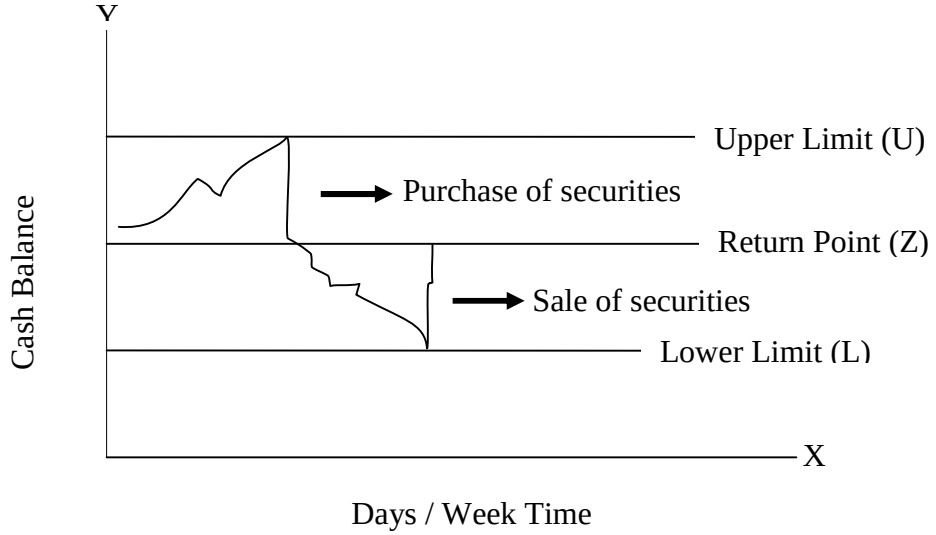
I = Dally/weakly interest rate on marketable securities

Z = Collection return point

L = Minimum cash balance

Figure: 2.3

Graphical presentation of Miller-Orr model of cash balance



(Source: Quarterly Journal of Economics, no. 80, August 1966)

2.1.5 Factors Influencing Bank's Liquidity

Generally, need of bank liquidity is affected by the following factors (Singh and Khadka 2058)

a) External Environment Factors:

i) Prevailing interest rate of bank: if interest rate is high demand is low & liquidity need is low.

ii) Saving & investment situation: if income & saving scale of people is high, less liquidity. If investment in commercial field is high, high liquidity.

iii) Growth & scheming position of the financial market: if opposite, high liquidity.

b) Internal Factors:

i) Lending policy of bank: Great quantity for long-term investment needs high liquidity. If short-term loan policy, low liquidity.

ii) Management capacity: If management is efficient & ready to bear risk, low liquidity is needed.

iii) Strategic planning & funds flow situation: Liquidity depends upon planning & strategy. Current A/C needs high liquidity & payment for fixed deposit needs low liquidity.

2.1.6 Demand & supply of Bank Liquidity

Government securities, shares and debentures are also known as bank liquidity. They are near about cash as they can be sold into market without losing their value. Bank liquidity is the total balance of cash and near about cash. Cash is the most liquid asset of bank. Sources of Demand and Supply for liquidity within the banks are presented below.

Table: 2.1

Sources of Demand and Supply for Liquidity within the Banks

Demand of Bank Liquidity	Supply of Bank Liquidity
Withdrawals of customer deposit	Customer Deposits
Acceptable Loan Requests	Interest on bank Loan
Repayment of Non deposit Borrowings	Revenue from the Sales of Non-deposit services
Payment of Interest	Loan Repayment
Operating Expenses and Taxes	Sale of Assets
Payment of stockholder Cash Dividends	Borrowings From Money Market
Expansion of Growth	Reserve Funds
Cash Reserve Ratio	Share capital

Source: Bhandari (2004), Banking and Insurance: Principle and Practice

a) Withdrawals of customer deposit: Bank accept mainly three types of deposits i.e. current, fixed and saving deposits. Saving and current deposits are refunded on demand of accountholders and fixed deposit is refunded after expiry of due date.

b) Acceptable Loan Requests: Bank liquidity is demanded by borrowers. Bank need to maintain certain level of liquidity to approve loan proposal. When loan proposal is accepted, banks should be able to pay the sum as the commitment made with the loan applicant.

c) Repayment of Non deposit Borrowings: When banks need liquidity, they borrow loan from money market. Such loan should be repaid with interest after expiry of due date.

d) Payment of Interest: The payment of interest on deposit also demands for bank liquidity. Banks have to pay interest on the deposit collected under fixed account and saving account.

e) Operating Expenses and Taxes: Bank need certain liquidity to meet administration expenses such as payment for salary, rent, stationery, telephone, electricity, taxes etc. Bank should control the administration expenses to minimize the level of liquidity and maximize the investment.

f) Payment of stockholder Cash Dividends: When banks run in profit, they should entertain stockholders with cash dividends. It is essential to increase the value of stockholders.

g) Expansion of Growth: Bank should provide additional liquidity for modification, modernization, expansion and growth. Research and survey programs should be conducted to find out new sectors of banking services. There should be additional budget need and demand bank liquidity

h) Cash Reserve Ratio: All commercial banks have to maintain certain cash balance as cash reserve in central bank. Similarly, there should be certain cash balance in the bank vault. The minimum there balance should be maintained by law. It is called statutory liquidity ratio. For this purpose, liquidity is demanded by bank. When cash reserve ratio and statutory liquidity ratio are increased by the central bank, the demand for liquidity increased.

Supply of Bank Liquidity: All source of bank fund are known as the supply of bank liquidity. The major sources of bank liquidity are given below.

a) Customer Deposits: Commercial banks accept public deposits under various accounts. This is the most important source of bank liquidity.

b) Interest on bank Loan: The main objective of advancing loan is to earn interest. Bank must earn interest to meet expenditures. The basic concept of banking is to accept deposit in lower interest rate and advance it as loan is higher interest rate. The spread rate between them is the profit of bankers.

c) Revenue from the Sales of Non-deposit services: Bank render various types of services like collection of cheques, transfer of fund, issue of letter of credit, bank guarantee etc. They are called non deposit services of bank. They earn bank charges and commission against rendering these services.

d) Loan Repayment: After proper evaluation, banks accept loan proposals and provide loan to the borrowers. In installment system, loans are repaid with interest on monthly basis. Hence, repayment of loan is also known as the source of bank liquidity.

e) Sale of Assets: Bank can purchase land, building, furniture, computer, machines and equipments as required for the daily banking operation. Such fixed assets can be sold and converted into liquidity, whenever needed. Thus sales of fixed asset may become the source of bank liquidity.

f) Borrowings From Money Market: Banks can easily borrow money from the money market. Finance companies, capital market, insurance companies, saving and investment institutions, provident fund office, citizen investment funds etc. are the major sources of liquidity under bank liquidity.

g) Reserve Funds: Reserve fund are created from the profit. Certain percentage of annual profit is appropriated to reserve funds such as general reserve, reserve for doubtful debt, depreciation fund etc. The amount separated for reserve funds is generally deposited in other financial institutions. In this way, such reserve funds are one of the sources of bank liquidity.

h) Share capital: Commercial banks are the business organizations established under Joint Stock Company. Like other companies, banks raise capital by issuing shares in general public. So the issue of capital is important source of bank liquidity.

2.1.7 Why Banks Face Significant Liquidity Problems

Banks face major liquidity problems. The bank faces the liquidity problems for these reasons.

2.1.7.1. Maturity mismatching

Firstly, banks collect deposits from accountholders. Generally such deposits are received for short-run. Then banks turn around to borrow large amounts of short-term borrowings and reserves from other lending institutions. In short run

borrowing, lower rate of interest rate is payable for short duration of time. To earn higher interest for longer time-period, banker generally, turns around to make long-term credit available to their borrowing customers. Thus, most banks face some imbalances between the maturity dates on their assets, and the maturity dates attached to their liabilities. A problem related to the maturity mismatch situation is emerged when banks hold an unusually high proportion of liabilities subject to immediate payment such as demand deposits, money market borrowings, saving deposits etc. Thus, banks must always stand ready to meet immediate cash demands that can be substantial at any time. Bank manager should know the trends of liquidity demand on the basis of passed experience.

2.1.7.2. Interest rate sensitive assets and liabilities

Generally, banks uses two types of assets and liabilities, they are interest rate sensitive assets and liabilities and non interest rate sensitive assets and liabilities. The bank's sensitivity to changes in interest rates is another source of liquidity problems. When interest rates fall, some depositors will withdraw their funds in search of higher returns elsewhere. This trend will decrease the liquidity in the bank significantly. When interest rate rise, many loan customers may postpone new loan requests or speed up their drawings on those credit lines that carry lower interest market. One of the most important tasks of a liquidity manager is to keep close contact with the bank's largest depositors and holders of large unused credit lines.

2.1.7.3. Priority of liquidity

It is essential to predict it and when withdrawals of funds will be made. One of the most important tasks of a liquidity manager is to keep close contact with the bank's largest depositors and holders of large unused credit lines. Such close contact and prediction of future liquidity demand provide the banker to make sure that adequate funds are available in time.

2.1.8 Estimating a Bank's Liquidity Needs

Managing the bank liquidity is a difficult work. The plans, policies as well as external environmental factors heavily affect the future needs of bank liquidity. The most important approaches are given below.

2.1.8.1 The sources and Uses of Funds Approach

It is most important method for estimating a bank's liquidity requirements by focusing primarily on expected changes on deposits and loans. Bank liquidity rises as deposits increase and loans decrease. Bank liquidity declines as deposits decrease and loans increase. The sources of liquidity and uses of liquidity can never be equal, do not match, the bank has a liquidity gap, measured by the size of the total difference between its sources and uses of funds. When sources of liquidity exceed use of liquidity, the bank will have a positive liquidity gap. It is surplus liquid funds, which must be invested quickly in earning assets. When uses of liquidity exceed sources of liquidity, the bank faces a liquidity deficit, or negative liquidity gap.

The liquidity need can be calculated by the help of following formula.

Estimated liquidity= Estimated change in total deposits - Estimated change in total loans

2.1.8.2 Structure of Fund Approach

This is an important approach for future projection in modern banking. In which deposit and liquidity are divided into categories and a structure is formed. In the first stem, the bank's deposits and other fund sources are divided into categories based on their probability of being withdrawn .The bank's deposit and non-deposit liabilities into three categories.

a. Hot money liabilities: The deposits from financial institutions and other borrowed funds such as federal funds are the hot money liabilities of banks. They are very interest sensitive.

b. vulnerable Funds: In case of vulnerable deposit and non-deposit liabilities, the common rule of thump is to hold a fixed percentage of their total amount. A vulnerable fund is the fund creation from customer deposits.

c. Stable Funds: It is the fund that management considers most unlikely to be withdrawn from the bank. Only a minor percentage of the total fund is withdrawn by the depositors.

2.1.8.3 Liquidity Indicator Approach

In this approach, the future liquidity demand is estimated on the basis of historical data of the bank as well as overall banking business. They estimate their liquidity needs based on experience and industry average. The most common ratios are given below.

Cash position Indicator, Liquid securities Indicator, Capacity Ratio, Pledged security Ratio, Hot money Ratio, Deposit Brokerage Index, Core deposit Ratio, Deposit composition Ratio. These ratios will be playing directly or indirectly in fund management.

2.1. 9. Principles or Theories of Liquidity Management

Economists have tried to resolve the conflicts between objectives of liquidity, safety and profitability relating to a commercial bank by laying down certain theories from time to time.

These principles or theories, in fact, govern the distribution of assets keeping in view these objectives. They have also come to be known as the theories of liquidity management, which are discussed as under: (Bhandari; 2004:148)

a) The Real Bills Doctrine

The real bills doctrine states that any financial company should advance only short-term self- Liquiditating productive loans to business firms. Self- liquid dating loans are those, which are meant to finance the production, storage, transportation and distribution. When such goods are ultimately sold, the loans are considered to liquidate themselves automatically.

Such short- term self – liquidating productive loan passes three advantages. Firstly, they possess liquidity that is why, theory liquidate them automatically. Secondly since they mature in the short run and are for productive purpose, there is no risk of their running into bad debts. Thirdly being productive such loans earn income for the banks.

b) The Shiftability Theory

The shift ability theory of bank liquidity was propounded by H.G Moulton who asserted that if commercial banks maintain a substantial amount of assets that can be shifted into the other bank for the cash without material loss incase of necessity, then

there is no need to rely on maturities propounded the shiftability theory of liquidity. According to this view, an asset to be perfectly shifted must be immediately transferable without capital loss when the need for liquidity arises. But in general crises requires that all banks should possess such assets which can be shifted into the central bank which the lender of the last resort. This theory has certain elements of truth.

But it has its weakness. First, mere shiftability of assets does not provide liquidity to the banking system. It entirely depends upon the economic circumstance. Second, the shifatability theory ignores the fact that in times of acute depression, the bank can't shift the share and debentures on to others. In such a situation there are not buyers and all who possess them want to sell them. Third, a single bank may have shiftable assets in sufficient quantities but if it ties to sell them when there is a run on the bank, it may adversely affect the entire banking system. Fourth, if all the banks simultaneously start shifting their assets, it would have disastrous effects on both the lenders and borrows.

c) The Anticipated Income Theory

The anticipated income theory was developed by H.V. Porch in 1944 on the basis of the practice of extending term loans by U.S.A commercial banks. According to this theory, regardless of the nature and character of a borrower's business, the bank or any financial institutions plans the liquidation of the long- term loan from the anticipated income of the borrower. A term loan is for a period exceeding one – year and extending to less than five years. It is granted against the hypothecation of machinery, stock and even immovable property. The bank puts restriction on the financial activities of the borrower activities of the borrower while granting this loan. At the time of granting a loan, the bank takes into consideration not only the security but also the anticipated earning of the borrower. In fact, anticipated income is the main consideration.

d) The liabilities Management Theory

This theory was developed in the 1960's. According to this theory there is no need for the banks to grant self- liquidating loans and keep liquidity assets because they can borrow reserve money in the money market in case of need. A bank can acquire reserves by creating additional liabilities against it from different sources. We discuss these sources of bank briefly

i) Time Certificates of Deposits:

Time certificates of deposits are negotiable in the money market. So a bank can have access to liquidity by selling them in the money market. But there are two limitations. First, if during a boom, the interest rate structure in the money market is higher than the ceiling rate set by the central bank, time deposit certificates can't be sold in the market. Second, they are not dependable source of funds for the commercial banks. Bigger commercial banks are at an advantage in selling these certificates because they have larger certificates, which they can afford to sell at even low interest rate. So the smaller banks are at a disadvantage in this respect.

ii) Borrowing from Other Commercial Banks:

A bank may create additional liabilities by borrowing from other banks having excess reserves. But such borrowings from banks having excess reserves are only for a very short duration, for a day or week at the most. The interest rate of such borrowings depends upon the prevailing rate in the money market. But borrowings form other banks are only possible during normal economic conditions. In abnormal times, no bank can afford to lend to others.

iii) Borrowing from the Central Bank:

Banks also create liabilities on themselves by borrowing form the central bank of the country. They borrow to meet their liquidity needs for short term and by discounting bills form the central bank. But such borrowings are relatively costlier than borrowing form other sources.

iv) Raising Capital Funds:

Commercial banks acquire funds by issuing debentures. But the availability of funds through this source depends on the amount of dividend or interest rate, which the bank is prepared to pay. Usually the banks are not in a position to pay rate higher than paid by manufacturing and trading companies. So they are not able to get sufficient funds form this sources.

v) Ploughing Back of Profit:

Another source of liquid funds for a commercial bank is the ploughing back of its profits. But how much it can get from this source will depend upon its rate of profit and its dividend policy. It is larger banks that can depend on this source rather than the smaller banks.

2.2 Review of NRB Directives

According to the Nepal Rastra Bank Directives No.5 – Provision of reducing the risk on activities of commercial banks, NRB has classified the risk related to commercial banks transaction into four sectors:

- Liquidity risk
- Interest rate risk
- Foreign exchange risk
- Risk related to loan and investment

Clause 1 Provision of reducing liquidity risk

I. Banks need to classify time interval on the basis of payment period and maturity period.

Assets and liabilities with maturity period from 0-90 days.

Assets and liabilities with maturity period from 91-180 days.

Assets and liabilities with maturity period from 181-270 days.

Assets and liabilities with maturity period from 271-365 days.

Assets and liabilities with maturity period above 1 year.

II. NRB has brought following directives for liquidity are as:

7% of current and savings deposits liabilities and 4.5% of fixed deposits liabilities should be balance at NRB.

2% of total deposits liabilities should be cash in vault.

III. Cash in vault shall include only the local currency and foreign currency except clearing cheques.

IV. Liabilities with unfixed maturity period.

Core capital from current deposit and compensating balances need to include in time interval above one year.

Saving deposits should be taken as long- term liabilities

2.3 Review of Journal and Article

From the book entitled 'Financial Management' written by M. Khan and P.K. Jain, liquidity management is one of key areas of "working capital management". Apart from the fact that it is the most liquid current assets, which can be reduced because the other

major liquid assets i.e., receivable and inventory get eventually converted in liquidity. This underlines the significances of liquidity management.

Prof. Dr. Manohar Krishna Shrestha (2004) in his article titled *"Working Capital Management in Public Enterprises"* has studied the working capital management of ten selected public enterprises (PE's). He has especially focused on the liquidity, turnover and profitability position of those enterprises. In this analysis, it was found that four PE's had failed to maintain desirable liquidity position. On the turnover side, two PE's had negative working capital turnover, four had adequate turnover, and one had higher turnover on net working capital. He has also found that out of ten PE's six were operating in losses while only four were getting some percentage of profit. With the reference of his findings, he has brought certain policy issues such as lack of suitable financial planning, negligence of working capital management, deviation between liquidity and turnover of assets and liability to show the positive relationship between turnover and return on net working capital. At end, he had made some suggestive measures to overcome from the above policy issues i.e. identification of needed funds, regular check of accounts, development of management information system, positive attitude towards risk and profit and determination right, combination of short termed and long term sources of funds

For the liquidity management, Dr. Bihari Binod Pokharel and Mr. Ujwal Raj Gautam, (2004) in their book "Fundamental of Financial Management" have given some conceptual ingredients. An attempt should be made to accelerate collections and handle disbursement so that maximum liquidity is available. Collection liquidity is accelerated by means of concentration banking, a lock box system and other specific pick plans. A firm can reduce its liquidity balance by adopting quicker mechanism of transferring fund. The optimal level of liquidity depends upon the predictability of future liquidity flows, their volatility, fixed cost of security transaction and the carrying cost of holding liquidity; that is interest rate foregone and marketable securities.

For the liquidity management Kiran Thapa and Dipendra Kumar Neupane, (2005) in their book "Banking and Insurance" have given some idea about liquidity indicator approach.

The worst possible liquidity position for the bank:-

Deposit growth falls significantly below management's expectations, so that actual deposit total sometimes goes below the lowest points on the bank's historical minimum deposit growth track. More over, suppose loan demand some times goes beyond the high points of the bank's loan growth track. In this situation liquidity manager would have to prepare for a sizeable liquidity deficit and develop a plan for raising substantial amounts of liquid funds.

The best possible liquidity position for the bank:-

Deposit growth turns out be significantly above management's expectations, so that it touches the highest points in the bank's deposit growth track. More over suppose loan demand turns out to be significantly below management's expectations, so that loan demand grows along a minimum path that touches the low points in the bank's loan growth track. In this situation, liquidity manager must have to plan for investing these surplus funds in order to maximize the bank's return. The most likely outcomes lie some where between these extremes. Many banks like to calculate their expected liquidity requirement, based on the probabilities they assign to different possible outcomes.

Dr. Yuvaraj Khatiwoda, newly appointed governor in Annapurna Post (2010) accused commercial banks, "At present situation Nepalese banking sector is facing liquidity problem due to their own causes such as high investment on unproductive sector i.e real state, involve in competition to increase market share and in bonus distribution" he adds "directors of commercial banks creates big problem but the situation is in controllable, NRB is going to make policy to solve it".

NRB introduces refinancing for productive sectors, Republica (2nd April, 2010**)**

Board meeting of NRB endorsed on 1st April, 2010, it would extend refinance loans up to Rs 25 billion to the financial institutions against collateral of good loans that they own. NRB categorizes good loans as those that are servicing interests and principals or defaulted by period of less than three months.

2.4 Review of Related Thesis

Thapa Uttam Bahadur (2004) has conducted his study on *"Liquidity Management practices before and after financial sector reform programme in Nepal Bank Ltd."* The objective of the study was comparatively examined and analysis the liquidity position

and liquidity management practices in Nepal Bank Ltd. Before and after financial sector reform programme on liquidity position of the bank.

His major findings of the study are as follows.

Average liquidity and bank balance and loan and advances percentages is higher in Nepal Bank Limited before FSRP than after FSRP.

Fixed deposit to total deposit ratio of Nepal Bank Limited before and after FSRP is always decreasing trend. The turnover ratios of Nepal Bank Limited before FSRP have decreasing trend.

Giri Deepak (2005) has conducted a research in the topic," *Investment & Liquidity Management of Insurance Companies*". The main objective of the research is to analyze the investment pattern, liquidity management, trend of profit of the insurance companies.

His major findings of the study are as follows.

Most of the insurance companies are investing in government securities & debenture, share of other companies' securities, bank& finance companies' fixed deposit a/c; they are found not investing in real estate and mutual fund. So, he suggests insurance companies to search for new area of profitable investment like in real estate and mutual fund, which are other profitable sectors. He further states that all insurance companies seem to be risk avoiding while making their investment. Therefore they are making secured investment with lower rate of return. Thus they are suggested to change their investment policy. Finally, he recommends the insurance companies to introduce the portfolio management system to increase their earning form investment without increasing the degree of risk but through the diversification of risk.

Shrestha Rajani (2007), made a thesis report entitled *"Liquidity Management of Nabil Bank Ltd"***,** The objectives of study is to analyzes financial ratios, trend analysis of ratios and profit and to provide suggestion for the future betterment of Nabil Bank Ltd.

Her major findings of the study are as follows.

Liquidity ratios of Nabil Bank Ltd. are fluctuating over the study period. The profitability ratio are also fluctuating and in increasing trend. The interest income and expenses are in increasing. In order to maintain fluctuating trend of profitability, she recommends investing different risk profile by establishing Special Investment Promotion Unit. She has also recommended to minimize the minimum cash balance

that should maintained by depositor and enhance the wide range of services provided to customer as per changing environment.

Shrestha Leela kumari (2008) has carried out her research on *"A study of Cash management of joint venture bank"*. Her main objective was to analyze the current assets and current liabilities and their impact and relationship to each other.

Her major findings of the study are as follows.

Liquidity & bank balance holds the part of current viz. liquidity and bank balance, inventories and receivables.

There is increasing trend in liquidity and decreasing trend in current assets turnover of joint venture bank.

Average liquidity and bank with respect to current asset and total assets is increasing year after year during her study period and liquidity and bank balance holds largest amount of idle liquidity balance of both bank.

Inventory to current assets ratios shows decreasing trend but it has improved later.

Similarly, inventory to TAs ratio shows fluctuating trend. There is no consistency in inventory balance.

Liquidity position of the company shows increasing trend and excessive quick ratio indicates excessive investment in liquid quick assets of the company.

Due to lack of definite credit and collection policy, receivable has increased year after year.

Gadtaula Milan Raj (2009) has carried out his research on *"Liquidity Management of Nepal Development Bank Ltd. and Development Credit Bank Ltd"*. His main objective of this study is to examine and analyze liquidity position of Nepal Development Bank limited and Development Credit Bank limited. i.e. management of individual current assets like liquidity and bank balance.

His major findings were as follows.

To fulfill the objectives, an appropriate research methodology was developed, which includes financial tools and statistical tools. In the ratio analysis, four different categories were tested with their sub-division. The ratios tested were liquidity ratio, profitability ratio, and leverage ratio, utilization ratio. Liquidity ratio measures the firm's ability to fulfill its short-term commitments. These ratios focus on current assets

and current liabilities and are used to ascertain the short term solvency position of a firm.

Both banks have very low liquidity position because the both current and quick ratios are below the standard. Both banks cannot pay short-term liability at the time of its creditors demand. It may create difficult situation in future. So, both banks should keep sufficient level of current and quick assets to maintain its liquidity position. The investment positions of DCBL and NDBL, out of its total deposit were not satisfactory because the investment to total deposit ratio are too much low. The study shows that investments of total deposits were not satisfactory for investment. So, it is recommended that both banks should give priority for profitable investment. Both bank used very high proportion of debt in its capital structure. The NDBL has very high debt to total assets. Similarly, DCBL has also very high debt to total Assets. So, this indicates poor financial condition of both banks. The ratio of NDBL is very critical than DCBL. So, both banks should either increase its own equity capital or decrease debt financing. Both banks have provided more loan and advance from its saving, fixed, and total deposit. So, both banks should review its loan policy. The government has not given any consideration to legislate legal ruler regarding the liquidity position as well as debt financing. So, they should give their attention for legal requirement in maintaining liquidity as well as debt financing.

Chaulagai Madhusudhan (2009) made a thesis report entitled "*Cash & Liquidity Management of Commercial Banks in Nepal*". His main objective was comparatively examined and analysis the liquidity position and cash management practices of SBL and NIBL.

His major findings are as follows:

Liquidity management is one of the most important parts of every financial institution. Liquidity is the most sensible and crucial aspect of the bank, which is often compared to lifeblood of the human being. Lack of adequate liquidity is often one of the first signs that a bank is in serious financial trouble and lead to the loss of public faith upon banks. Thus, ensuring adequate liquidity is a never-ending problem for the bank management that will always have significant implications for the bank's profitability. After analyzing the sample bank NIBL and SBL. Both banks have very low liquidity position because the both current and quick ratios are below the standard. Both banks

cannot pay short-term liability at the time of its creditor's demand. It may create difficult situation in future. So, both banks should keep sufficient level of current and quick assets to maintain its liquidity position. The investment positions of SBL and NIBL, out of its total deposit are not satisfactory because the investment to total deposit ratio are too much low. The study shows minimums of total deposits are used for investment. So, it is recommended that both banks should have to give priority to invest in profitable investment opportunity than providing maximum unsecured loan. Both bank used very high proportion of debt in its capital structure. The NIBL have very high debt to total assets. Similarly, SBL have also very high debt to total assets. So, this indicates the very poor and critical financial condition of both banks. The ratio of NIBL is very critical than SBL. So, both banks should either increase its own equity capital or decrease debt financing of present situation. Both bank have provided more loan and advance from its saving, fixed, and total deposit. So, both banks should review its loan policy.

Maharjan Bidhya Laxmi (2009) made a thesis report entitled *"Liquidity Management of Commercial Banks of Nepal"*. Her main objective was comparatively examined and analysis the liquidity position of NIBL, HBL and NABIL.

Her major findings were as follows.

Nepalese commercial banks are in optimum liquidity position with slightly variation and are not changing significantly over the study period. The factors, Investment opportunity, Interest Rate, NRB. Regulations are to be found most affecting factor of liquidity position. The CRR Ratio prescribed by NRB of liquidity management is found adequate and some has suggested increasing its level. NRB is effectively monitoring its banks during the last years and intervention is required to maintained effective liquidity position.

Based on the findings of the research, following points are suggested to all commercial banks.

Liquidity profile analysis and GAP analysis with IRC should be prepared quarterly basis and send to NRB within stipulated time period. An effort should be made on human resource development on the risk analysis management and liquidity management. An effort should be made on the development of market for the liquidity generating assets like; T-bills, Options and Bank CDs etc. Satisfied employees are the

backbone of the bank. So, necessary steps should be step forwarded to develop satisfied and obedient employees, which may reduce the problems of bank defaulters and corruptions. Rules and regulations are the guidelines of things to do or not to do. So, its effects can be seen after the implementations. In order to manage the liquidity effectively the existing regulation should be effectively put in practice.

2.5 Research Gap

Reviewing various books, journals, thesis and other independent studies by different authors related to the topic, it could be concluded that all those worked performed are related to the study of liquidity management. Above studies has provide us little but more knowledge for our research purpose. The review of above relevant literature has contributed to enhance the fundamental understanding and knowledge, which is require making study liquidity position of KBL and NBL. By using different financial indicator, out of which profitability and efficiency is also important one. If any firm makes excess profit than the normal level, the firm is said to have successful management, efficient control mechanism. But sometimes, the profit earned by a firm can be affected by external factor like government policies relating to financial sector and inflation. So, this study is also focused on how the banks utilizes the resources properly, liquidity management, loan and advance, credit investment, capital structure, operating income and expenses, resource mobilization. To make the study reliable, relevant data of five years from (i.e. 2004\2005 to 2008\2009) have been taken. The latest data, some extra financial indicator's like trend analysis, correlation coefficient, probable error and different materials relating to liquidity have made the analysis of this study more clear.

There are various researches conducted on liquidity management and policy of commercial banks. So this study be fruitful to those interested person, party, scholars, professor, student, businessman and government for academically as well as policy perspective

CHAPTER –III
RESEARCH METHODOLOGY

Research means to investigate or to search again and again about of phenomena under study. The main objectives of the research methodology are to achieve the basic goals and objectives of the research study. This chapter explains the research methodology adopted and implied for the resources used in achieving the permitted objectives as stated in the earlier chapter.

3.1 Research Design

Research design has to provide answers to research questions. It is the strategy for conducting any research work. Methodological part is described in this step .This research is concerned with past phenomenon. So this research is a historical research It describes the methods of data collection, analysis and evaluation of data.

This research design is basically the liquidity management of KBL and NBL. Analytical and descriptive approaches are used to evaluate the liquidity position of these banks. The points are discussed basically on the basis of secondary data and financial statement of past five years taken from the banks. This study is the analysis of accounting ratios of selected commercial banks on the basic of historical data.

3.2 Banks under study

This study is related with liquidity management of only two commercial banks are taken for the study to meet the requirement. The names of the banks under study are as follows:

1. Kumari Bank Limited. (KBL)
2. Nabil Bank Limited (NBL)

Out of 26 commercial banks, the above mentioned banks are selected due to the availability of data and easily accessible to the researcher. So the banks, under study, are selected as convenient sampling within probability sampling

3.3 Data Collection procedures:

This step is done in the field or area of the study. The information can be obtained from the respondent by using different methods of data collection. Furthermore balance sheet, cash flow analysis, profit and loss accounts of respected banks, NRB bulletins and other related articles, journals and research studies are analyzed as per the requirement of the study.

The data which is not originally collected but obtained form published and an unpublished source of data is called secondary data. Here secondary data are used to find out the liquidity position, annual reports of different years, web page publication of sample banks, different business magazines, previous research studies, are analyzed. The data are systematically arranged. These data are grouped in different tables and charts according to their nature.

3.4 Tools Used For Data Analysis

Financial as well as the statistical tools are used to make the analysis more convenient, reliable and authentic. For data analysis, different items from the balance sheet and other statements are tabulated. Their ratios, percentages, mean, standard deviations and coefficient of variations are then calculated and presented in the tables. In order to ascertain financial position of a firm, various tools could be used. It is true that suitable of appropriate tools, according to the nature of statement and data make the analysis more effective and significant. Collected data are managed, analyzed and presented in proper table and formats. These data are interpreted and explained whatever they are necessary. The following tools are used in this study:

3.4.1 Financial Tools

Financial ratios are calculated to ascertain the liquidity position of the firm. It is the relationship between financial variables contained in the financial statement (i.e., annual reports, balance sheet, and profit and loss account, cash flow and income statements). It helps the related parties to spot out the financial strength and weakness of the firm. There are several financial tools, which can be applied in order to analyze the liquidity position of commercial banks. Therefore, to find out the liquidity position of the sampled commercial banks, the following financial tools are used:

3.4.1.1 Ratio Analysis

Ratio is the relationship between two figures. Ratio analysis can provide useful information concerning a company's operations and financial condition. They provide two important facts about the management: the return on investment and the soundness of the company's financial position. Ratio analysis is the most important financial to analyzed the liquidity position of banks. The ratios used in this study are as follows: Liquidity ratio, Activity Ratio and Profitability Ratio. Likewise, composition of working capital in terms of cash and bank balance percentage, loan and advances percentage, government securities percentage and miscellaneous current assets percentage are also calculated. The ratio is generally calculated from past financial statement. Ratio analysis is the process of identifying the financial strengths and weakness. It truly helps to exploit maximum benefits and repair the weakness to meet challenges. Ratio analysis has limitations, but used with care and judgment, it can be most helpful. Ratio is a parameter to improve the future performance. Ratio is generally express in percentage, proportion and charts.

3.4.1.1.1 Liquidity Ratio

Liquidity ratio measures the firm’s ability to fulfill its short-term commitments. These ratios focus on current assets and current liabilities and used to ascertain the short-term solvency position of a firm.

In this context, liquidity is measured by the speed with a bank’s assets that can be converted into cash to meet deposit withdrawals and current obligations. A bank is subject to have a minimum cash reserve requirement (CRR) imposed by Central Bank to ensure a minimum amount to total assets to meet unexpected withdrawals. The following ratios have been applied to find out liquidity position of the banks.

a. Cash and Bank Balance to Total Deposit Ratio

This ratio is calculated by dividing cash and bank balance by total deposits. Total deposits consist of current deposit, saving deposit, fixed deposit, money at call and short notice and other liabilities. This ratio shows the proportion of total deposits held as compared to the most liquid assets. High ratio shows the strong liquidity position of the bank but very high ratio is not favorable for the bank because it does not produce appropriate profit to bear the high interest.

$$\text{Cash and bank balance to total deposit ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Total Deposits}}$$

b. Current Ratio

All those assets, which can be converted into cash within a short period of time without loss, are current assets. Current ratio reflects the strength of current assets available with the company over its current liabilities into cash in one accounting year. This ratio indicated the current short-term solvency position of the bank. The current ratios are the ratios of total current assets to current liabilities. Higher current ratio indicates better liquidity position. In other words, current ratio represents a margin of safety. Higher the current ratio, the greater the margin of safety, and the larger the amount of current assets in relation to current liabilities, the more the bank's ability to meet its current obligations, although there is no hard and fast rule, conventionally a current ratio of 2:1 (current assets twice of current liabilities) is considered satisfactory.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

c. Fixed Deposit to Total Deposit Ratio

Fixed deposit is a long term and high interest charge bearing deposit. Although a high cost liability, increasing fixed deposit is subject to an additional advantage if utilized properly. Sufficient fixed deposits enable banks to grant long-term loan to their clients at higher interest rate. This ratio is calculated in order to find out the proportion of total deposit that has higher interest charge bearing. The higher the ratio, the more the interest bearing deposits as well as better liquidity and lower proportion of current or short-term deposit. It is computed by dividing the amount of fixed deposits by the total deposits amount, which is expressed as follows:

$$\text{Fixed Deposit to Total Deposits Ratio} = \frac{\text{Fixed Deposit}}{\text{Total Deposit}}$$

d. Saving Deposit to Total Deposit Ratio

Saving deposit is an interest bearing short-term deposit. The ratio is developed in order to find out proportion of saving deposit, which is interest bearing and

short term in nature. It is calculated by dividing the total amount of saving deposits by the amount of total deposits, which can be expressed as follows:

$$\text{Saving Deposit to Total Deposit Ratio} = \frac{\text{Saving Deposit}}{\text{Total Deposit}}$$

e. Cash and Bank Balance to Current Liabilities Ratio

This ratio is obtained dividing total cash and bank balance by total current liabilities. This ratio indicates how much cash is available to meet the current liabilities. Especially this ratio is useful to lenders.

$$\text{Cash and bank balance to current liabilities ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Current Liabilities}}$$

f. Cash and Bank Balance to Current Assets Ratio

This ratio is calculated dividing total cash and bank balance by current assets. Cash means the firm's holding of currency and demand deposits. It is most liquid assets because a firm disburses it immediately with out any restriction.

$$\text{Cash and Bank balance to Current Assets Ratio} = \frac{\text{Total Cash and Bank balance}}{\text{Current Assets}}$$

g. NRB Balance to Total Deposit Ratio

This ratio is obtained dividing NRB balance by total deposits. Bank has to hold a balance of certain percentage of total deposits. The amount should be deposited in Nepal Rastra Bank in order to satisfy legal requirements.

$$\text{NRB balance to total deposit ratio} = \frac{\text{NRB Balance}}{\text{Total Deposit}}$$

h. Cash Reserve Ratio (CRR)

Commercial banks are directed by Nepal Rastra Bank, the central bank to maintain certain percentage of their deposits liabilities with NRB in own account in order to enable them to maintain the sound liquidity position. Cash reserve ratio (CRR) describes whether the commercial banks have met the liquidity requirement as

prescribed by NRB or not. It is computed by dividing the cash reserve of commercial banks by total deposit and the formula is:

$$\textit{Cash Reserve Ratio (CRR)} = \frac{\text{Cash in Reserve}}{\text{Total Deposits}}$$

3.4.1.1.2 Activities or Turnover Ratio

Activity ratios are used to evaluate the efficiency with which the firm manages and utilizes its assets. This ratio indicates how quickly certain current assets are converted into cash. From this ratio it can be known whether or not the business activities are efficient. These ratios are also called turnover ratio because they indicate speed with which assets are converted or turnover into profit generating assets. These ratios, moreover, help in measuring the banks ability to utilize their available resources.

The ability of the firm to manage its resources is determined with various activity ratios as follows:

a. Loan and Advances to Saving Deposit Ratio

This ratio is also employed for the purpose of measuring utilization of saving deposits in generating revenue by giving loan and advances to the client i.e. to determine to what extent collected saving deposit amount is being deployed in providing loan and advances to generate income. Saving deposits are interest-bearing obligation for short-term purpose whereas loan and advances are the short investment for revenue income. This ratio indicates how much short-term interest bearing deposits are utilized for income generating purpose. The formula for this ratio is as follows:

$$\text{Loan and Advances to Saving Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Saving Deposit}}$$

b. Loan and Advances to Fixed Deposit Ratio

This ratio differs slightly from the former one because it includes the fixed deposits only. The ratio measures how many much amount is used in loan and advances in comparison to fixed deposits. Fixed deposits are interest bearing long-term obligations where as loan and advances are the major sources of investment in generating income for Development banks. It is calculated as follows:

$$\text{Loan and Advances to Fixed Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Fixed Deposit}}$$

c. Loans and Advances to Total Deposit Ratio

The ratio assesses to what extent the bankers are able to utilize the depositor's fund to earn profit by providing loans and advances. In other words, how quickly total collected deposit are converted into loan and advances given to the client to earn income. It is computed by dividing the total amount of loan and advances to total deposit fund. Higher ratio indicates higher/proper utilization of funds and low ratio is the signal of inefficiency or remaining idle.

$$\text{Loan and Advances to Total Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Total Deposit}}$$

d. Investment to Total Deposits Ratio

This ratio is calculated dividing total investment by total deposits. Total investment includes government treasury bills, development bonds, company shares and other investments. This ratio presents how efficiently the resources of the banks have been mobilized. High ratio shows managerial efficiency regarding the utilization of deposits and vice-versa.

$$\text{Investment to total deposit ratio} = \frac{\text{Total Investment}}{\text{Total Deposit}}$$

3.4.1.1.3 Profitability Ratio

The financial analyst must attempt to understand whether the firm's profit is in the rising trend. In the initial years of establishment of a firm, the profit will be in the lower side but slowly year by year profit gradually starts to rise.

The profitability ratio, as the name suggests, measures the operating profitability in terms of profit margin return on equity and return on total investment, and reflects the overall efficiency and effectiveness of management. *(Pradhan; 2000:53)* A required level of profit is necessary for survival and growth of a firm in a competitive environment. Profitability can be measured in terms of a relationship between net profit

and assets. This ratio is also known as profit-to-assets ratio. It measures the profitability of investment.

Various ratios can be developed based upon the profit under different circumstances. These different ratios are called profitability ratios

a. Return on Total Assets Ratio (ROA)

This ratio is calculated by dividing net profit by total assets. This ratio represents the relationship between net profit and assets. Net profit indicates the profit after deduction on interest and tax. Total asset means the assets that appear in assets side of balance sheet. The increasing ratio shows favorable situation for the banks. The higher ratio also shows that the bank could well manage their overall operations. But the lower ratio shows vice-versa.

$$\text{Return on Total Assets Ratio} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

b. Net Profit to Total Deposit Ratio

This ratio measures the percentage of profit earned from the utilization of the total deposit. Deposits are mobilized for investment, loan and advances to the public in generating revenue. Higher ration indicates the return from investment on loans and lower ration indicates that the funds are not properly mobilized.

$$\text{Net Profit to Total Deposit Ratio} = \frac{\text{Net Profit}}{\text{Total Deposits}}$$

c. Return on Common Shareholders' Equity

This ratio is calculated by dividing net profit by common shareholders' equity. This ratio measures the return on shareholders' investment in the bank. The higher ratio of return on equity is better for shareholders. It builds trustworthiness to the customers as well as reputation of the bank.

$$\text{Return on common shareholders' equity} = \frac{\text{Net Profit}}{\text{Shareholders' Equity}}$$

d. Return on Working capital

This ratio is calculated dividing net profit after tax by working capital. This ratio measures the proportion of net profit after tax and working capital. Working capital is obtained by subtracting current assets from current liabilities. The higher ratio is better which shows little working capitals utilized properly.

$$\text{Return on Working Capital} = \frac{\text{Net Profit}}{\text{Working Capital}}$$

3.4.2 Statistical Tools

Various financial tools mentioned above were used to analyze the cash and liquidity management of Commercial Banks. Similarly, the relationship between different variables related to the study topics were drowning out using statistical tools.

3.4.2.1 Mean or Average

The mean or average value is a single value within the range of the data that is used to represent all the value in the series. Since an average is somewhere within the range of the data, it is also called a measure of central value. Average value is obtained by adding together all the terms and dividing this total by the number of items. The formula is given below:

$$\overline{X} = \frac{\sum X}{N}$$

Where,

$\overline{X}$ = Arithmetic average,

X = Sum of value of all term and

N = Number of terms

3.4.2.2 Standard Deviation

The standard deviation is the measure that is most often used to describe variability in data distributions. It can be thought of as a rough measure of the average amount by which observations deviate on either side of the mean. Denoted by Greek letter σ (read as sigma), standard deviation is extremely useful for judging the representatives of the mean. Standard deviation is represented as: Further more, a standard deviation is

always a positive number and is superior to the mean deviation, quartile deviation and the range because it is used for further mathematical treatment.

Standard deviation is represented as:

$$s = \sqrt{\frac{\sum d^2}{n - 1}}$$

Where,

s = Standard deviation,

d^2 = Sum of the squares of the deviations measured from the arithmetic average, and,

n = Numbers of items

3.4.2.3 Coefficient of Variation

The coefficient of variation is the ratio of standard deviation to the mean for a given sample used to measure spread. It can also be thought of as the measure of relative risk. The larger the coefficient of variation, the greater the risk relative to the average.

Mathematically,

$$V = \frac{s}{\overline{X}}$$

Where

V = Coefficient of variation,

s = Standard deviation, and,

$\overline{X}$ = Arithmetic average

3.4.2.4 Least Square Liner Trend Analysis

Trend analysis implies straight line irrespective of the seasonal and cyclical swings and function. Trend analysis is used to measure the line of best fit or straight line is obtained or not. Trend analysis is also used to compare the overall performance of different selected study period. The term best fir is interpreted in accordance with the principle of least square which consists in minimizing the sum of the squares of the residual or the errors of estimates i.e. the deviations between the given observed value of the variables and their corresponding estimated values as given by the line of best fit. Absolute amount per unit of time can change by increasing or decreasing the trend value.

Trend analysis is also denoted by least squares linear trend analysis. Trend analysis describes the average relationship between two series where the one series relates to time and other series to the value of available. Trend analysis gives the best possible mean values of dependent variable for a given value of independent variable. Trend analysis is a significant tool of horizontal financial analysis. It is a dynamic method to indicate the changes in terms of financial statement. Trend analysis helps to identify the controllable items of given period and future forecast can be made for ongoing concern. It is one of the useful tools in making a comparative study of the financial statement of the number of years. It makes easy to identify the changes in an item or in a group of items over a period of time and to draw the conclusion regarding the changes there on.

Under this topic, trend of different ratios are forecasted for next two years. The projections are based on the following assumptions.

The main assumption is that other things will remain unchanged i.e.
The banks will remain in the present position.
The economy will remain in the present stage.
NRB will not change its guidelines to commercial banks.
The forecast will be true only when the limitation of least square method is carried out.

Least square method:

This is one of the most commonly used methods to describe the trend. This is the mathematical method.

The straight line trend between the dependent variable 'y' and independent variable 'x' (i.e. time) is representing by equation $Y_c = a + bx$

Where,

Y_c = estimated value of 'y' for any given value of independent variable X.

a = y – intercept of value of 'y' when x = 0 i.e. $a = \Sigma Y/n$

b= slope of the trend line or amount of change in 'y' per unit change in x

[i.e. $b= \Sigma\chi\Sigma\gamma/ \Sigma \chi 2$

3.4.2.5 Coefficient Correlation Analysis

It is the statistical tool, which is describes the degree to which one variable is related to another. It is a useful statistical tool for measuring the strength and magnitude of liner relationship between two series. Karl Pearson's correlation analysis is used to measure the relationship between two variables in the bank. We calculate correlation coefficient by actual mean method.

The correlation coefficient (r) between two variables X and Y can be obtained by using the following formula.

Where, $r = \frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

X and Y are two variables

r = Coefficient of Correlation

$x = X - \overline{X}$

$y = Y - \overline{Y}$

Here,

r always lies between -1 and +1

r = +1 implies that two variables are perfectly positively correlated.

r = -1 implies that two variables are perfectly negatively correlated.

r = 0 implies that there is no correlation. Or it does not necessarily mean that the variables are independent. They may however be related in some other form such as quadratic, logarithm of exponential.

In this study, the simple correlations between the following variables are analyzed.

I) Coefficient of Correlation between Total Deposit and Investment

II) Coefficient of Correlation between Total Deposit and Loans & Advances.

III) Coefficient of Correlation between Current Assets and Current Liabilities.

Probable error of correlation coefficient

The coefficient of correlation shall be interpreted based on probable error. If the value of correlation coefficient is greater than 6 times the value of probable error, the correlation coefficient is deemed as significant and reliable. If the value of correlation coefficient is less than 6 times the value of probable error, the correlation coefficient is said to be insignificant and there is no evidence of correlation. It is the measure of

testing the reliability of the calculated value of r. One very convenient and useful way of interpreting the value of coefficient of correlation(r) between the two variables is coefficient of determination, which is denoted by r2. It explains the total variation in dependent variable is explained by independent variable.

If r were the calculated value of r from sample of n pair of observations, then P.E. is defined by:

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

Here,

If r < P.E. It is not significant. So, perhaps there is no evidence of correlation.

If r > 6.P.E., it is significant.

In other cases, nothing can be concluded.

The problem error of correlation coefficient may be used to determine the limits within which population correlation coefficient lies. Limits for population correlation coefficient are ± PE.

3.4.2.6 Liquidity Profile Analysis

Liquidity profile analysis is a financial cum banking tool, which is very useful to measure liquidity position of commercial banks properly. It is a scientific concept in the banking sector and newly introduced in Nepal. Under directive no.5, issued on 2061/62 B.S., Nepal Rastra Bank has prescribed this tool to measure the liquidity position of commercial banks the researcher found that this tool is adopted from 2002 A.D. and most of the banks have followed this tool.

Under this section, it is attempted to analyze the liquidity position of commercial banks by matching assets and liability based on the maturity period.

3.4.2.7 Cash and Near Cash Management

Cash is the most liquid asset. It is of vital importance to the daily operations of business firms. This is the basic input needed to keep the business running on a continuous basis. The firm should keep sufficient cash, neither more, nor less. Cash is 'non earning' asset in the sense that, although it is needed to pay for different purposes, cash itself earns no interest. Thus, the goal of cash management is to reduce cash holdings to the minimum necessary to conduct business. It means the major function of financial manager is to

maintain a sound cash position. Hence, cash management is concerned with the managing of cash flows into and out of the firm, cash flows within the firm and cash balances held by the firm at a point of time by financing deficit or investing surplus cash. The ideal cash management system will depend on the firm's products, organization structure, competition, culture and options available. So the aim of cash management is to accomplish this cycle at a minimum cost and to achieve liquidity and control. Cash management has been the most complicated and challenging area of modern corporate finance as much as the management always face a trade –off between the liquidity and profitability of the firm.

Cash includes coins, currencies, cheque hold by a firm, and balances in its bank account, this money is immediately useable to pay bills. Some times "near cash Items" are also included in cash, e.g., marketable securities, short term investment, short term loan and advances. If the firm has excess cash, it may decide to convert it to short term investments. The financial manger will purchase low risk, high liquidity money market instrument that can be converted back to cash without delay if the need arises. These securities are widely used as short term investment by the firm's operation. These securities are widely used as short term investment by the firm in developed countries. Each security offers different characters that make it suitable for different firms. Cash management is also called management of money position because cash includes not only the cash or current in hand but also he readily convertible securities or other near cash items, e.g. time and demand deposit, readily available credit and so on.

The concerning area of cash management areas is summarized as follows :

Management of cash flows into and out of the firms, Management of cash flow within the firm and Management of cash balance held by the firm at a point of time.

Cash and Near cash items = Cash Balance + Balance of Nepal Rastra bank + Balance of other financial institution + Money at call and Short Notice + Short term investments

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

This chapter deals with the presentation and analysis and interpretation of statistics, evidence and facts to clearing the research works. The collection of data and its analysis tools are used as specified in chapter three. In this study, financial as well as statistical tools are used to achieve the pre-determined objectives. The analyzed data and results are presented clearly and simultaneously by using tables and graphs.

4.1 Financial Tools

Financial ratios are calculated to ascertain the liquidity position of the firm. It is the relationship between financial variables contained in the financial statement (i.e., balance sheet, profit and loss account and income statements). It helps the related parties to spot out the financial strength and weakness of the firm. There are several financial tools, which can be applied in order to analyze the liquidity position of commercial banks. The financial tools used in this study are as follows: Liquidity ratio, Activity Ratio and Profitability Ratio. Likewise, composition of working capital in terms of cash and bank balance percentage, loan and advances percentage and government securities percentage.

4.1.1 Liquidity Ratio

Liquidity ratio measures the firm's ability to fulfill its short-term commitments. These ratios focus on current assets and current liabilities and use to ascertain the short-term solvency position of a firm.

In this context, liquidity is measured by the speed with a bank's assets that can be converted into cash to meet deposit withdrawals and current obligations. A bank is subject to have a minimum cash reserve requirement (CRR) imposed by Central Bank to ensure a minimum amount to total assets to meet unexpected withdrawals.

4.1.1.1 Cash and Bank Balance to Total Deposit Ratio

Cash and bank balance to total deposit ratio is calculated by dividing cash and bank balance by total deposits. Total deposits consist of current deposit, saving deposit, fixed deposit, money at call and short notice and other liabilities. This ratio shows the

proportion of total deposits held as compared to the most liquid assets. High ratio shows the strong liquidity position of the bank but very high ratio is not favorable for the bank because it does not produce appropriate profit to bear the high interest.

$$\text{Cash and bank balance to total deposit ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Total Deposits}}$$

Table 4.1

Cash and Bank Balance to Total Deposit Ratio

(Rs. In million)

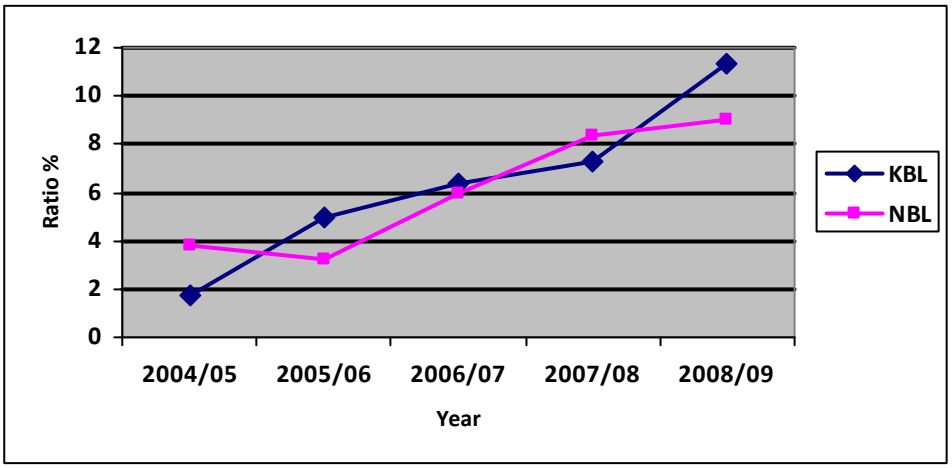
	Cash and Bank Balance		**Total Deposits**		**Ratios (%)**	
F.Y.	**KBL**	**N BL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	111	559.00	6269.00	14587.00	1.77	3.83
2005/06	389	630.00	7769.00	19347.00	5.00	3.25
2006/07	672	1400.00	10557.00	23342.00	6.37	6.00
2007/08	933	2671.00	12774.00	31915.00	7.30	8.37
2008/09	1776	3372.00	15711.00	37348.00	11.30	9.03
Mean ($\overline{X}$)					**6.35**	**6.09**
Standard Deviation (s)					**3.47**	**2.6**
Coefficient of Variation (CV)					**54.65**	**42.69**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09.

During the study period, the maximum cash and bank balance to deposit came in the FY 2008/09 for the both banks KBL & NBL i.e.11.30% & 9.03% respectively. Above table shows the cash and bank balance to total deposit ratios 1.77%, 5%, 6.37%, 7.30%, & 11.30% in KBL & 3.83%, 3.25%, 6.00%, 8.37%, and 9.03% in NBL in the respective year of study period. The mean, standard deviation and CV of the cash and bank balance to total deposit in KBL i.e. 6.35, 3.47 & 54.65% and 6.09, 2.6 & 42.69% in NBL. The mean ratio of KBL is greater than that of NBL. KBL has maintained high Cash and Bank Balance in relation to Total Deposit. The Standard Deviation of KBL is high which is also shown by line diagram fluctuating from year to year. The ratio of KBL is increasing trend. The ratio of NBL is slightly decreased in the FY 2005/06 and

increased in next following year. NBL is more consistent or less variable than KBL. CV of KBL is higher than NBL which reveal the inconsistency to its average ratio. is also shown by Diagram 4.1.

Figure No 4.1
Cash and Bank Balance to Total Deposit Ratio



Source: Table 4.1

4.1.1.2 Current Ratio

Current ratio reflects the strength of current assets available with the company over its current liabilities into cash in one accounting year. This ratio indicated the current short-term solvency position of the bank. The current ratios are the ratios of total current assets to current liabilities. Higher current ratio indicates better liquidity position. In other words, current ratio represents a margin of safety.

The higher the current ratio, the greater the margin of safety, and the larger the amount of current assets in relation to current liabilities, the more the bank's ability to meet its current obligations, although there is no hard and fast rule, conventionally a current ratio of 2:1 (current assets twice of current liabilities) is considered satisfactory.

Current Assets are cash in hand, cash at bank, accrued income, prepaid expenses, bills receivable, debtors, stock etc.

Current liabilities are bills payable, account payable, outstanding expenses, bank overdraft, short term loan etc.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table 4.2

Current Ratio

(Rs. In million)

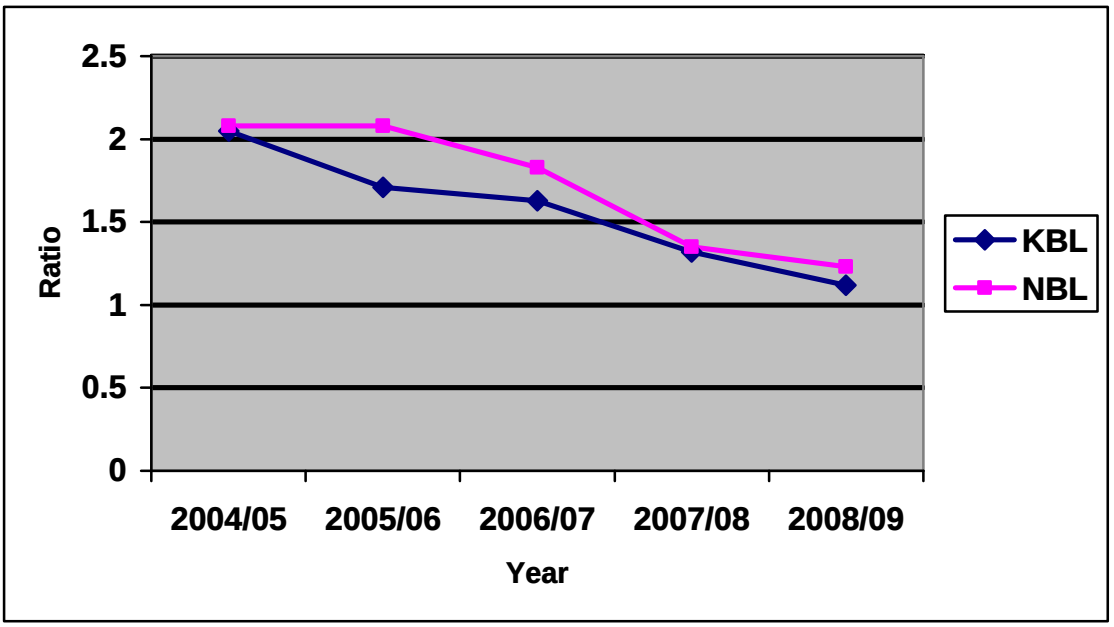
F.Y.	Current Assets		Current Liabilities		Ratios(Times)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	7184	8819	3500	4246	2.05	2.08
2005/06	7426	13858	4320	6662	1.71	2.08
2006/07	11216	16955	6860	9259	1.63	1.83
2007/08	13518	20121	10200	14923	1.32	1.35
2008/09	17280	25303	15440	20444	1.12	1.23
Mean ($\overline{X}$)					**1.57**	**1.71**
Standard Deviation(s)					**0.40**	**0.36**
Coefficient of Variation (CV)					**23.42**	**22.93**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

From the table and figure 4.2 shows the current ratio of both banks are in decreasing trend. Above tables shows both of the banks nearly maintained the conventional standard of 2:1, which shows the banks have proper investment plan. Both banks could not maintain the conventional standard of 2:1. However the average ratio of NBL is greater than that of KBL, which signifies that NBL is more capable of meeting immediate liabilities than KBL. Likewise CV of KBL is higher than NBL, which reveal the inconsistency to its average ratio . KBL is low variabile than NBL. The above figure of current ratio of both banks is comparatively presented in the following line chart.

Figure No 4.2

Current Ratio



Source: Table 4.2

4.1.1.3 Fixed Deposit to Total Deposit Ratio

Fixed deposit is a long term and high interest charge bearing deposit. Although a high cost liability, increasing fixed deposit is subject to an additional advantage if utilized properly. Sufficient fixed deposits enable banks to grant long-term loan to their clients at higher interest rate. This ratio is calculated in order to find out the proportion of total deposit that has higher interest charge bearing. The higher the ratio, the more the interest bearing deposits as well as better liquidity and lower proportion of current or short-term deposit. It is computed by dividing the amount of fixed deposits by the total deposits amount, which is expressed as follows:

$$\text{Fixed Deposit to Total Deposits Ratio} = \frac{\text{Fixed Deposit}}{\text{Total Deposit}}$$

Table 4.3

Fixed Deposits to Total Deposits Ratio

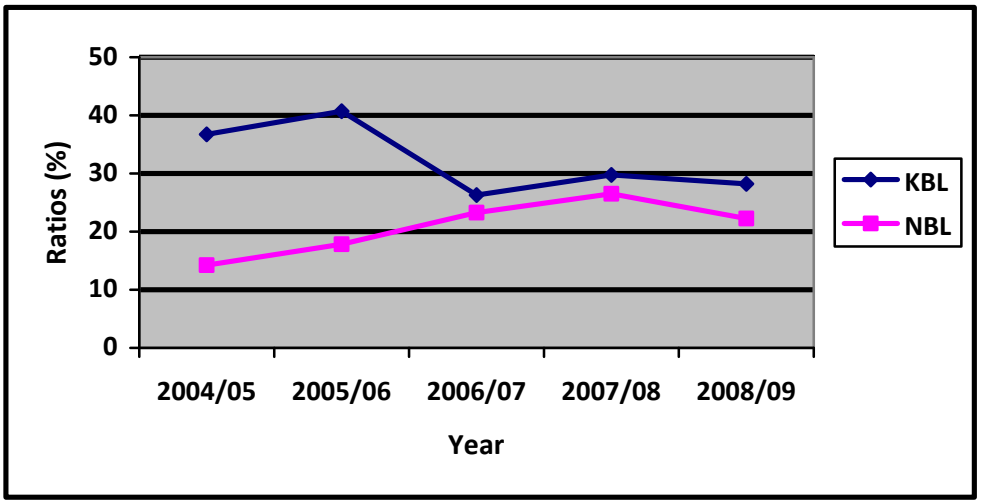
(Rs. In million)

F.Y.	Fixed Deposits		Total Deposits		Ratios (%)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	2302	2078	6269	14587.00	36.72	14.24
2005/06	3163	3449	7769.00	19347.00	40.71	17.82
2006/07	2776	5435	10557.00	23342.00	26.29	23.28
2007/08	3799	8464	12774.00	31915.00	29.74	26.52
2008/09	4527	8310	15711.00	37348.00	28.21	22.25
Mean ($\overline{X}$)					**32.33**	**20.82**
Standard Deviation(s)					**6.13**	**4.82**
Coefficient of Variation (CV)					**18.96**	**23.15**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Above tables shows the Fixed Deposit to Total Depsits ratios of KBL as 36.72%, 40.71%, 26.29%, 29.74%, and 28.21% respectively. Similarly the ratios of NBL came to be 14.24%, 17.82%, 23.28%, 26.52%, and 22.25% respectively. Mean of fixed deposit to total deposit ratio of KBL is greater than NBL i.e.32.33 > 20.82. Likewise CV of NBL is greater than KBL i.e. 23.15% > 18.96%, which means that NBL reveal the inconsistency to its average ratio. The standard deviation of the same ratio of KBL is 6.13 and 4.82 for NBL. which indicates NBL is low variability than KBL. The ratios of both banks revealed fluctuating trend over the period. The above figure can be presented in the following chart as:

Figure 4.3
Fixed Deposits to Total Deposits Ratio



Source Table 4.3

4.1.1.4 Saving Deposit to Total Deposit Ratio

Saving deposit is an interest bearing short-term deposit. The ratio is developed in order to find out proportion of saving deposit, which is interest bearing and short term in nature. It is calculated by dividing the total amount of saving deposits by the amount of total deposits, which can be expressed as follows:

$$\text{Saving Deposit to Total Deposit Ratio} = \frac{\text{Saving Deposit}}{\text{Total Deposit}}$$

Table 4.4

Saving Deposits to Total Deposits Ratio

(Rs. In million)

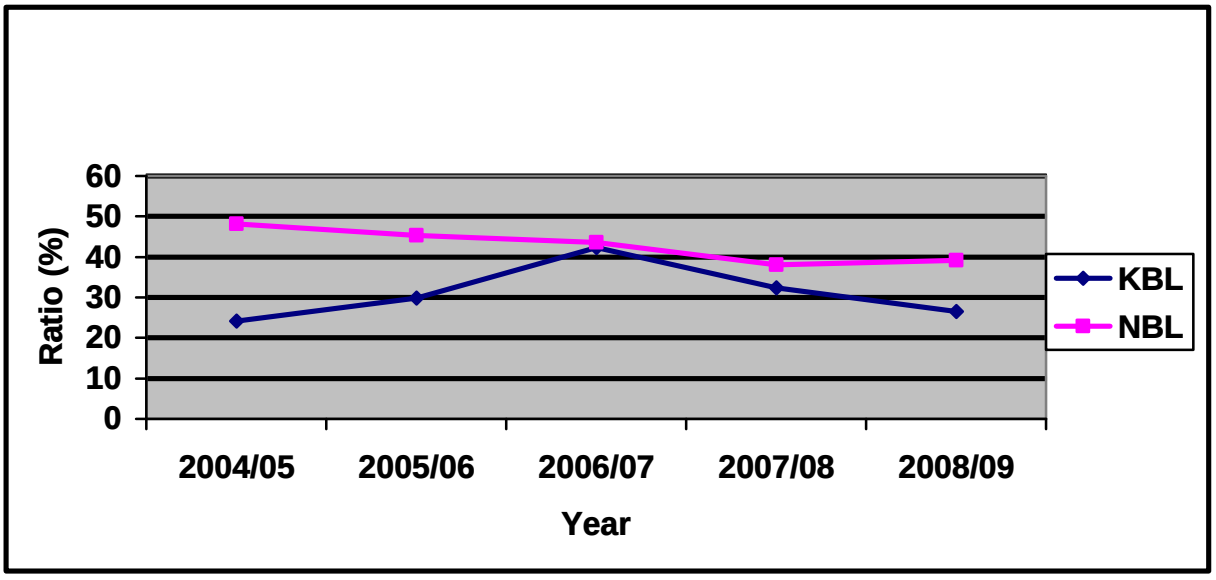
F.Y.	Saving Deposits		Total Deposits		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	1515	7026	6269	14587.00	24.17	48.17
2005/06	2318	8770	7769.00	19347.00	29.84	45.33
2006/07	4462	10187	10557.00	23342.00	42.27	43.64
2007/08	4139	12160	12774.00	31915.00	32.40	38.10
2008/09	4170	14620	15711.00	37348.00	26.54	39.14
Mean ($\overline{X}$)					**31.04**	**42.88**
Standard Deviation(s)					**7.02**	**4.22**
Coefficient of Variation (CV)					**22.62**	**9.84**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Above tables shows the Saving Deposit to Total Deposits ratios of KBL as 24.17%, 29.84%, 42.27%, 32.40%, and 26.54%, similarly the ratios of NBL came to be 48.17%, 45.33%, 43.64%, 38.10%, and 39.14% in respective years of study period. Mean of saving Deposits to Total Deposit of NBL is greater than that of KBL i.e. 42.88 > 31.04. Likewise CV of KBL is greater than that of NBL i.e.22.62 > 9.84% .Which reveals that KBL has inconsistency to its average ratio. The Standard Deviation of the ratio is 7.02 and 4.22 respectively of KBL and NBL, where S.D. of KBL is greater than NBL i.e. 7.02 > 4.22. It indicates that KBL has higher fluctuation than NBL. The above table can be presented in the following chart as:

Figure 4.4

Saving Deposits to Total Deposits Ratio



Source: Table 4.4

4.1.1.5 Cash and Bank Balance to Current Liabilities (CL) Ratio

This ratio is obtained by dividing total cash and bank balance by total current liabilities. This ratio indicates how much cash is available to meet the current liabilities. Especially this ratio is useful to lenders.

$$\text{Cash and Bank Balance to CL Ratio} = \frac{\text{Total Cash and Bank Balance}}{\text{Current Liabilities}}$$

Table 4.5

Cash and Bank Balance to Current Liabilities Ratio

(Rs. In million)

F.Y.	Cash and Bank Balance		Current Liabilities		Ratios (%)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	111	559.00	3500	4246	3.17	13.17
2005/06	389	630.00	4320	6662	9.00	9.46
2006/07	672	1400.00	6860	9259	9.8	15.12
2007/08	933	2671.00	10200	14923	9.15	17.89
2008/09	1776	3372.00	15440	20444	11.50	16.49
Mean ($\overline{X}$)					**8.5**	**14.43**
Standard Deviation(s)					**2.91**	**3.28**
Coefficient of Variation (CV)					**34.24**	**22.73**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/009

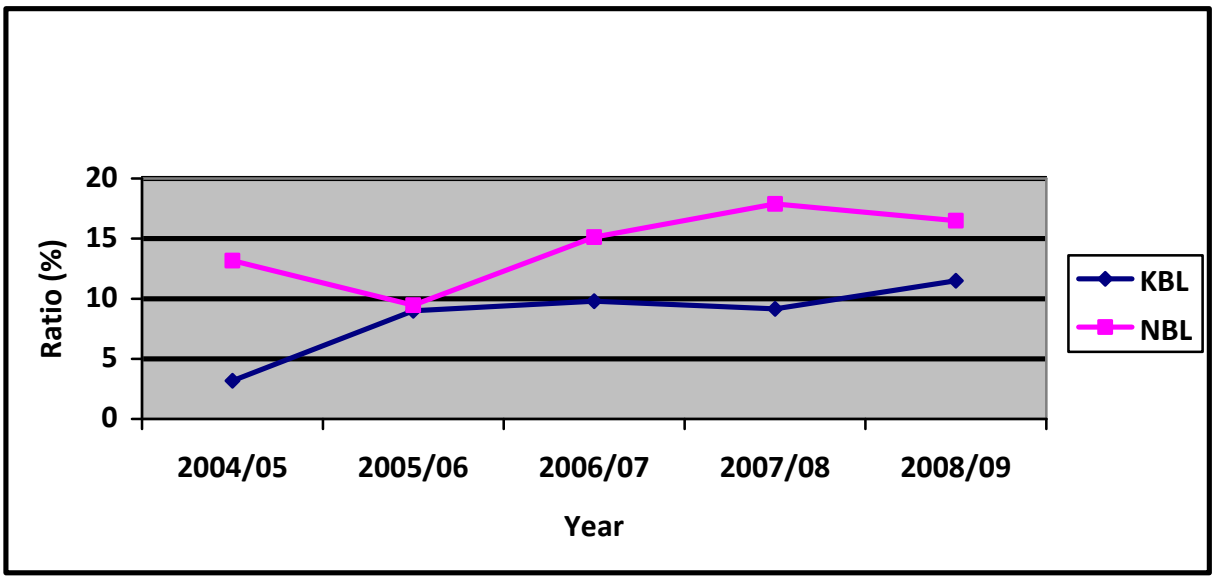
The ratios of KBL revealed increasing and NBL revealed fluctuating trend over the study period. Above tables shows Cash and bank balance to current liabilities ratios of KBL is 3.17%, 9.00%, 9.8%, 9.15% & 11.50% similarly the ratios of NBL came to 13.17%, 9.46%, 15.12%, 17.89% and 16.49% in respective years of study period.

The above table shows the mean, standard deviation and CV of cash and bank balance to current liabilities of KBL came 8.5, 2.91 & 34.24 & NBL came to be 14.43, 3.28 & 22.73, Mean of NBL is greater than KBL i.e.14.43 > 8.5. The above ratio showed that both banks had not constant proportion of cash balance and current liabilities through out the study period. In other words NBL is more successful in managing liquidity. CV of NBL is also lower than that of KBL, which reveals ratios of NBL is more consistent than that of KBL .

The above table can be presented in the following chart as:

Figure 4.5

Cash and Bank Balance to Current Liabilities Ratio



Source: Table 4.5

4.1.1.6 Cash and Bank Balance to Current Assets (CA) Ratio

This ratio measures the total portion of cash and bank balance included in current assets. Current assets include cash and bank balance as well as other assets that can immediately converted into the cash. So, the main reason for calculating this ratio is to find out the portion of cash and bank balance included in current assets. This ratio is calculated dividing total cash and bank balance by current assets. Cash means the firm's holding of currency and demand deposits. It is most liquid assets because a firm disburses it immediately with out any restriction

$$\text{Cash and Bank balance to CA Ratio} = \frac{\text{Total Cash and Bank balance}}{\text{Current Assets}}$$

Table 4.6

Cash and Bank Balance to Current Assets Ratio

(Rs. In million)

F.Y.	Cash and Bank Balance		Current Assets		Ratios (%)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	111	559.00	7184	8819	1.55	6.34
2005/06	389	630.00	7426	13858	5.24	4.55
2006/07	672	1400.00	11216	16955	5.99	8.26
2007/08	933	2671.00	13518	20121	6.90	13.27
2008/09	1776	3372.00	17280	25303	10.28	13.33
Mean ($\overline{X}$)					**6.00**	**9.15**
Standard Deviation(s)					**3.14**	**4.01**
Coefficient of Variation (CV)					**52.38**	**43.82**

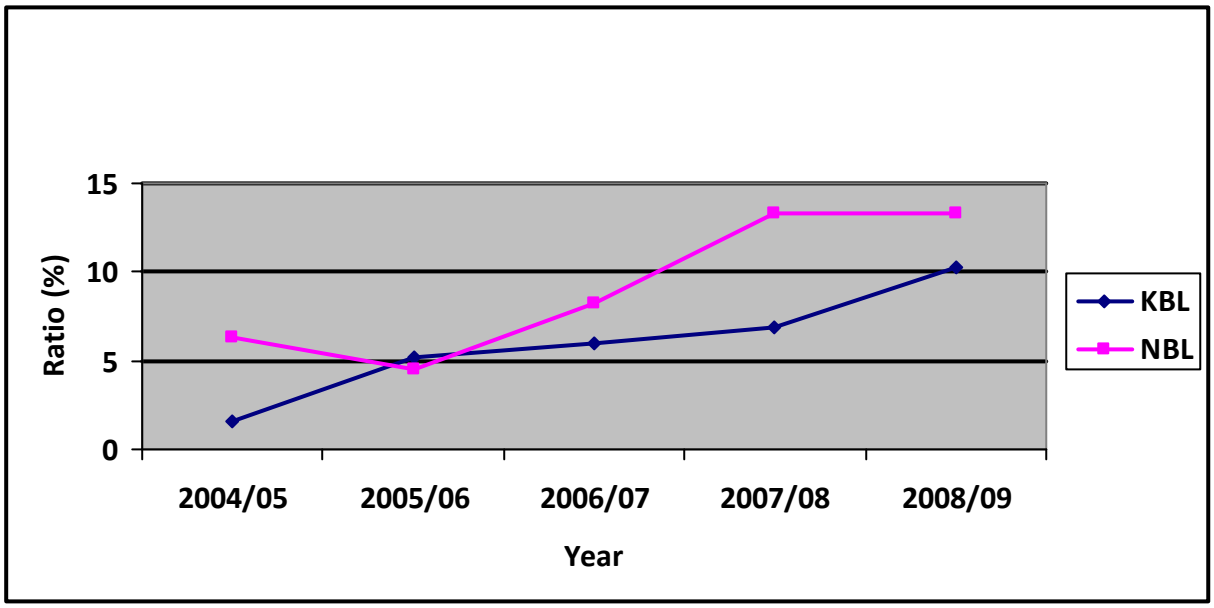
Source: Annual Reports of KBL & NBL from FY 2004/05

Above table shows the cash and bank balance to current assets ratios of KBL and NBL. There should be certain percentage of current assets as cash and bank balance to maintain the liquidity. The ratios in KBL remained 1.55%, 5.24%, 5.99%, 6.90%, &10.28% respectively through out the study period. Similarly the ratios in NBL came 6.34%, 4.55%, 8.26%, 13.27% & 13.37% in the respective study period.

Mean, standard deviation and CV of cash and bank balance to current assets ratio of KBL came 6.00, 3.14 & 52.38% respectively. Similarly mean, standard deviation and CV of cash and bank balance to current assets ratio of NBL came 9.15, 4.01 & 43.82% respectively. The average ratio of NBL is higher than that of KBL, which shows that NBL has more liquidity of cash than that of KBL. CV of KBL is higher than NBL which reveals that the inconsistency to its average ratio .The ratios are increasing trends for the KBL and fluctuating trends for the NBL .

It can be clearly shown by the following chart-

Figure 4.6
Cash and Bank Balance to Current Assets Ratio



Source: Table 4.6

4.1.1.7 NRB Balance to Total Deposit Ratio

This ratio is obtained dividing NRB balance by total deposits. Bank has to hold a balance of certain percentage of total deposits. The amount should be deposited in Nepal Rastra Bank in order to satisfy legal requirements.

$$\text{NRB balance to Total Deposit Ratio} = \frac{\text{NRB Balance}}{\text{Total Deposit}}$$

Table 4.7
NRB Balance to Total Deposit Ratio
(Rs. In million)

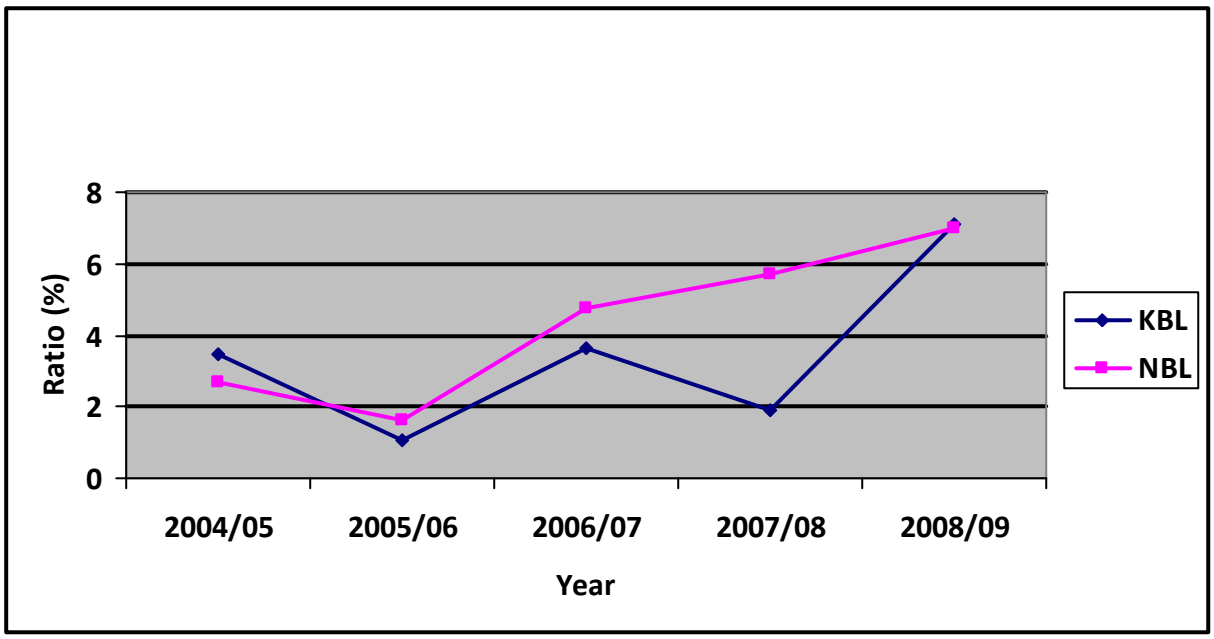
F.Y.	NRB Balance		Total Deposits		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	219	390	6269	14587	3.49	2.67
2005/06	210	318	7769	19347	1.09	1.64
2006/07	384	1113	10557	23342	3.64	4.77
2007/08	244	1829	12774	31915	1.91	5.73
2008/09	1120	2648	15711	37348	7.13	7.01
Mean ($\overline{X}$)					**3.45**	**4.36**
Standard Deviation(s)					**2.32**	**2.20**
Coefficient of Variation (CV)					**67.25**	**50.46**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/009

Above table shows that the ratios of KBL as 3.49%, 1.09%, 3.64%, 1.91% and 7.13% respectively. Similarly the ratios of NBL came to be 2.67%, 1.64%, 4.77%, 5.73%& 7.01% respectively. Mean, standard deviation and CV of NRB balance to total deposit ratio of KBL came 3.45, 2.32 & 67.25% & 4.36, 2.20 & 50.46% of NBL, where Mean of NBL is greater than KBL i.e. 4.36 > 3.45, which indicates that NBL has the higher mean ratio of balance at NRB to total deposit. It means that liquidity position of NBL regarding with this ratio is better than that of KBL during the study period. Standard Deviation & CV of KBL is greater than NBL i.e. 2.32 > 2.20 & 67.25 > 50.46 respectively, which means that KBL has more fluctuation in ratios compared with NBL. The above table can be presented in the following chart

Figure 4.7

NRB Balance to Total Deposits



Source: Table 4.7

4.1.1.8 Cash Reserve Ratio (CRR)

Commercial banks are directed by Nepal Rastra Bank, the central bank to maintain certain percentage of their deposits liabilities with NRB in own account in order to enable them to maintain the sound liquidity position. Cash reserve ratio (CRR) describes whether the commercial banks have met the liquidity requirement as prescribed by NRB or not. In 2003 NRB issued notice in monetary policy and prescribed CRR rate as 6% of total deposit but it was revised in 2004 as 5% of total deposit. Since 2003 NRB has withdrawn the other reserve ratio for liquidity purpose

like statutory liquidity ratio. Presently commercial banks have to maintain 5.5% of their total deposit in NRB and own in hand. It is computed by dividing the cash reserve of commercial banks by total deposit and the formula is:

$$\textit{Cash Reserve Ratio (CRR)} = \frac{\text{Cash in Reserve}}{\text{Total Deposits}}$$

Table: 4.8

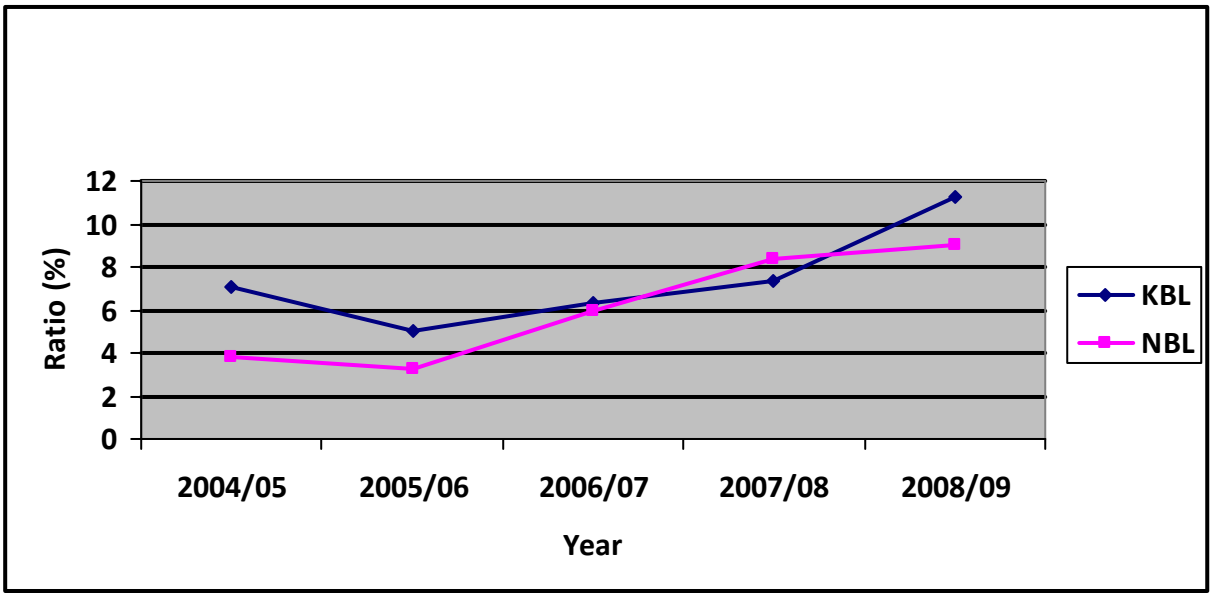
F.Y.	Cash in Reserve		Total Deposit		Ratios (%)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	443	559	6269	14587	7.06	3.83
2005/06	389	630	7769	19347	5.00	3.27
2006/07	673	1399	10557	23342	6.34	6.00
2007/08	935	2670	12774	31915	7.32	8.37
2008/09	1775	3373	15711	37348	11.30	9.03
Mean ($\overline{X}$)					**7.4**	**6.1**
Standard Deviation(s)					**2.36**	**2.6**
Coefficient of Variation (CV)					**31.9**	**42.62**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

From the table 4.8, it is portrayed that the ratios of CRR are in increasing trend in KBL and fluctuating trend in NBL. The average CRR of each bank is more than the standard set by NRB i.e. 5.5%.This shows that each bank has tied up their fund in excess deposit in NRB, other banks and hold in cash, which ultimately affects the profitability negatively. The average ratios of KBL and NBL are 7.4% and 6.1% respectively. In average all banks are in strong liquidity position, further more the CV of KBL 31.9% reveals the better consistency to ratios during the study period than NBL of 42.62% respectively. With the help of the above figure it can be seen more clearly.

Figure: 4.8

Cash Reserve Ratio



Source: Table 4.8

4.1.2 Utilization Ratio

The fund of creditors and owners are invested in various assets to generate sales and profit. Activity ratios are used to evaluate the efficiency with which the firm manages and utilizes its assets. This ratio measures a firm's efficiency in utilization of its assets. These ratios look at the amount of various types of assets and attempt to determine if they are too high or too low with regard to current operating levels. This ratio indicates how quickly certain current assets are converted into cash. From this ratio it can be known whether or not the business activities are efficient. These ratios are also called turnover ratio because they indicate speed with which assets are converted or turnover into profit generating assets. These ratios, moreover, help in measuring the banks ability to utilize their available resources. Mostly utilization ratios are used to evaluate managerial efficiency and proper utilization of assets. Following ratio is used under the activity ratios.

4.1.2.1 Loan and Advances to Saving Deposit Ratio

This ratio is also employed for the purpose of measuring utilization of saving deposits in generating revenue by giving loan and advances to the client i.e. to determine to what extent collected saving deposit amount is being deployed in providing loan and advances to generate income. This ratio indicates to what extent of saving deposits has been turned over to loans and advances.

Saving deposits are interest-bearing obligation for short-term purpose whereas loan and advances are the short investment for revenue income. This ratio indicates how much short-term interest bearing deposits are utilized for income generating purpose. If the ratio is high the firm is assumed to be successful in utilizing its saving deposits to generate profit. The formula for this ratio is as follows:

$$\text{Loan and Advances to Saving Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Saving Deposit}}$$

Table 4.9

Loans and Advances to Saving Deposits Ratio

(Rs. In million)

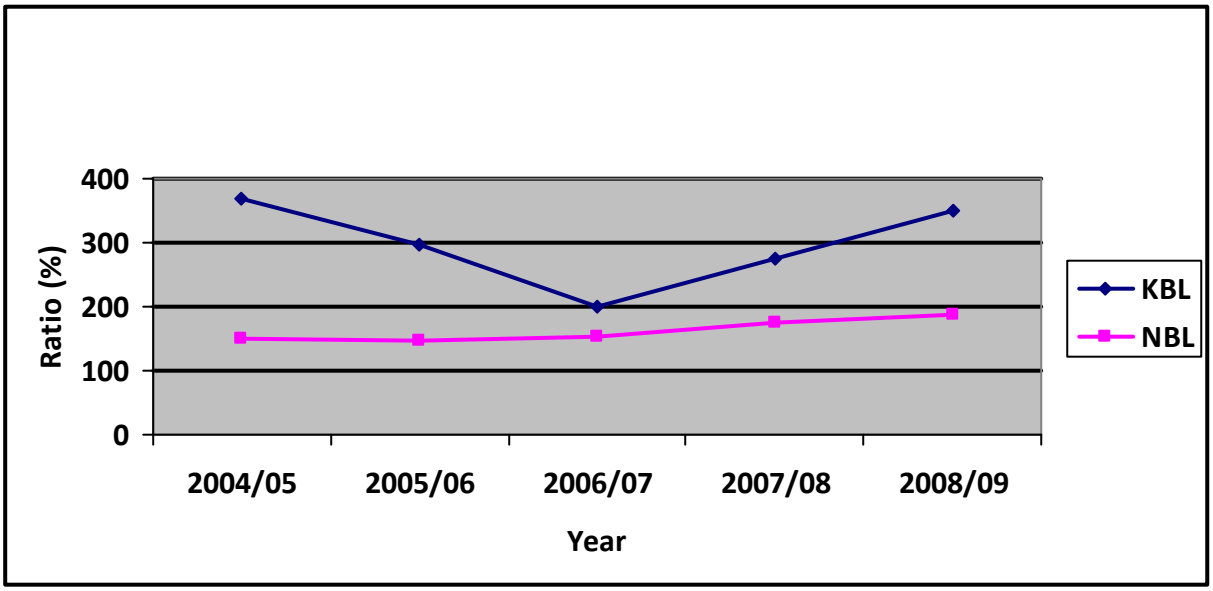
F.Y.	Total Loan and Advance		Saving Deposits		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	5590	10586	1515	7026	368.97	150.67
2005/06	6892	12923	2318	8770	297.32	147.35
2006/07	8929	15546	4462	10187	200.11	152.61
2007/08	11335	21365	4139	12160	273.86	175.70
2008/09	14593	27589	4170	14620	350	188.70
Mean ($\overline{X}$)					**298.05**	**163.01**
Standard Deviation(s)					**66.91**	**18.21**
Coefficient of Variation (CV)					**22.45**	**11.17**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Above table shows loans and advances to saving deposit ratio in KBL as 368.97%, 297.32%, 200.11%, 273.86%, & 350% respectively for the study period. Similarly the ratios in NBL were 150.67 %, 147.35%, 152.61%, 175.70%, & 188.67% respectively. Average ratio of KBL seemed to be greater than that of NBL, which indicates that KBL has mobilized its saving deposits in term of loans and advances more successfully. But CV shows the ratios in NBL were more consistent than that of KBL. Similarly, the standard deviation is higher in KBL which indicates that line diagram fluctuating from year to year.

The above table can be presented in the following chart

Figure 4.9
Loans and Advances to Saving Deposits Ratio



Source: Table 4.9

4.1.2.2 Loan and Advances to Fixed Deposit Ratio

This ratio differs slightly from the former one because it includes the fixed deposits only. The ratio measures how many much amount is used in loan and advances in comparison to fixed deposits. Fixed deposits are interest bearing long-term obligations where as loan and advances are the major sources of investment in generating income for Development banks. It is calculated as follows:

$$\text{Loan and Advances to Fixed Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Fixed Deposit}}$$

Table 4.10
Loans and Advances to Fixed Deposits Ratio

(Rs. In million)

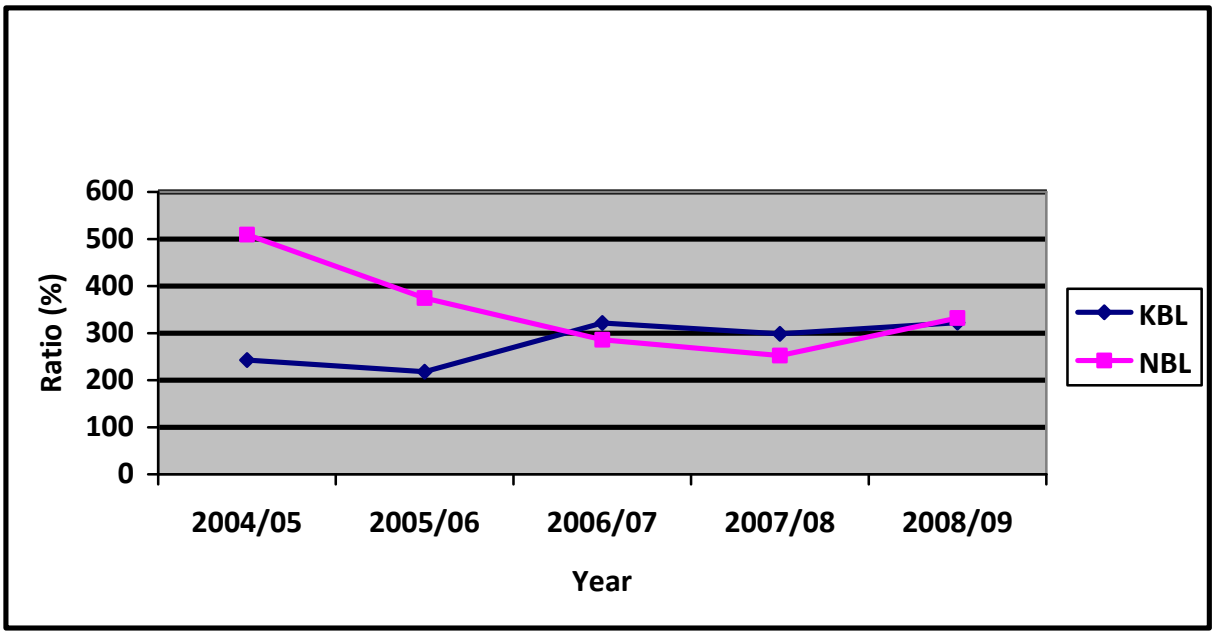
F.Y.	Total Loan and Advance		Fixed Deposits		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	5590	10586	2302	2078	242.83	509.43
2005/06	6892	12923	3163	3449	217.89	374.69
2006/07	8929	15546	2776	5435	321.65	286.03
2007/08	11335	21365	3799	8464	298.37	252.42
2008/09	14593	27589	4527	8310	322.35	332
Mean ($\overline{X}$)					**280.61**	**350.91**
Standard Deviation(s)					**47.70**	**99.95**
Coefficient of Variation (CV)					**17.00**	**28.48**

Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Above table shows the loans and advances to fixed deposit ratio of KBL and NBL. The ratios in KBL came 242.83%, 217.89%, 321.65%, 298.37% and 322.35%where as the ratios in NBL came 509.43%, 374.69%, 286.03 %, 252.42% and 332 respectively in the study period. The ratios in both banks are in fluctuating trend.

Mean, standard deviation and CV for loan and advances to fixed deposit of KBL is 280.61, 47.70 and 17.00. Similarly, 350.91, 99.95 and 28.48 % respectively of NBL. The average ratio in NBL seemed greater than KBL which indicates that NBL has more successfully utilized the high interest bearing deposit in term of loans and advances. Moreover, turnover position of NBL is better than that of KBL. CV shows that NBL reveals the inconsistency to its average ratio than that of KBL . The above table can be presented in the following chart.

Figure 4.10
Loans and Advances to Fixed Deposits Ratio



Source: Table 4.10

4.1.2.3 Loans and Advances to Total Deposit Ratio

The ratio assesses to what extent the bankers are able to utilize the depositor's fund to earn profit by providing loans and advances. In other words, how quickly total collected deposit are converted into loan and advances given to the client to earn income. It is computed by dividing the total amount of loan and advances to total deposit fund. Higher ratio indicates higher/proper utilization of funds and low ratio is the signal of inefficiency or remaining idle.

$$\text{Loan and Advances to Total Deposit Ratio} = \frac{\text{Loans and Advances}}{\text{Total Deposit}}$$

Table 4.11

Loans and Advances to Total Deposits Ratio

(Rs. In million)

F.Y.	Total Loan and Advance		Total Deposits		Ratios (%)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	5590	10586	6269	14587	89.17	72.57
2005/06	6892	12923	7769	19347	88.71	66.80
2006/07	8929	15546	10557	23342	84.58	66.60
2007/08	11335	21365	12774	31915	88.73	66.94
2008/09	14593	27589	15711	37348	92.88	73.87
Mean ($\overline{X}$)					**88.81**	**69.36**
Standard Deviation(s)					**2.94**	**3.56**
Coefficient of Variation (CV)					**3.31**	**5.13**

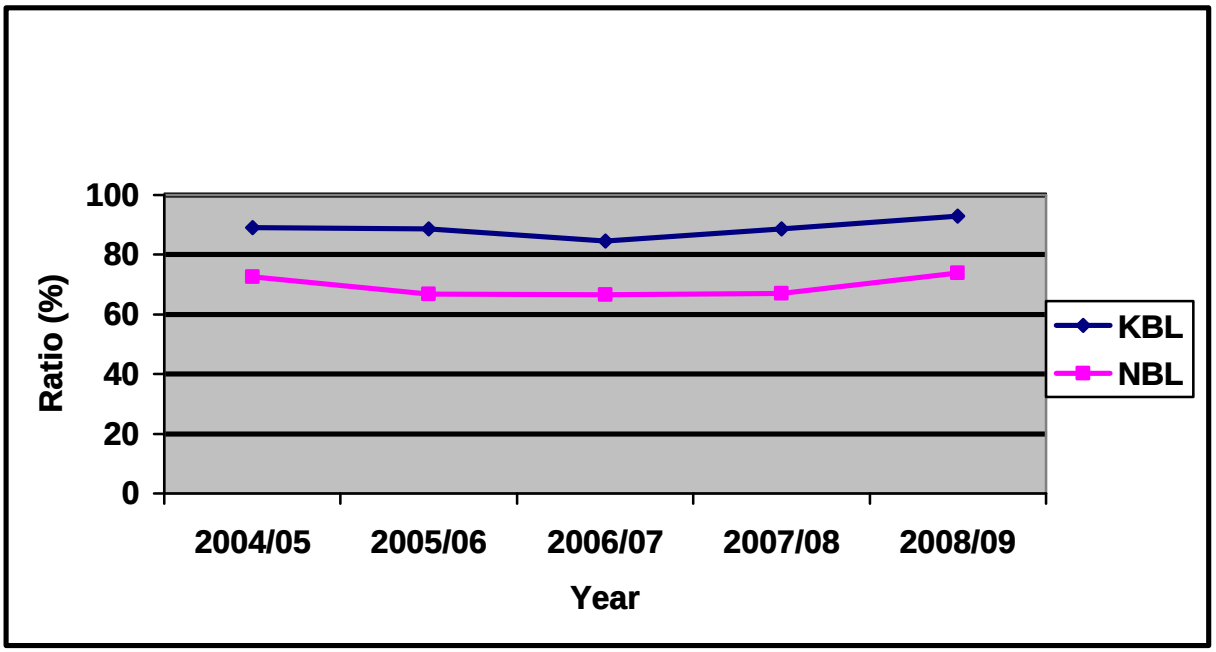
Source: Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

From the above table the ratio in KBL came 89.17,.88.71, 84.58, 88.73, and 92.88% for the study period. Similarly the ratios in NBL came 72.57,66.80, 66.60, 66.94 and 73.87 % respectively in the study period. The ratios of KBL and NBL are in fluctuating trend. Mean, standard deviation and CV for loan and advances to total deposit ratio of KBL is 88.81, 2.94 and 3.31%. Similarly these ratios are 69.36, 3.56 and 5.13% respectively of NBL. Mean ratio of KBL appeared considerably higher which signifies that KBL is more successful in utilizing the resources in profitable sectors than NBL. S.D of KBL is lower than NBL which indicates that KBL is less variable than NBL. CV of NBL is higher than KBL which reveals the inconsistency to its average ratio.

The above table can be presented in the following chart.

Figure 4.11

Loans and Advances to Total Deposits Ratio



Source: Table 4.11

4.1.2.4 Investment to Total Deposits Ratio

This ratio is calculated dividing total investment by total deposits. Total investment includes government treasury bills, development bonds, company shares and other investments. This ratio presents how efficiently the resources of the banks have been mobilized.

$$\text{Investment to Total Deposit Ratio} = \frac{\text{Total Investment}}{\text{Total Deposit}}$$

Table 4.12

Investment to Total Deposits Ratio

(Rs. In million)

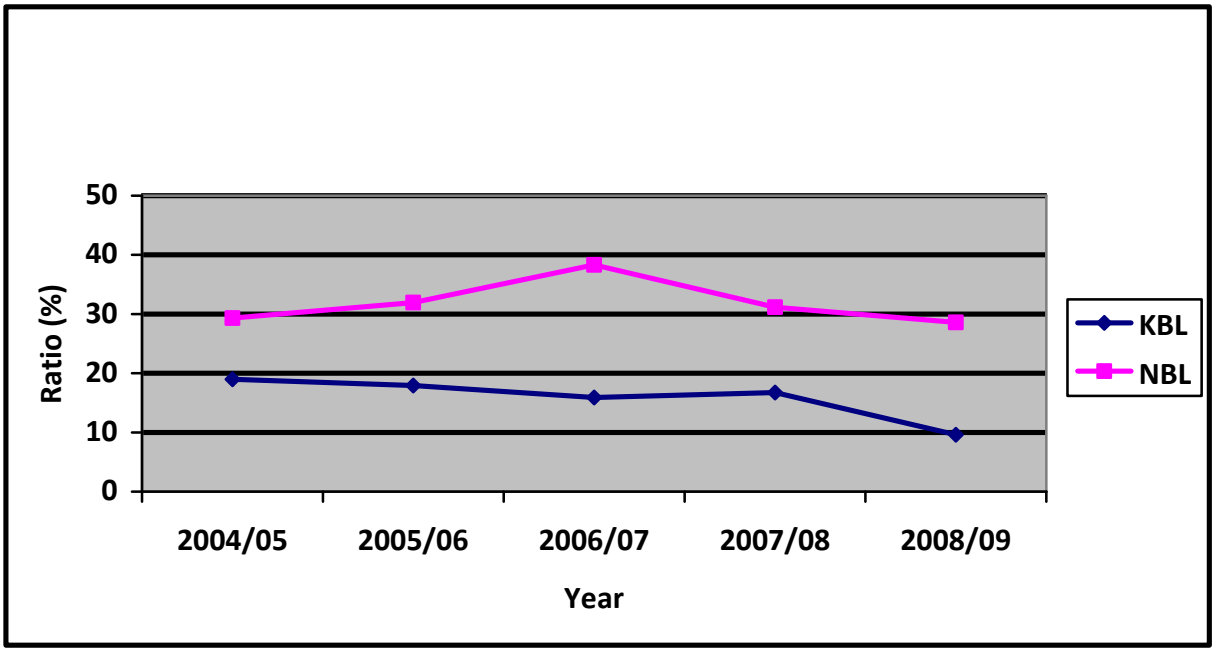
F.Y.	Total Investment		Total Deposits		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	1190	4276	6269	14587.00	18.98	29.31
2005/06	1394	6179	7769.00	19347.00	17.94	31.94
2006/07	1678	8945	10557.00	23342.00	15.89	38.32
2007/08	2138	9940	12774.00	31915.00	16.74	31.15
2008/09	1510	10826	15711.00	37348.00	9.61	28.98
Mean ($\overline{X}$)					**15.83**	**31.94**
Standard Deviation(s)					**3.67**	**3.78**
Coefficient of Variation (CV)					**23.18**	**11.83**

Source: Annual Reports of KBL& NBL from FY 2004/05to 2008/09

Above table shows the investment to total deposit ratio of KBL and NBL. The ratios for KBL came 18.98%, 17.94%, 15.89%, 16.74% and 9.61% in the study period. Similarly the ratios in NBL came 29.31%, 31.94%, 38.32%, 31.15% and 29.98% for the respective years. The ratios are in fluctuating trend for KBL and NBL. The ratio of NBL is also fluctuating trend deviating3.78% from the average ratio of 31.94%. Since its CV is 11.83% it is consistent to average ratio. Between these two banks NBL is in strong position in investment to total deposit ratio. It has invested more than 38.32% in 2006/07. Its average investment ratio is 31.94%. The investment position of KBL is lower than NBL. NBL is satisfactory level. The trends of ratio can be seen in Diagram clearly.

Figure 4.12

Investment to Total Deposits Ratio



Source: Table 4.12

4.1.3 Profitability Ratio

The profitability ratio, as the name suggests, measures the operating profitability in terms of profit margin return on equity and return on total investment, and reflects the overall efficiency and effectiveness of management. Shareholders, bankers, government, tax collectors, employees are concerned with the profitability of the company; the shareholders and interested with their rate of return, employees in the future prospect of the company, government in companies,' tax payment capacity and bankers in the perspective of the company. A required level of profit is necessary for survival and growth of a firm in a competitive environment.

Profitability can be measured in terms of a relationship between net profit and assets. This ratio is also known as profit-to-assets ratio. It measures the profitability of investment. The profitability of banks should be evaluated in terms of its investment in assets and in term of capital contributed by creditors. A bank should be able to produce adequate profit on each rupee of investment. If investment do not generate sufficient profits, it would be very difficult for the banks to cover operating expenses and interest charges.

Various ratios can be developed based upon the profit under different circumstances. These different ratios are called profitability ratios, which are required to support the purpose of study. The profitability ratios calculated in this study are:

4.1.3.1 Return on Total Assets Ratio (ROA)

This ratio is calculated, dividing net profit by total assets. This ratio represents the relationship between net profit and assets. Net profit indicates the profit after deduction on interest and tax. Total asset means the assets that appear in assets side of balance sheet. The increasing ratio shows favorable situation for the banks. The higher ratio also shows that the bank could well manage their overall operations. But the lower ratio shows vice-versa.

$$\text{Return on Total Assets Ratio} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

Table 4.13

Return on Total Assets Ratio

(Rs. In million)

F.Y.	Net Profit		Total Assets		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	84	518	7428	17186	1.13	3.01
2005/06	104	635	9010	22329	1.15	2.84
2006/07	170	674	11918	27253	1.43	2.47
2007/08	175	746	15027	37133	1.16	2.00
2008/09	261	1031	18539	43867	1.41	2.35
Mean ($\overline{X}$)					**1.26**	**2.53**
Standard Deviation(s)					**0.14**	**0.40**
Coefficient of Variation (CV)					**11.11**	**15.81**

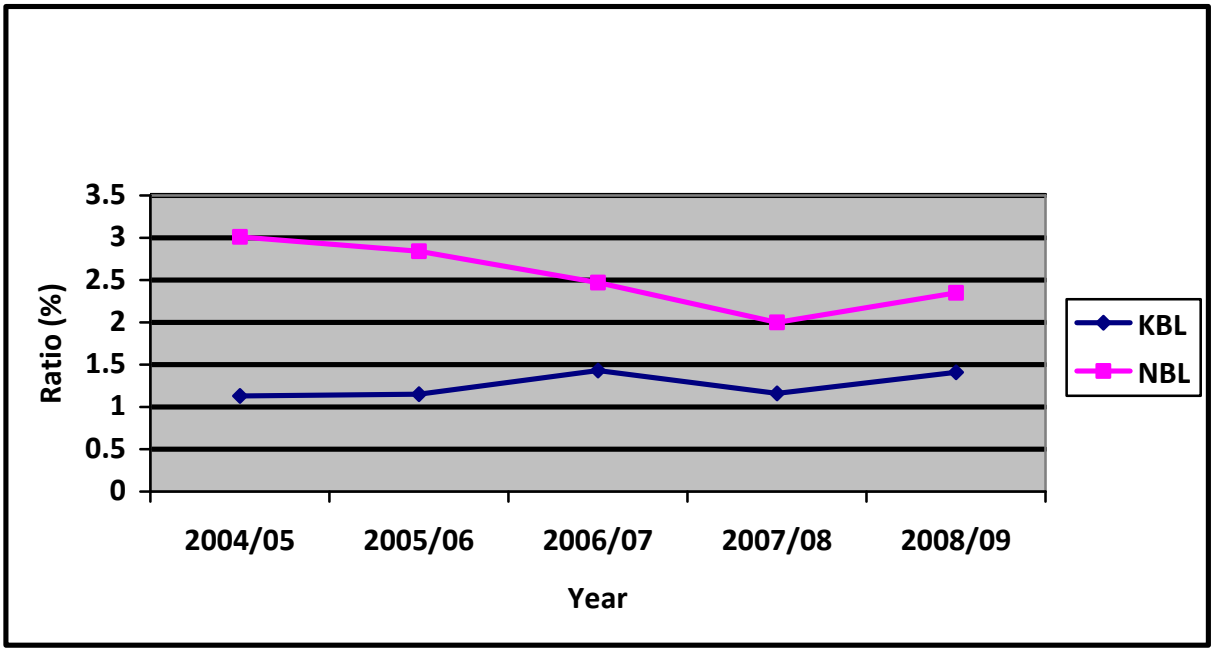
Source: Annual Reports of KBL& NBL from FY 2004/05to 2008/09

Above table shows the return on total assets of KBL and NBL. Above tables shows the ratios 1.17%, 1.15%, 1.43%, 1.16%, and 1.41% in KBL for the study period. Similarly the ratios of NBL came 3.01%, 2.84%, 2.47%, 2.00%, and 2.35% for the study period. Above table shows the return on total assets of KBL and NBL. The average ratio of NBL was higher than that of KBL, which implies that NBL has more efficient operation of optimal utilization of the resources in comparison with same period of KBL. Like wise CV of KBL was less than that of NBL, which indicates that, the variability of the ratio of KBL was more uniform than that of NBL. S.D of NBL is more than that of KBL which indicates line diagram is more fluctuating from year to year than NBL.

It can be clearly shown by the following chart.

Figure 4.13

Return on Total Assets Ratio (ROA)



Source: Table 4.13

4.1.3.2 Net Profit to Total Deposit Ratio

This ratio measures the percentage of profit earned from the utilization of the total deposit. Deposits are mobilized for investment, loan and advances to the public in generating revenue. Higher ratio indicates the return from investment on loans and lower ratio indicates that the funds are not properly mobilized.

$$\text{Net Profit to Total Deposit Ratio} = \frac{\text{Net Profit}}{\text{Total Deposits}}$$

Table 4.14
Net Profit to total Deposit Ratio

(Rs. In million)

F.Y.	Net Profit		Total Deposit		Ratios (%)	
	KBL	**NBL**	**KBL**	**NBL**	**KBL**	**NBL**
2004/05	84	519	6269	14587.00	1.34	3.56
2005/06	104	635	7769.00	19347.00	1.34	3.28
2006/07	170	674	10557.00	23342.00	1.61	2.89
2007/08	175	747	12774.00	31915.00	1.37	2.34
2008/09	261	1031	15711.00	37348.00	1.66	2.76
Mean($\overline{X}$)					**1.47**	**2.97**
Standard Deviation(s)					**0.15**	**0.63**
Coefficient of Variation (CV)					**10.35**	**21.21**

Source: Annual Reports of KBL& NBL from FY 2004/05to 2008/09

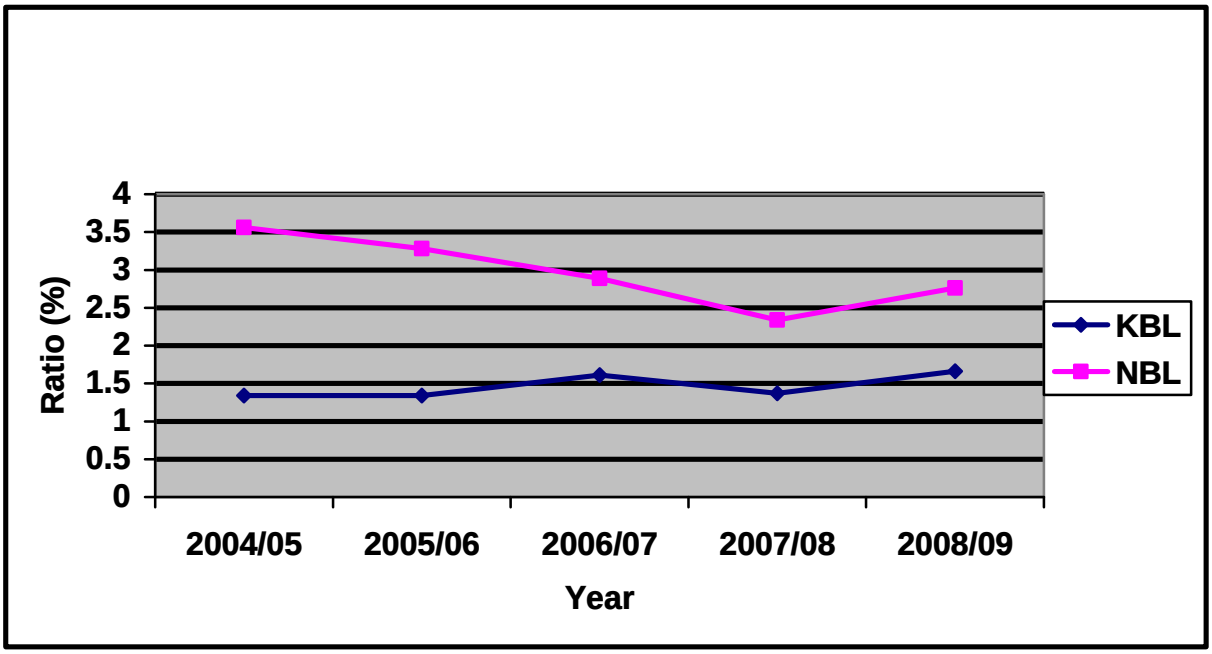
Above table shows the return on total deposit of KBL and NBL. The ratios of both banks are in fluctuating trend. The ratios in KBL remained 1.34%, 1.34%, 1.61%, 1.37%, and 1.66% in the study period. Similarly the ratios in NBL came 3.56%, 3.28%, 2.89%, 2.34% and 2.76% in the study period.

The mean Standard Deviation and CV net profit to total deposits of KBL are 1.47, 0.15 and 10.35% respectively. Similarly mean, standard deviation and CV of NBL are 2.97, 0.63 and 21.21%.

The average ratio of NBL is higher than that of KBL. Similarly CV of KBL is lower than that of NBL, which mean that there is more consistency in the ratio than NBL in respect of return to total deposit. Finally it can be concluded that KBL had utilized its outsider's fund in better way to generate return and it is increasing its profit every year.

It can be clearly shown by the following chart-

Figure 4.14
Net Profit to Total Deposit Ratio



Source: Table 4.14

4.1.3.3 Return on common shareholders' equity

This ratio is calculated by dividing net profit by common shareholders equity. This ratio measures the return on shareholders investment in the bank. The higher ratio of return on equity is better for shareholders. It builds trustworthiness to the customers as well as reputation of the bank.

$$\text{Return on common shareholders' equity} = \frac{\text{Net Profit}}{\text{Shareholders' Equity}}$$

Table 4.15
Return on Common Shareholder's Equity (ROE)

(Rs. In million)

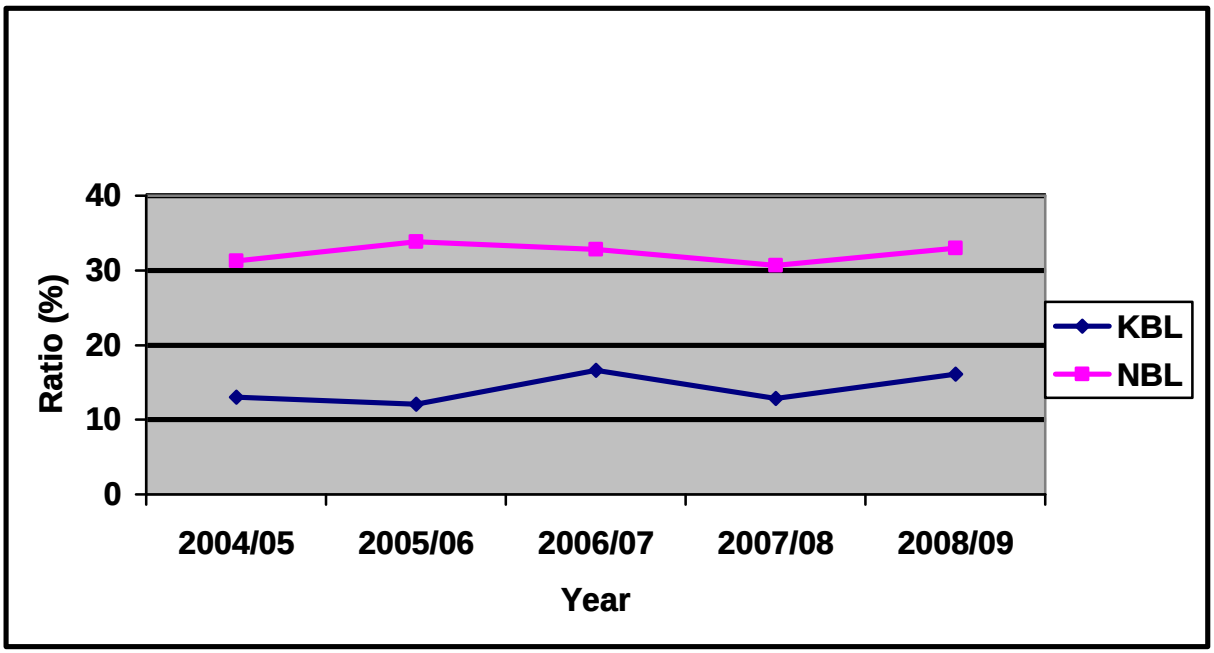
F.Y.	Net Profit		Shareholder's Equity		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	84	519	645	1658	13.02	31.30
2005/06	104	635	864	1875	12.04	33.87
2006/07	170	674	1026	2057	16.60	32.77
2007/08	175	747	1365	2437	12.82	30.65
2008/09	261	1031	1625	3130	16.06	32.94
Mean ($\overline{X}$)					**14.11**	**32.31**
Standard Deviation(s)					**2.07**	**1.31**
Coefficient of Variation (CV)					**14.67**	**4.05**

Source: Annual Reports of KBL& NBL from FY 2004/05to 2008/09

Above table shows the return on shareholder equity of KBL and NBL. The ratios of KBL in the study period are 13.02%, 12.04%, 16.60%, 12.82% and 16.06% Similarly the ratios of NBL are 31.30%, 33.87%, 32.77%, 30.65% and 32.94 % respectively for the study period.

Mean, standard deviation and CV for the return on shareholders equity of KBL is 14.11, 2.07 and 14.67% and 32.31, 1.31 and 4.05% respectively of NBL. The average ratio of NBL for return on shareholders equity was higher than that of KBL. Likewise the CV was higher than KBL. This shows the return on shareholders equity of KBL was more consistent to its average ratio. The above table can be presented in the following chart.

Figure 4.15
Return on Common Shareholder's Equity (ROE)



Source: Table 4.15

4.1.3.4 Return on Working capital

This ratio is calculated dividing net profit after tax by working capital. This ratio measures the proportion of net profit after tax and working capital. Working capital is obtained by subtracting current assets from current liabilities. The higher ratio is better which shows little working capitals utilized properly.

$$\text{Return on Working Capital} = \frac{\text{Net Profit}}{\text{Working Capital}}$$

Table 4.16
Return on Working Capital Ratio

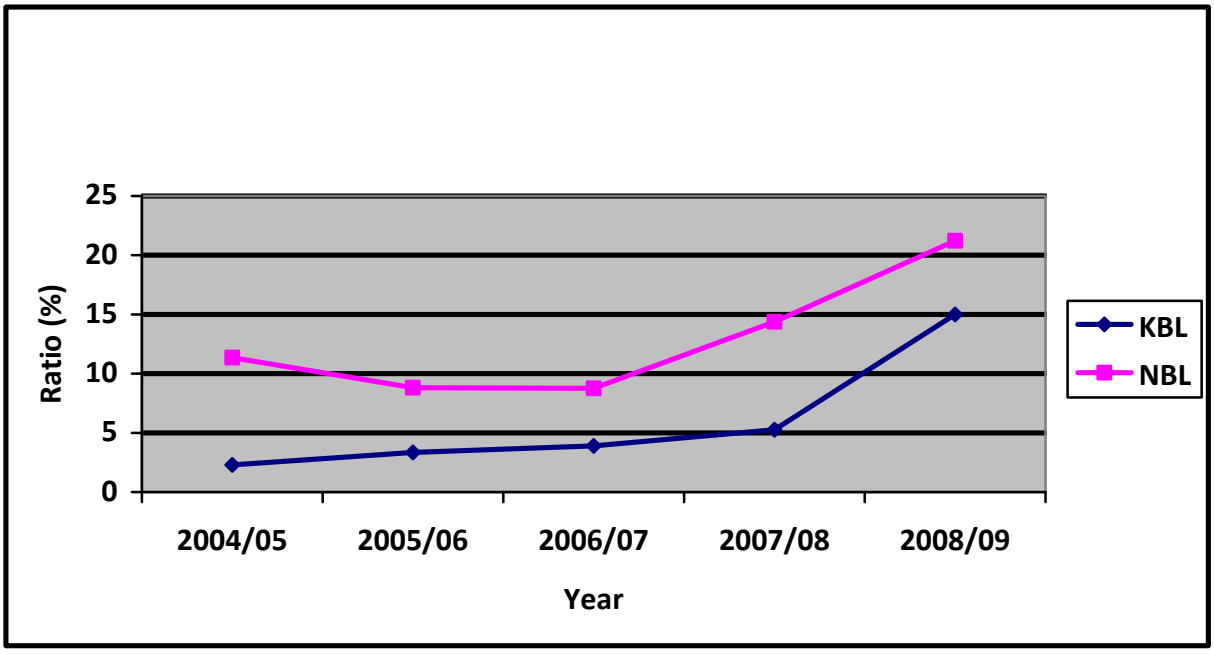
(Rs. In million)

F.Y.	Net Profit		Net Working Capital		Ratios (%)	
	KBL	NBL	KBL	NBL	KBL	NBL
2004/05	84	519	3684	4573	2.3	11.35
2005/06	104	635	3106	7196	3.35	8.82
2006/07	170	674	4356	7696	3.90	8.76
2007/08	175	747	3318	5198	5.27	14.37
2008/09	261	1031	1740	4859	15	21.22
Mean ($\overline{X}$)					**5.96**	**12.9**
Standard Deviation(s)					**5.16**	**5.19**
Coefficient of Variation (CV)					**86.63**	**40.23**

Source: Annual Reports of KBL& NBL from FY 2004/05to 2008/09

Mean, Standard deviation and CV for the return on working capital of KBL is 5.96, 5.16 and 86.63% and 12.9, 5.19 and 40.23% respectively of NBL for the study period. The mean ratio of NBL was higher that that of KBL which shows that NBL has higher return on working capital. Return on working capital was considerably higher in NBL, which signifies that NBL was more successful to utilize the working capital for making profit. C.V of NBL is less than that of KBL which reveals the consistency to its average ratio.

Figure 4.16
Return on Working Capital



Source: Table 4.16

4.2 Statistical Analysis

Various financial tools mentioned above were used to analyze the cash and liquidity management of Commercial Banks. Similarly, the relationship between different variables related to the study topics were drowning out using statistical tools.

4.2.1 Mean or Average

The mean or average value is a single value within the range of the data that is used to represent all the value in the series. Since an average is somewhere within the range of the data, it is also called a measure of central value. Average value is obtained by adding together all the terms and dividing this total by the number of items. The formula is given below:

$$\overline{X} = \frac{\sum X}{N}$$

Where,

$\overline{X}$ = Arithmetic average,

X = Sum of value of all term and

N = Number of terms

4.2.2 Standard Deviation

The standard deviation is the measure that is most often used to describe variability in data distributions. It can be thought of as a rough measure of the average amount by which observations deviate on either side of the mean. Denoted by Greek letter σ (read as sigma), standard deviation is extremely useful for judging the representatives of the mean. Standard deviation is represented as:

$$s = \sqrt{\frac{\sum d^2}{n - 1}}$$

Where,

s = Standard deviation,

d^2 = Sum of the squares of the deviations measured from the arithmetic average, and,

n = Numbers of items

4.2.3 Coefficient of Variation

The coefficient of variation is the ratio of standard deviation to the mean for a given sample used to measure spread. It can also be thought of as the measure of relative risk. The larger the coefficient of variation, the greater the risk relative to the average. Mathematically,

$$CV = \frac{s}{\overline{X}}$$

Where,

CV = Coefficient of variation,

s = Standard deviation, and,

$\overline{X}$ = Arithmetic average

4.2.4 Least Square Liner Trend Analysis

Trend analysis has been a very useful and commonly applied statistical tool to forecast the future events in quantitative terms. On the basis of tendencies in the dependent variables in the past periods, the future trend is predicted. This analysis takes the historical data as the basis of forecasting. This method of forecasting the future trend is based on the assumptions that the past tendencies of the variable are repeated in the future or the past events affect the future events significantly. Under this topic, trend of loan and advances total deposit, total investment, current ratio, net profit and cash reserve ratio etc will be studied.

The future trend is forecasted by using the following formula:

$Y_c = a + bx$

Where,

Y_c = the dependent variable

a = the origin i. e. arithmetic mean

b = the slope coefficient i. e. rate of change

X= the independent variable

4.2.4.1 Trend Analysis of Loans and Advances

Under this topic an attempt has been made to analyze the trend of short loans, advances and bills purchased of sampled banks with comparative under five years study period

and project the trend value for next two years. The following table describes the trend value of loans, advances and bills purchased of sampled banks for seven years.

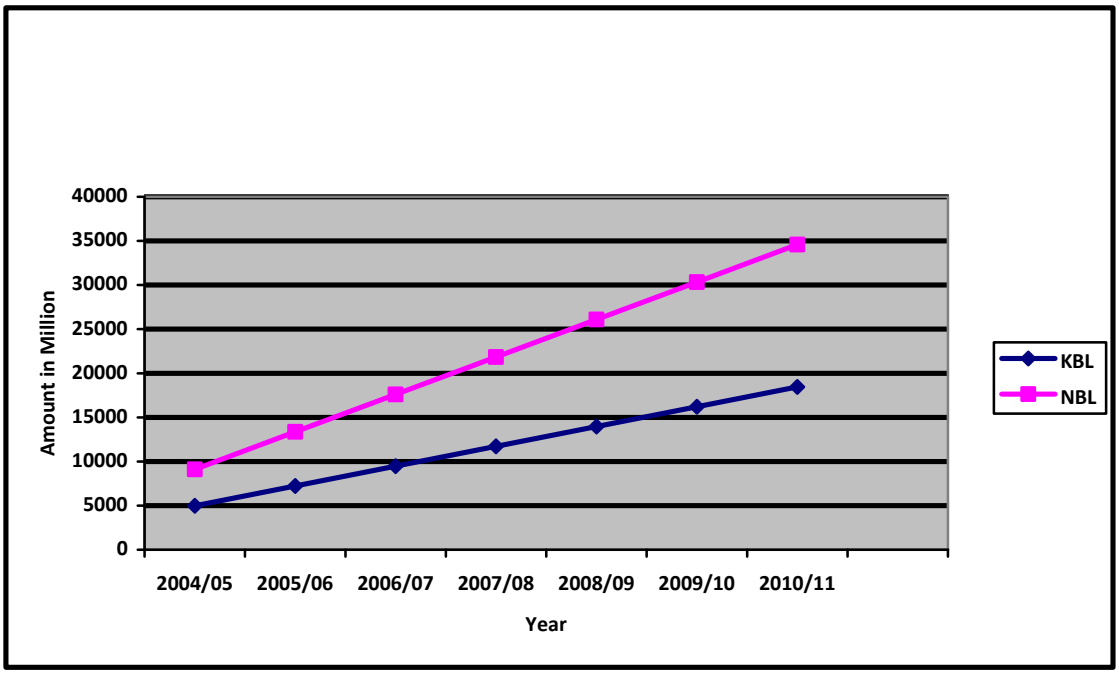
Table 4.17
Comparative Trend Analysis of Loans and Advances (in Million)

Year	**Banks**	
	KBL	**NBL**
2004/05	4978	9110.4
2005/06	7222.9	13355.2
2006/07	9467.8	17600
2007/08	11712.7	21844.8
2008/09	13957.6	26089.6
2009/10	16202.5	30334.4
2010/11	18447.4	34579.2
Mean (a)	**9467.8**	**17600**
Rate of Change (b)	**2244.9**	**4244.8**
Trend Equation (Y)	**9467.8+2244.9X**	**17600+4244.8X**

Source Appendix – I-A

From the table 4.14, it has been found that the loans advances and bills purchased of sampled banks are in increasing trend. The rate of change of NBL is higher than KBL . If other things remaining the same the expected total investment of KBL and NBL will be 18447.4 and 34579.2 respectively in the year 2010/11. Trend line of loan and advances and bills purchased of sampled banks are shown as follows.

Figure 4.17
Trend Analysis of loans and advances



Source: Table 4.17

4.2.4.2 Trend Analysis of Total Deposit

Under this topic, an effort has been made to calculate the trend value of total deposit of KBL and NBL, with comparatively under five years study period and project the trend for next two years.

The following table describes the trend values of total deposit of sampled banks for seven years.

Table: 4.18

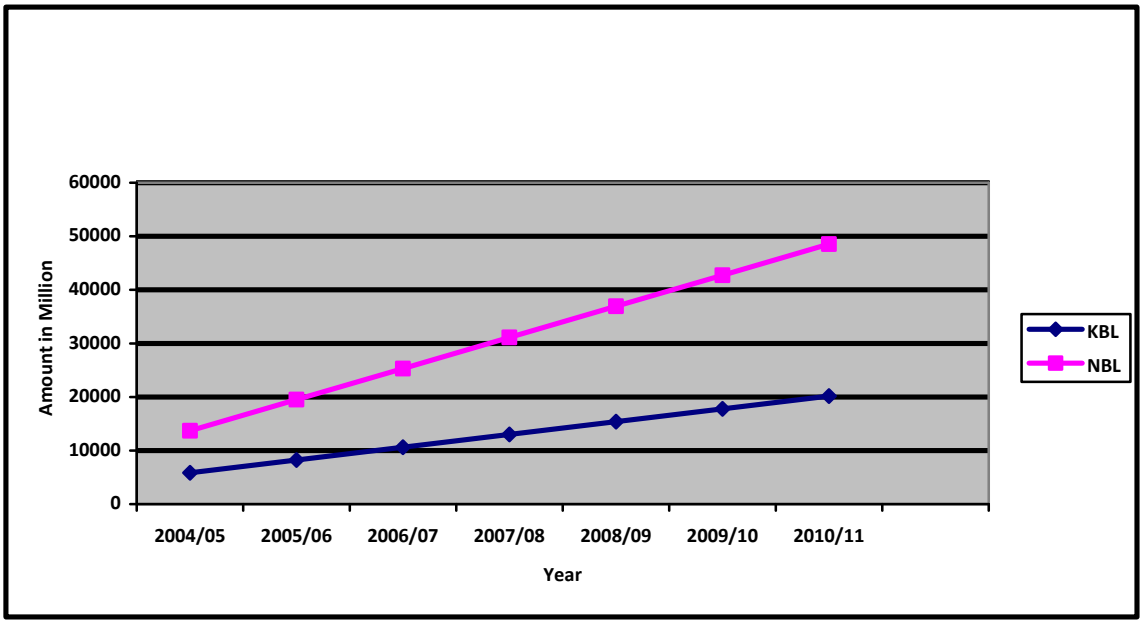
Comparative Trend Analysis of Total Deposit (in Million)

	Banks	
Year	**KBL**	**NBL**
2004/05	5838.2	13689.8
2005/06	8227.1	19498.8
2006/07	10616	25307.8
2007/08	13004.9	31116.8
2008/09	15393.8	36925.8
2009/10	17782.7	42734.8
2010/11	20171.6	48543.8
Mean(a)	**10616**	**25307.8**
Rate of Change (b)	**2388.9**	**5809**
Trend Equation (Y)	**10616+2388.9X**	**25307.8+5809X**

Source Appendix – I-B

The above table shows that the trend line of total deposit is in increasing trend in all sampled banks. Comparatively the slope of equation of NBL is high and its trend line is sloping upward rapidly .If other things remaining the same, the amount of Total Deposit of KBL and NBL will be 20171.6, and 48543.8 respectively in the year 2010/11. Trend line of Total Deposit of sampled banks is presented below.

Figure: 4.18
Comparative Trend Analysis of Total Deposit



Source: Table 4.18

4.2.4.3 Trend Analysis of Total Investment

Under this topic, an effort has been made to calculate the trend value of total Investment of KBL and NBL with comparative under five years study period and project the trend for next two years. The following table describes the trend values of Total Investment of sampled bank for seven years.

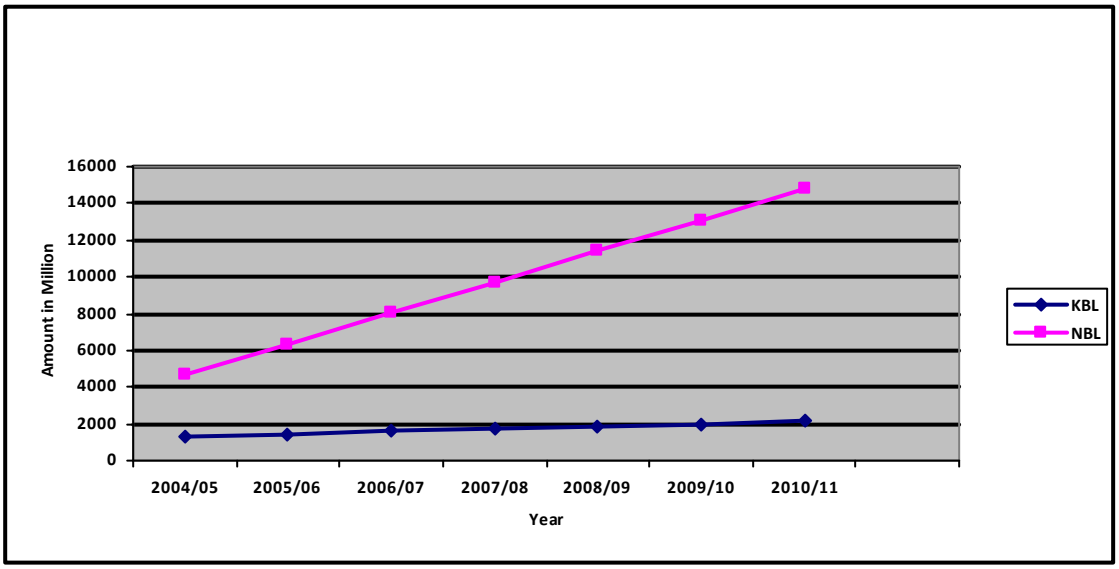
Table: 4.19
Comparative Trend Analysis of Total Investment (in Million)

Year	**Banks**	
	KBL	**NBL**
2004/05	1305.2	4661
2005/06	1443.6	6347.1
2006/07	1582	8033.2
2007/08	1720.4	9719.3
2008/09	1858.8	11405.4
2009/10	1997.2	13091.5
2010/11	2135.6	14777.6
Mean(a)	**1582**	**8033.2**
Rate of Change (b)	**138.4**	**1686.1**
Trend Equation (Y)	**1582+138.4X**	**8033.2+1686.1**

Source Appendix – I-C

From the above comparative table, it has been found that the total investments of sampled banks are in increasing trend. The slope of equation of NBL is high and its trend line is upward sloping than KBL respectively If other things remaining the same the expected total investment of KBL, and NBL will be 2135.6, and 14777.6 respectively in the year 2010/11. Trend lines of total investment of sampled banks are shown below.

Figure: 4.19
Comparative Trend Analysis of Total Investment



Source: Table 4.19

4.2.4.4 Trend Analysis of Current Ratio

Under this topic an attempt has been made to analyze the trend of Current Ratio of sampled banks with comparative under five years study period and project the trend value for next two years. The following table describes the trend value of Current Ratio of sampled banks for seven years.

Table: 4.20
Comparative Trend Analysis of Current Ratio

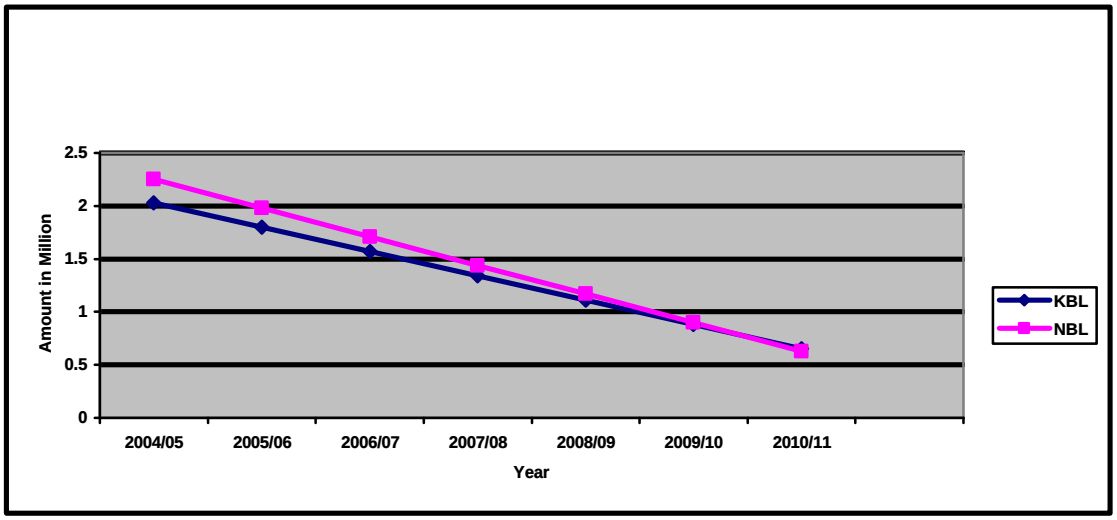
Year	**Banks**	
	KBL	**NBL**
2004/05	2.03	2.25
2005/06	1.8	1.98
2006/07	1.57	1.71
2007/08	1.34	1.44
2008/09	1.11	1.17
2009/10	0.88	0.9
2010/11	0.65	0.63
Mean(a)	**1.57**	**1.71**
Rate of Change (b)	**-0.23**	**-0.27**
Trend Equation (Y)	**Y1=1.57-0.23X**	**Y2=1.71-0.27X**

Source Appendix – I-D

From the table, it has been found that Current Ratios of sampled banks are in decreasing trend. The rate of change of KBL is higher, (i.e.0.23), than NBL (i.e.0.27) respectively.

If other things remaining the same the expected Current Ratio of KBL and NBL will be 0.65, and 0.63 respectively in the year 2010/11.Trend line of Current Ratio of sampled banks are shown as follows.

Figure: 4.20
Trend Analysis of Current Ratio



Source: Table 4.20

4.2.4.5 Trend Analysis of Net profit

Under this topic an attempt has been made to analyze the trend of Net Profit of sampled banks with comparative under five years study period and project the trend value for next two years. The following table describes the trend value of Net profit of sampled banks for seven years.

Table 4.21
Comparative Trend Analysis of Net profit

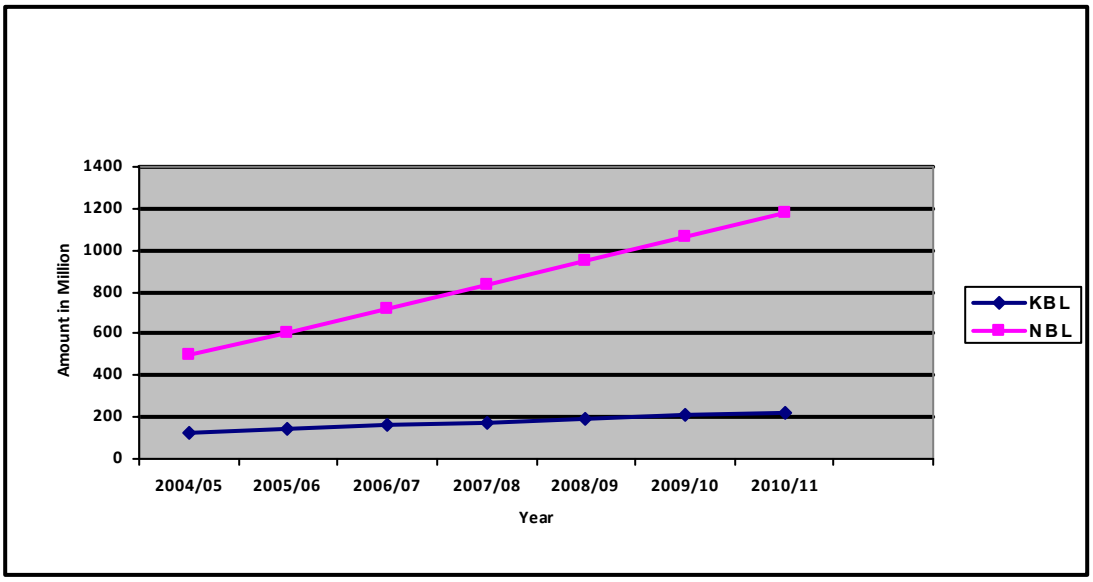
Year	**Banks**	
	KBL	**NBL**
2004/05	126	494.3
2005/06	142.4	607.9
2006/07	158.8	721.5
2007/08	175.2	835.1
2008/09	191.6	948.7
2009/10	208	1062.3
2010/11	**224.4**	**1175.9**
Mean(a)	**158.8**	**721.5**
Rate of Change (b)	**16.4**	**113.6**
Trend Equation (Y)	**Y1=158.8+16.4X**	**Y2=721.5+113.6X**

Source- Appendix I-E

From the above comparative table, it has been found that the Net profits of sampled banks are in increasing trend. The slope of equation of NBL is high and its trend line is upward sloping than KBL. If other things remaining the same the expected Net profit of

KBL and NBL will be 224.4 and 1175.9 respectively in the year 2010/11. Trend lines of Net profit of sampled banks are shown below.

Figure 4.21
Comparative Trend Analysis of Net profit



Source: Table 4.21

4.2.4.6 Trend Analysis of CRR Ratio

Under this topic an attempt has been made to analyze the trend of CRR Ratio of sampled banks with comparative under five years study period and project the trend value for next two years. The following table describes the trend value of CRR Ratio of sampled banks for seven years.

Table 4.22
Comparative Trend Analysis of CRR Ratio

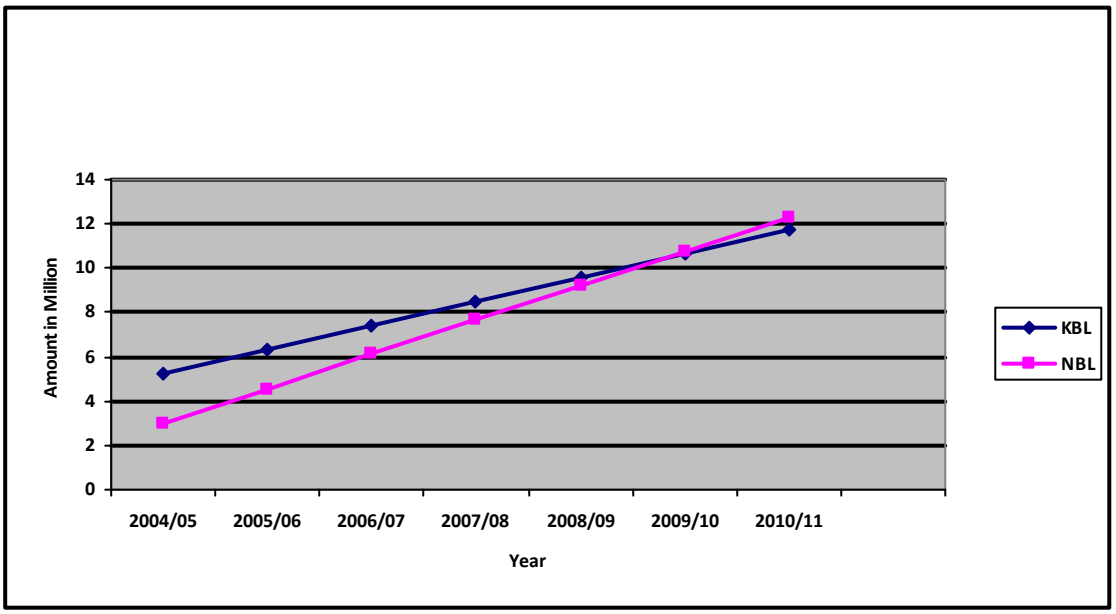
Year	**Banks**	
	KBL	**NBL**
2004/05	5.24	3
2005/06	6.32	4.55
2006/07	7.4	6.1
2007/08	8.48	7.65
2008/09	9.56	9.2
2009/10	10.64	10.75
2010/11	11.72	12.3
Mean(a)	**7.4**	**6.1**
Rate of Change (b)	**1.08**	**1.55**
Trend Equation (Y)	**7.4+1.08X**	**6.1+1.55X**

Source- Appendix I-F

From the table, it has been found that CRR Ratios of both banks are increasing trend. The rate of change of NBL is upward sloping and the ratio is lower than KBL. If other things remaining the same the expected Ratio of KBL and NBL will be 11.72 and 12.3

respectively in the year 2010/11. Trend lines of CRR Ratio of sampled banks are shown as follows.

Figure 4.22
Comparative Trend Analysis of CRR Ratio



Source: Table 4.22

4.2.5 Coefficient of Correlation Analysis

Karl Pearson's co-efficient of correlation is the most commonly used measure of the relationship between two or more two variable. The value of co-efficient of correlation denoted by 'r' and it always lies between +1 and -1. + 1 indicate that there is perfectively positively correlated and -1 indicate perfectively negative correlated. The significant of coefficient of correlation (r) is tested with the help of probable error of r (i.e. P.E). If coefficient of correlation r is less than probable error P.E., it is insignificant. So, perhaps there is no evidence of correlation. If coefficient of correlation r is greater than six times of probable error P.E.(r), it is significant and the other cases, nothing can be concluded.

4.2.5.1 Relationship between Deposit and Investment

Coefficient of correlation measures the degree of relationship between other two variables, deposit and total investment. Deposit is independent variable (X) and total investment is dependent variable (y). The purpose of computing it is to find out whether deposit is significantly used is investment or not.

Table 4.23
Correlation between Deposit and Total Investment

Banks	**KBL**	**NBL**
r	0.56	0.95
r2	0.31	0.90
P.E(r)	0.20	0.03
6 P.E.(r)	1.25	0.18

Source: Appendix II- A

From the Table, the values of coefficient of correlation(r) of KBL and NBL are 0.56 and 0.95 respectively which shows that there is a closer positive correlation between Deposit and Total Investment, therefore the value of coefficient of determination (r2) is 0.31 and 0.90 which shows that 31% and 90% of the total variation in dependent variable (Investment) is explained by independent variable (Deposit).

The coefficient of correlation 'r' of KBL is less than six times of probable error P.E.(r) (i.e. 0.56<1.25), therefore it reveals that the relationship between Deposit and Total Investment is insignificant. If P.E. (r) <r<6P.E. (r), then we can not draw any conclusion. The coefficient of correlation 'r' of NBL is greater than six times of probable error P.E.(r) i.e. 0.95> 0.18. Therefore it reveals that the relationship between Deposit and Total Investment is significant.

4.2.5.2 Relationship between Deposit and Loan and Advances

It measures the intensity or magnitudes or degree of relationship between the two variables, Deposit and Loans and Advances. In the analysis deposit is independent variable(x) and loan and advances is dependent variable (y). The purpose of computing coefficient of correlation(r) between the two variables is to justify whether deposit is significantly used as loan and advances or not.

Table 4.24

Correlation between Deposit and Loan and Advances

Banks	KBL	NBL
r	0.98	0.99
r2	0.96	0.98
P.E(r)	0.01	0.00
6 P.E.(r)	0.07	0.036

Source: Appendix II-B

From the Table-4, the values of coefficient of correlation(r) of KBL and NBL are 0.98 and 0.99 respectively or closer to +1 which shows that there is high degree of positive correlation between Deposit and Loan and Advances.

The coefficient of correlation 'r' of KBL is More than six times of probable error P.E. (r) (i.e. 0.98>0.07), therefore it reveals that the relationship between Deposit and Loan and advances is significant. The coefficient of correlation 'r' of NBL is greater than six times of probable error P.E.(r) (i.e. 0.99> 0.036), therefore it reveals that the relationship between Deposit and Loan and Advances is significant.

4.2.5.3 Relationship between Current Assets and Current Liabilities

It measures the degree of relationship between the two variables, Current Assets and Current Liabilities. In the analysis Current Liabilities is independent variable(x) and Current Asset is dependent variable (y). The purpose of computing coefficient of Correlation (r) between the two variables is to justify whether Current asset is significantly maintained for Current Liabilities or not.

Table 4.25

Correlation between Current Assets and Current Liabilities

Banks	KBL	NBL
r	0.99	0.97
r2	0.98	0.95
P.E(r)	0.60	0.01
6 P.E.(r)	0.05	0.09

Source: Appendix II-C

The values of coefficient of correlation(r) of KBL, and NBL are 0.99 and 0.97 respectively which shows that there are highly positive correlation between current liability and current asset. The coefficient of correlation r of KBL and NBL is greater than six times of probable error P.E.(r) i.e. 0.99 > 0.05, 0.97 > 0.09 therefore it reveals that the relationship between current asset and current liabilities is significant.

4.2.6 Liquidity Profile Analysis

Liquidity profile analysis is a financial cum banking tool, which is very useful to measure liquidity position of commercial banks properly. It is a scientific concept in the banking sector and newly introduced in Nepal. Under Directive No.5, Nepal Rastra Bank has prescribed this tool to measure the liquidity position of commercial banks it is found that this tool has been adopted from 2002 and most of the banks have followed this tool.

In the following section, an attempt has been made to analyze the liquidity position of sampled commercial banks by matching assets and liability based on the maturity period.

The individual analyses of liquidity profile of sampled banks are presented below.

4.2.6.1 Liquidity Profile Analysis of KBL

Table 4.26
Liquidity Profile Analysis of KBL

(Rs. in million)

Year		0-90 days	91-180 days	181-270 days	271-365 days	Above one years	Total
2004/05	Net Asset	(256)	(292)	1080	1143	(872)	803
	Cum NA	(256)	(548)	532	1675	803	803
2005/06	Net Asset	(270)	584	(512)	1412	(393)	911
	Cum NA	(270)	314	(198)	1214	821	821
2006/7	Net Asset	2237	(643)	122	1022	(1776)	962
	Cum NA	2237	1594	1716	2739	962	962
2007/8	Net Asset	3195	1071	203	1238	(3331)	2377
	Cum NA	3195	4266	4470	5708	2377	2377
2008/09	Net Asset	5452	420	139	(1781)	(2141)	2089
	Cum NA	5452	5872	6011	4230	2089	-

Source: Annual Reports of KBL from FY 2004/05 to 2008/09

From the table, it shows that the KBL is positive in liquidity profile based on different maturity period in the year 2004/5 to 2008/09. This indicates that the asset is excess over liability in cumulative figure in the year end. The cumulative figure in FY 2004/5 and 2005/06 for the period 0-90 day to 181-270 days in negative but at the period end it is in positive figure. The cumulative net asset of FY 2004/5 to 2008/09 is 803,821,962 2377 and 2089 respectively. This figure shows the strong liquidity position but may impact in profitability of the overall company.

4.2.6.2 Liquidity Profile Analysis of NBL

Table 4.27
Liquidity Profile Analysis of NBL

(Rs. in million)

Year		0-90 days	91-180 days	181-270 days	271-365 days	Above one years	Total
2004/05	Net Asset	1896	662	336	1679	(4573)	-
	Cum NA	1896	2588	2894	4573	-	-
2005/06	Net Asset	3929	227	(148)	3188	(7196)	-
	Cum NA	3929	4156	4008	7196	-	-
2006/7	Net Asset	413	592	1977	4714	(7696)	-
	Cum NA	413	1005	2982	7696	-	-
2007/8	Net Asset	3853	(1253)	421	2177	(5,198)	-
	Cum NA	3853	2600	3021	5198	-	-
2008/09	Net Asset	116	1707	(88)	1133	(2868)	-
	Cum NA	116	1823	1735	2868	-	-

Source: Annual Reports of NBL from FY 2004/05 to 2008/09

From the table, it is seen the fact that the cumulative liquidity position of NABIL Bank is strong for the period up to 365 days but above one year it has negative net assets. In the FY 2004/05 to 2008/09, cumulative net assets up to the period 365 days, there is 4573, 7196, 7696, 5198 and 2868 respectively but above one year there is negative net asset by the same amount matching the asset and liability same at the year end. NBL has not maintained asset and liability on period basis.

By the above individual analysis the comparative result is drawn out that the KBL is in proper liquidity position of maturity matching between assets and liabilities with positive cumulative net assets but NBL has maintained positive net assets in short period up to one year but negative in above one year matching the overall asset and liability.. Comparatively the liquidity position of KBL is strong than NBL.

4.2.6.3 Total of Cash and Near Cash Items

Cash and near about cash items includes cash balance, cash balance in NRB, cash balance in other financial institution, money call at short notice and short term investments.

Table 4.28

Cash and Near about Cash

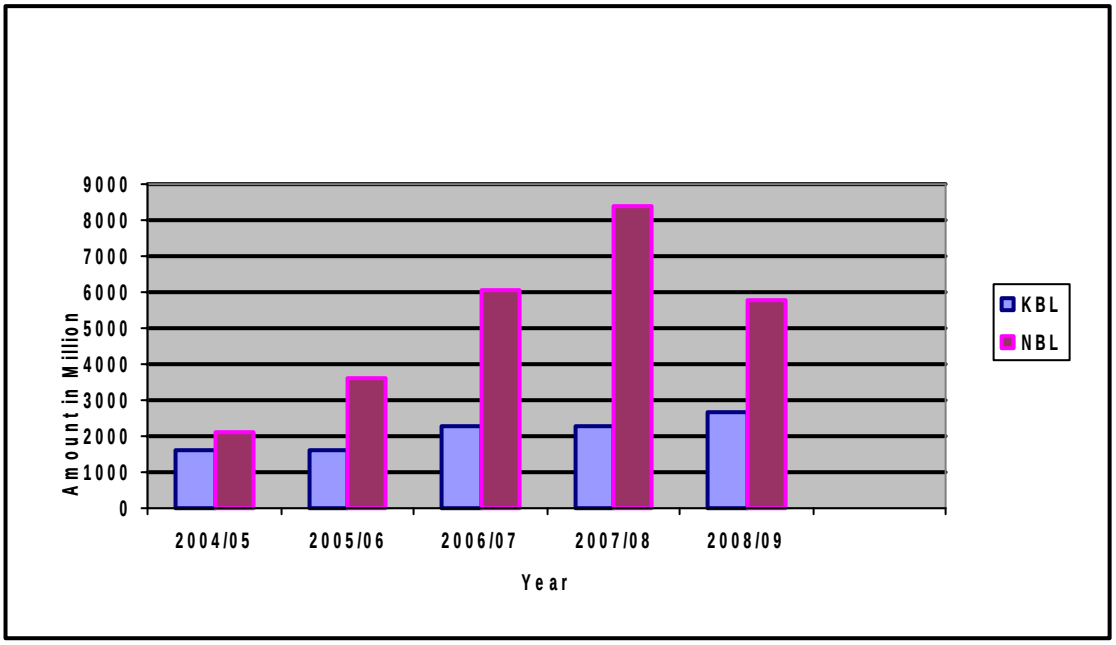
	Rs. in Million	
F.Y.	**Total**	
	KBL	**NBL**
2004/05	1594	2092
2005/06	1590	3587
2006/07	2287	6049
2007/08	2267	8410
2008/09	2689	5763

Source: Annual Reports of KBL& NBL from 2004/05 to 2008/09

From the table, it is seen the summation of Cash and near about cash items of both KBL and NBL are in increasing trend. Which shows both banks have sufficient liquidity to meet day to day banking operations.

Above figure of both banks is comparatively presented in the following chart.

Figure 4.23
Cash and Near Cash Items



Source: Table 4.28

Major findings of the study

As per the nature of the data the empirical findings of the study can be categorized in four parts and explained as follows:

During the study, all the secondary data has been analyzed by using financial as well as statistical tools. This topic focused on the major findings from the secondary data analysis. Which are derived from the analysis of liquidity management of two commercial banks named KBL and NBL with comparatively applying five years data from FY 2004/05 to 2008/09. The major findings of the study drawn from the analysis of secondary data of sampled banks are given below.

Findings from Ratio Analysis

a. Cash and bank balance to current deposit ratio of KBL is high and NBL are significantly low. This implies that the liquidity position of KBL is strong NBL are in moderate. Cash and bank balance to total deposit ratio was calculated by dividing cash and bank balance by total deposits: The mean ratio of KBL was 6.35% which was greater than that of NBL which was 6.09%. Cash and bank balance to total deposit ratio of both banks were in fluctuating trend. Likewise NBL utilized the fund raised from the total deposits that may ultimately affect the profitability adversely.

b. The ratio of current asset and current liability of both banks could not maintain the conventional standard of 2:1. The average ratio of NBL was greater than that of KBL, which signified that NBL was more capable of meeting immediate liabilities in compare to KBL.

c. In general, Fixed Deposit to Total Deposit Ratio seems likely to equal in FY 2002/03. After then KBL's ratio rapidly decreased and increased where NBL's ratio slowly decreased and increased.

d. In general, Saving Deposit To Total Deposit Ratio seems likely to equal in FY 2006/07. S.D. of KBL is greater than NBL i.e. 7.02 > 4.22. It indicates that KBL has higher fluctuation or higher risk on this ratio comparing with NBL. Mean of saving Deposits to Total Deposit of NBL is greater than that of KBL

e. Return on shareholder's equity ratio measures the return on shareholder's investment in the bank. The average ratio of NBL for the return on shareholders equity was higher than that of KBL. Likewise the CV of KBL was higher. The ratios of both banks were in fluctuating trend through out the study period.

f. Return on Working capital of both banks are increasing trend. Return on working capital was considerably higher in NBL, which signifies that NBL was more successful to utilize the working capital for making profit.

g. Return on total deposit ratios were in fluctuating trend in both banks. The average ratio of KBL was lower than that of NBL.

h. Loans and advances to total deposits ratios of KBL and NBL were in fluctuating trend . Loan and advance to total deposit ratio appeared significantly higher in KBL. It indicates the better utilization of total deposits in KBL than in NBL.. The mean loan and advance to fixed deposit ratio appeared higher in NBL, which indicates that turnover of fixed deposits in form of loan, and advance was better in NBL. The mean loan and advance to saving deposit ratio found higher in KBL, which indicates that turnover of saving deposits in form of loan and advance, was better in KBL. Similarly Loans and advances to saving deposit ratio were in fluctuating trend in both banks. The ratio of KBL was highest in FY 2004/05 i.e. 368.97%.

i. Investment to total deposit ratios of NBL as well as KBL were in fluctuating trend. As depicted by higher investment to total deposits ratio in NBL, it seems more successful to utilize the depositor's fund in investment. The investment position of KBL is lower than NBL. NBL is satisfactory level.

j. Cash and bank balance to current assets ratios of KBL is increasing and NBL is fluctuating trend. The average ratio of NBL was higher than that of KBL, which tells that NBL had more liquidity of cash than that of SBL.

k. NRB balance to Total Deposit Ratio of NBL has the higher mean ratio. It means that liquidity position of NBL regarding with this ratio is better than that of KBL during the study period.

l. CRR are in increasing trend in KBL and fluctuating trend in NBL. The average CRR of each bank is more than the standard set by NRB i.e. 5.5%.This shows that each bank has tied up their fund in excess deposit in NRB.

Findings from Trend Analysis

a. The total deposit of all banks is in increasing trend. The rate of change of NBL is high and its trend is heading upward rapidly and KBL is heading upward slowly. Thus, it is depicted that the NBL is collecting more deposit than KBL.

b. The investments of all banks are also in increasing trend. However the slope of Investment is low in comparison of Total Deposit. NBL has also high slope in Investment which implies deposit money is utilizing and increasing liquidity position.
c. The loans and advances of all banks are in increasing trend. The rate of change of NBL is high and KBL is also in good position. The trend line of NBL is sloping relatively steady during the study period. The trend of loans and advances are moving in relation to total deposit trend.
d. The current ratio of all banks are in decreasing trend .The rate of change of KBL is high.
e. The net profit of both banks is in increasing trend. The slope of equation of NBL is high and its trend line is upward sloping than KBL.
f. The CRR ratio of both banks are in increasing trend. The rate of change of NBL is upward sloping and the ratio is lower than KBL.

Findings from Coefficient of Correlation

a. The coefficient of correlation between deposit and total investment of NBL is highly correlated NBL's coefficient of determination defines that 90% of the total variation in dependent variable (Investment) is explained by independent variable (Deposit) respectively and is significant. is The coefficient of correlation 'r' of KBL is lower than six times of probable error P.E.(r) i.e. 0.56< 1.25. Therefore it reveals that the relationship between Deposit and Total Investment is insignificant.

b. The coefficient of correlation between deposit and loans and advance of KBL and NBL are highly correlated. The coefficient of determination of KBL and NBL defines that 96% and 98% dependent variable (loans and advances) is explained by independent variable (Deposit) respectively. The coefficient of correlation 'r' of KBL and NBL is greater than six times of probable error. Therefore it reveals that the relationship between Deposit and Loan and Advance is significant.

c. The coefficient of correlation between current assets and current liability of all banks are highly correlated and KBL and NBL's coefficient of determination defines that 98% and 95% of the total variation in dependent variable (current assets) is explained by independent variable (current liabilities) respectively and is significant

Findings from Liquidity Profile Analysis

a. NBL is facing maturity mismatching management problem but normal in liquidity position. It has also excess assets over liability in short period and manages maturity matching of assets and liabilities in over the one year period.

b. KBL has excess assets over liability in short period and manages maturity matching of assets and liabilities in long period.

CHAPTER –V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter, summary and conclusion of the research as well as recommendations are presented separately. After summarizing and concluding the research, recommendations are suggested for the effective liquidity Management of Nepalese Commercial Banks. The researcher has tried to give suggestions and recommendations to the commercial banks based on this research.

5.2 Summary

Basically, the entire research work has focused on the comparative study on liquidity management in Nepalese commercial banks. For the study, two commercial banks (i.e. KBL and NBL) are taken as sampled and analyzed their liquidity management practice by taking five years secondary data from FY 2004/05 to 2008/09. Since the capital structure and transaction of KBL is lower than NBL. The objective of the study is to find out and analyze the liquidity management practice in Nepalese Commercial banks.

To fulfill the research objectives the study is divided into five chapters.

In the first chapter, brief introduction of liquidity management, brief introduction of the sampled banks, statement of the problem, focus of the study, significance or importance of the study, research objective of the study, limitation of the study and organization of the study are included.

In the second chapter, theoretical review has been made. Different theories, policies, rules and regulations about liquidity management are reviewed. During the study different books, journals, previous studies, websites, reports are viewed and visited to different experts to know the liquidity management. During the literature review, it is found that there is a few research have been made on this topic.

In the third chapter, Research design, population and sample and analysis tools are included The data are collected from secondary source for the study. The secondary data are collected from annual papers of sampled banks, and Nepal Rastra Bank. After collecting the data from different source, it is analyzed by using financial and statistical tools and techniques.

An attempt has been made to fulfill the objectives of the research work in chapter four. In this chapter all the secondary data are compiled, processed and tabulated as per the necessity and figures; diagrams are also used to present it clearly. It also includes major findings.

In the chapter five, the summary, conclusion and recommendations are included. The summary of the study, conclusion drawn from the study are presented and necessary suggestions are given to the concern authorities, sampled banks as well as Nepalese commercial banks for the betterment of liquidity management.

This study stands from different limitations. it considers two banks for the sampled of total commercial banks in Nepal. Time and resources are the constraints of the study. Therefore, the study may not be generalized in all cases and accuracy depends upon the data collected and provided by the organizations.

5.3 Conclusions

Liquidity management can overall describe the security management of the cash balance in a systematic and scientific way. Liquidity is that part of the total assets, which can be paid immediately to meet the current obligation. The liquidity management is used to describe money and assets that are readily convertible into cash with in very short span of time. The liquidity of assets refers to the ease and certainty with which it can be turned into cash. Bank maintain liquidity in the form of cash and bank balance, placement of money at call or short notice and investment in government securities and other securities readily convertible into cash. It is such a large proportion of deposit payable on demand. Inadequate liquidity tarnishes the image of the organization while excess liquidity is unfavorable to the profitability.

In conclusion, it can be said that Liquidity management is one of the most important parts of every financial institution. Liquidity is the most sensible and crucial aspect of the bank, which is often compared to lifeblood of the human being. Lack of adequate liquidity is often one of the first signs that a bank is in serious financial trouble and lead to the loss of public faith upon banks. Thus, ensuring adequate liquidity is a never-ending problem for the bank management that will always have significant implications for the bank's profitability.

Liquidity position of NBL is stronger than that of KBL, which shows NBL had readiness to serve its customers more efficiently in comparison with KBL for the

purpose of meeting current liabilities. Although higher liquidity means lower risk as well as lower profit but higher liquidity is not always the cause of lower profitability.

As per the standard prescribed by NRB, the CRR should be 5.5%. During the study, it is found that both banks have maintained the CRR above 5.5%. So, based on the CRR, both banks are in strong liquidity position.

From the analysis Current Ratio, it is found that all the sampled banks has maintained considerably sufficient to meet the obligation of current liabilities which is just below than 2:1.

Net profit to total deposit ratio was significantly higher in NBL, which indicates that NBL is more successful to utilize deposit for making profit.

As portrayed by higher investment to total deposits ratio in NBL, it seems more successful to utilize the depositor's fund in investment than in KBL.

Average return on total assets ratio of NBL was much higher than in KBL. It implies that the profitability position of NBL in the study period proved to be enough stronger as compared with KBL.

Return on working capital was considerably higher in NBL, which signifies that NBL was more successful to utilize the working capital for making profit.

Average return on shareholders equity ratio of NBL found to be greater than KBL because of the lower net profit of KBL.

Holding high level of cash and bank balance seems satisfactory from the viewpoint of profit making organization. KBLwas found good in matter of creating credit to earn fixed rate of return. NBL was also found taking high-risk strategy as it had employed higher proportion of outsiders fund in its capital structure. NBL was more efficient to utilize its resources in profitable sector than that of KBL. The utilization ratios of both banks found satisfactory. However NBL was seen more efficient to utilize its assets in profit generating areas as compared to KBL.

From the trend analysis, it is found that total deposit, investments and loans and advances of all banks are in increasing trend. It implies that all the banks are increasing their effectiveness in deposit collecting and investing them by maintaining the liquidity position. Current ratio is in decreasing trend.

The coefficient of Correlation shows the relationship between Investment and Deposit, Lloans & advance to Deposit and Current Assets to Current Liability is significant in NBL. But KBL's Deposit and Investment is insignificant.

Commercial banks have been adopted a banking tool called liquidity profile from 2002. From the analysis of liquidity profile, it is found that KBL is in strong liquidity position having surplus asset over liability over the period matching properly. NBL is also matching its net assets over the long period.

From this study, it is found that liquidity management practice is still in developing phase. Most of the banks have maintained liquid fund to fulfill the statutory provision only. Since, NRB has to threat to commercial banks to maintain liquidity, it is observed that the commercial banks are found less sincere to liquidity management. Commercial banks have maintained liquidity measuring tools like liquidity profile analysis by force, not willingly. From this condition, it is exposed that the commercial banks are not taking it easily but they are feeling it as a saddle. It should be taken positively and implemented compulsorily by commercial banks for the betterment of liquidity management, banks credibility and safety for depositor's amount.

5.4 Recommendations

Suggestion is the yield of the whole study. It helps to take corrective action in their activities in future. Different analyses are done to arrive at this step.

After completing the research entitled “Liquidity Management of Commercial banks” and presenting, analyzing, concluding the data and related topics, some recommendations are presented below.

To NBL and KBL

Both banks have very low liquidity position because the current ratios are below the standard. Both banks cannot pay short-term liability at the time of its creditor’s demand. It may create difficult situation in future. So, both banks should keep sufficient level of current assets to maintain its liquidity position.

The investment positions of KBL and NBL, out of its total deposit are not satisfactory because the investment to total deposit ratio are too much low. The study shows minimums of total deposits are used for investment. So, it is recommended that both banks should have to give priority to invest in profitable investment opportunity than providing maximum unsecured loan.

Both banks have provided more loans and advance from it's saving, fixed, and total deposit. So, both banks should review their loan policy and suggested to advance the loans only after the proper analysis of customers.

Government should formulate plans and policies and launch various programs for the growth of development banks focusing on private sector development banks.

To all commercial Banks

Liquidity profile analysis with IRC should be prepared quarterly basis and send to NRB within specified time period.

An effort should be made on human resource development on the risk analysis management and liquidity management.

An effort should be made on the development of market for the liquidity generating assets like; T-bills, Options and Bank CDs etc.

Satisfied employees are the backbone of the bank. So, necessary steps should be step forwarded to develop satisfied and well-trained employees, which may reduce the problems of bank debtors and frauds.

Rules and regulations are the guidelines of things to do or not to do. So, its effects can be seen after the implementations

To Other Researchers

This research may be helpful to fulfill the gap of proper research in liquidity management It may provide the knowledge about liquidity management in Nepalese commercial banks. This research covers the existing liquidity management practice, existing liquidity position and its trend, factors affecting the liquidity management and banking tools for liquidity management only. For the further study and analysis, this study may be the guideline to other researchers.

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Web sites

http://www.kumaribank.com

http://www.nabilbank.com

http://nrb.gov.np

http://wikipedia.org

Appendix – I-A

Calculation of Trend Analysis of Loans and Advances

Banks		**KBL**		**NBL**	
F.Y.	**X**	**Y_1**	**XY_1**	**Y_2**	**XY_2**
2004/05	-2	5590	(11180)	10586	(21172)
2005/06	-1	6892	(6892)	12923	(12923
2006/07	0	8929	-	15546	-
2007/08	1	11335	11335	21365	21365
2008/09	2	14593	29186	55178	55178
Total		**47339**	**22449**	**88009**	**42448**

Source : Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Calculation of intercept of 'y' when X=0

$a_1 = \Sigma Y_1 / n_1$ $a_2 = \Sigma Y_2 / n_2$

=47339/5 =88009/5

=9467.8 **=17600**

Calculation of slope of trend line

$b_1 = \Sigma XY_1 / \Sigma X^2$ $b2 = \Sigma XY_2 / \Sigma X^2$

=22449/10 =42448/10

=2244.9 **=4244.8**

Therefore, The Trend Equations are:

$Y_1 = a_1 + b_1X$ $Y_2 = a_2 + b_2X$

Year	**When X=**	**Y_1=9467.8+2244.9X**	**Y_2=17600+4244.8X**
2004/05	-2	4978	9110.4
2005/06	-1	7222.9	13355.2
2006/07	0	9467.8	17600
2007/08	1	11712.7	21844.8
2008/09	2	13957.6	26089.6
2009/10	3	16202.5	30334.4
2010/11	4	18447.4	34579.2

Appendix – I-B

Calculation of Trend Analysis of Total Deposit

Banks		**KBL**		**NBL**	
F.Y.	**X**	**Y_1**	**XY_1**	**Y_2**	**XY_2**
2004\05	-2	6269	(12538)	14587	(29174)
2005\06	-1	7769	(7769)	19347	(19347)
2006\07	0	10557	-	23342	-
2007\08	1	12774	12774	31915	31915
2008\09	2	15711	31422	37348	74696
Total		**53080**	**23889**	**126539**	**58090**

Source : Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Calculation of intercept of 'y' when X=0

$a_1=\Sigma Y_1/n_1$ $a_2=\Sigma Y_2/n_2$

=53080/5 =126539/5

=10616 **=25307.8**

Calculation of slope of trend line

$b_1=\Sigma XY_1/\Sigma X^2$ $b_2=\Sigma XY_2/\Sigma X^2$

=23889/10 =58090/10

=2388.9 **=5809**

Therefore, The Trend Equations are:

$Y_1=a_1+b_1X$ $Y_2=a_2+b_2X$

Year	**When X=**	**Y_1=10616+2388.9X**	**Y_2=25307.8+5809X**
2004/05	-2	5838.2	13689.8
2005/06	-1	8227.1	19498.8
2006/07	0	10616	25307.8
2007/08	1	13004.9	31116.8
2008/09	2	15393.8	36925.8
2009/10	3	17782.7	42734.8
2010/11	4	20171.6	48543.8

Appendix – I-C

Calculation of Trend Analysis of Total Investment

Banks		KBL		NBL	
F.Y.	X	Y_1	XY_1	Y_2	XY_2
2004/05	-2	1190	(2380)	4276	(8552)
2005/06	-1	1394	(1394)	6179	(6179)
2006/07	0	1678	-	8945	-
2007/08	1	2138	2138	9940	9940
2008/09	2	1510	3020	10826	21652
Total		**7910**	**1384**	**40166**	**16861**

Source : Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Calculation of intercept of 'y' when X=0

$a_1=\Sigma Y_1/n_1$ $a_2=\Sigma Y_2/n_2$

=7910/5 =40166/5

=1582 **=8033.2**

Calculation of slope of trend line

$b_1=\Sigma XY_1/\Sigma X^2$ $b_2=\Sigma XY_2/\Sigma X^2$

=1384/10 =16861/10

=138.4 **=1686.1**

Therefore, The Trend Equations are:

$Y_1=a_1+b_1X$ $Y_2=a_2+b_2X$

Year	When X=	$Y_1=1582+138.4X$	$Y_2=8033.2+1686.1X$
2004/05	-2	1305.2	4661
2005/06	-1	1443.6	6347.1
2006/07	0	1582	8033.2
2007/08	1	1720.4	9719.3
2008/09	2	1858.8	11405.4
2009/10	3	1997.2	13091.5
2010/11	4	2135.6	14777.6

Appendix – I-D

Calculation of Trend Analysis of Current Ratio

Banks		**KBL**		**NBL**	
F.Y.	**X**	**Y_1**	**XY_1**	**Y_2**	**XY_2**
2004/05	-2	2.05	(4.1)	2.08	(4.16)
2005/06	-1	1.71	(1.71)	2.08	(2.08)
2006/07	0	1.63	-	1.83	-
2007/08	1	1.32	1.32	1.35	1.35
2008/09	2	1.12	2.24	1.23	2.24
Total		**7.85**	**(2.25)**	**8.55**	**(2.65)**

Calculation of intercept of 'y' when X=0

$a_1=\Sigma Y_1/n_1$ $a_2=\Sigma Y_2/n_2$

=7.85/5 =8.55/5

=1.57 **=1.71**

Calculation of slope of trend line

$b_1=\Sigma XY_1/\Sigma X^2$ $b_2=\Sigma XY_2/\Sigma X^2$

= -2.25/10 = -2.65/10

=-0.23 **=-0.27**

Therefore, The Trend Equations are:

$Y_1=a_1+b_1X$ $Y_2=a_2+b_2X$

Year	**When X=**	**Y1=1.57-0.23x**	**Y2=1.71-0.27X**
2004/05	-2	2.03	2.25
2005/06	-1	1.8	1.98
2006/07	0	1.57	1.71
2007/08	1	1.34	1.44
2008/09	2	1.11	1.17
2009/10	3	0.88	0.9
2010/11	4	0.65	0.63

Appendix – I-E

Calculation of Trend Analysis of Net profit

Banks		**KBL**		**NBL**	
F.Y.	**X**	**Y1**	**XY1**	**Y2**	**XY2**
2004/05	-2	84	(168)	519	(1038)
2005/06	-1	104	(104)	635	(635)
2006/07	0	170	-	674	-
2007/08	1	175	175	747	747
2008/09	2	261	261	1031	2062
Total		**794**	**164**	**3606**	**1136**

Source : Annual Reports of KBL & NBL from FY 2004/05 to 2008/09

Calculation of intercept of 'y' when X=0

$a_1=\Sigma Y_1/n_1$ $a_2=\Sigma Y_2/n_2$

=794/5 =3606/5

=158.8 **=721.5**

Calculation of slope of trend line

$b_1=\Sigma XY_1/\Sigma X^2$ $b_2=\Sigma XY_2/\Sigma X^2$

=164/10 =1136/10

=16.4 **=113.6**

Therefore, The Trend Equations are:

$Y_1=a_1+b_1X$ $Y_2=a_2+b_2X$

Year	**When X=**	$Y_1=158.8+16.4X$	$Y_2=721.5+113.6X$
2004/05	-2	126	494.3
2005/06	-1	142.4	607.9
2006/07	0	158.8	721.5
2007/08	1	175.2	835.1
2008/09	2	191.6	948.7
2009/10	3	208	1062.3
2010/11	4	224.4	1175.9

Appendix – II-A

Calculation of correlation of Coefficient between Total deposit and total Investment of KBL

FY	Deposit (X)	Investment (Y)	$x = X - \overline{X}$	$y = Y - \overline{Y}$	X^2	Y^2	xy
2004/05	6269	1190	(4347)	(392)	18896409	153664	1704024
2005/06	7769	1394	(2847)	(188)	8105409	35344	535236
2006/07	10557	1678	(59)	96	3481	9216	(5664)
2007/08	12774	2138	2158	556	4656964	309136	1199848
2008/09	15711	1510	5095	(72)	25959025	5184	(366840)
Total	**53080**	**7910**	**-**	**-**	**57621288**	**512544**	**3066604**

Source : Annual Reports of KBL from FY 2004/05 to 2008/09

Calculation of arithmetic mean

$\overline{X}$ **=ΣX/n** $\overline{Y}$ **=ΣY/n**

=53080/5 =7910/5

=Rs.10616 =Rs.1582

Calculation of correlation co-efficient(r)

Where, r = $\frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

$$r = \frac{3066604}{\sqrt{57521288}\ \sqrt{512544}}$$

=0.56

Therefore, the co-efficient of determination r^2 is **0.31**

Calculation of probable error(PE)

Probable Error **(PE) = 0.6745 x** $\frac{1 Z r^2}{\sqrt{n}}$

=0.6745x 0.6745 x $\frac{1 Z 0.31}{\sqrt{5}}$

=0.21

Calculation of correlation of Coefficient between total deposit and total Investment of NBL

FY	Deposit (X)	Investment (Y)	$x = X - \overline{X}$	$y = Y - \overline{Y}$	X^2	Y^2	xy
2004/05	14587	4276	(10720.8)	(3757.2)	114935552.6	14116551.84	40280189.76
2005/06	19347	6179	(5960.8)	(1854.2)	35531136.64	3438057.64	11052515.36
2006/07	23342	8945	(1965.8)	911.80	3864369.64	831379.24	(1792416.44)
2007/08	31915	9940	6607.2	1906.8	43655091.84	3635886.24	12598608.96
2008/09	37348	10826	12040.2	2792.8	144966416	7799731.84	33625870.56
Total	**126539**	**40166**	**-**	**-**	**342952566.7**	**29821606.8**	**95764768.2**

Source : Annual Reports of NBL from FY 2004/05 to 2008/09

Calculation of arithmetic mean

$\overline{X}$ **=ΣX/n** $\overline{Y}$ **=ΣY/n**

=126539/5 =40166/5

=Rs.25307.8 =Rs.8033.2

Calculation of correlation co-efficient(r)

Where, r = $\frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

$$r = \frac{95764768.2}{\sqrt{342952566.7}\sqrt{29821606.8}}$$

=0.95

Therefore, the co-efficient of determination r^2 is **0.90**

Calculation of probable error(PE)

Probable Error **(PE) = 0.6745 x** $\frac{1Zr^2}{\sqrt{n}}$

=0.6745x 0.6745 x $\frac{1Z.90}{\sqrt{5}}$

=0.30

Appendix – II-B

Calculation of correlation of Coefficient between total deposit and Loan and Advances of KBL

FY	Deposit (X)	Loan and Advances (Y)	$x = X - \overline{X}$	$y = Y - \overline{Y}$	X^2	Y^2	xy
2004/05	6269	5590	(4347)	(3877.8)	18896409	15037332.84	16856796.6
2005/06	7769	6892	(2847)	(2575.8)	8105409	6634745.64	7333302.6
2006/07	10557	8929	(59)	(538.8)	3481	290305.44	31789.2
2007/08	12774	11335	2158	1867.2	4656964	3486435.84	4029417.6
2008/09	15711	14593	5095	5125.2	25959025	26267675.04	26112894
Total	**53080**	**47339**	**-**	**-**	**57621288**	**51716494.8**	**54364200**

Source : Annual Reports of KBL from FY 2004/05 to 2008/09

Calculation of arithmetic mean

$\overline{X}$ **=ΣX/n** $\overline{Y}$ **=ΣY/n**

=53080/5 =47339/5

=Rs.10616 =Rs.9467.8

Where, r = $\frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

$$r = \frac{54364200}{\sqrt{57621288}\sqrt{51716494.8}}$$

r =0.98

Therefore, the co-efficient of determination r^2 is 0.96

Calculation of probable error(PE)

Probable Error **(PE) = 0.6745 x** $\frac{1Zr^2}{\sqrt{n}}$

=0.6745 x $\frac{1Z.96}{\sqrt{5}}$ = **0.01**

Calculation of correlation of Coefficient between total deposit and Loan and Advances of NBL

FY	Deposit (X)	Loan and Advances	x = X- $\overline{X}$	y = Y- $\overline{Y}$	X^2	Y^2	xy
2004/05	14587	10586	(10720.8)	(7014)	114935552.6	49196196	75195691.2
2005/06	19347	12923	(5960.8)	(4677)	35531136.64	21874329	27878661.6
2006/07	23342	15546	(1965.8)	(2054)	3864369.64	4218916	4037753.2
2007/08	31915	21365	6607.2	3765	43655091.84	14175225	24876108
2008/09	37348	27589	12040.2	9989	144966416	99780121	120269557.8
Total	**126539**	**88009**	**-**	**-**	**342952566.7**	**189244787**	**2522577718**

Annual Reports of NBL from FY 2004/05 to 2008/09

Calculation of arithmetic mean

$\overline{X}$ **=ΣX/n** $\overline{Y}$ **=ΣY/n**

=126539/5 =88009/5

=**Rs.25307.8** =**Rs.17600**

Calculation of correlation co-efficient(r)

Where, r = $\frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

$$r = \frac{252257771.8}{\sqrt{342952566.8}\sqrt{189244784}}$$

=0.99

Therefore, the co-efficient of determination r^2 is **0.98**

Calculation of probable error(PE)

Probable Error **(PE) = 0.6745 x** $\frac{1 Z r^2}{\sqrt{n}}$

$$=0.6745 \text{ x } 0.6745 \text{ x } .\frac{1 Z 0.98}{\sqrt{5}}$$

=0.006

Appendix – II-C

Calculation of correlation of Coefficient between Current Assets and Current Liabilities of KBL

FY	Current Liabilities (X)	Current Asset(Y)	$x = X - \overline{X}$	$y = Y - \overline{Y}$	X^2	Y^2	xy
2004/05	3500	7184	(4564)	(4140.8)	20830096	17146224.64	18898611.2
2005/06	4320	7426	(3744)	(3898.8)	14017536	15200641.44	14597107.2
2006/07	6860	11216	(1204)	(108.8)	1449616	11837.44	130995.2
2007/08	10200	13518	2136	2193.2	4562496	4810126.24	4684675.2
2008/09	15440	17280	7376	5955.2	54405376	35464407.04	43925555.2
Total	**40320**	**56624**	**-**	**-**	**95265120**	**72633236.8**	**82236944**

Source : Annual Reports of KBL from FY 2004/05 to 2008/09

Calculation of arithmetic mean

$\overline{X}$ **=ΣX/n** $\overline{Y}$ **=ΣY/n**

40320/5 =56624/5

=Rs.8064 **=Rs.11324.8**

Calculation of correlation co-efficient(r)

Where, $\mathbf{r} = \frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

$$r = \frac{82236944}{\sqrt{95265120}\sqrt{72633236.8}}$$

=0.99

Therefore, the co-efficient of determination $\mathbf{r^2}$ is **0.98**

Calculation of probable error(PE)

Probable Error **(PE) = 0.6745 x** $\frac{1 Z r^2}{\sqrt{n}}$

$$=0.6745x\ 0.6745\ x\ .\frac{1 Z 0.98}{\sqrt{5}}$$

=0.008

Calculation of correlation of Coefficient between Current Assets and Current Liabilities of NBL

FY	Current Liabilities (X)	Current Asset(Y)	$x = X - \overline{X}$	$y = Y - \overline{Y}$	X^2	Y^2	xy
2004/05	4246	8819	(6860.8)	(8192.2)	47070576.64	67112140	56203673.6
2005/06	6662	13858	(4444.8)	(3153.2)	19756247.04	9942.67024	14015343.36
2006/07	9259	16955	(1847.8)	(56.2)	3414364.84	3158.44	103846.36
2007/08	14923	20121	3816.2	3109.8	14563382.44	9670856.04	11867618.76
2008/09	20444	25303	9337.2	8291.8	87183303.84	68753947.24	77422194.9
Total	**55534**	**85056**	**-**	**-**	**1719878748**	**155482772.8**	**159612677**

Annual Reports of NBL from FY 2004/05 to 2008/09

Calculation of arithmetic mean

$\overline{X}$ **=ΣX/n** $\overline{Y}$ **=ΣY/n**

=55534/5 =85056/5

=Rs.11106.8 **=Rs.17011.2**

Calculation of correlation co-efficient(r)

Where, $r = \frac{xy}{\sqrt{x^2}\sqrt{y^2}}$

$$r = \frac{159612677}{\sqrt{1719878748}\sqrt{155482772.8}}$$

=0.97

Therefore, the co-efficient of determination r^2 is 0.95

Calculation of probable error(PE)

Probable Error **(PE) = 0.6745 x** $\frac{1 Z r^2}{\sqrt{n}}$

=0.6745x 0.6745 x $\frac{1 Z 0.95}{\sqrt{5}}$ =

=0.01