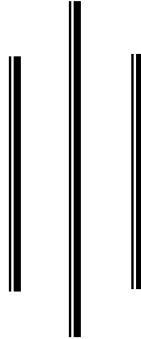


**A COMPARATIVE STUDY ON LIQUIDITY MANAGEMENT  
OF HIMALAYAN BANK LTD AND  
BANK OF KATHMANDU LTD**



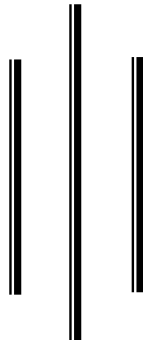
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**Submitted to:**

Office of the Dean

Faculty of Management

Tribhuvan University

In the partial fulfillment of the requirement for the Degree of  
Master of Business Studies (M.B.S)

Kathmandu, Nepal

November, 2011

# RECOMMENDATION

**This is to certify that the Thesis**

**Submitted by:**

**PRABIN LAMA**

**Entitled:**

**A COMPARATIVE STUDY ON LIQUIDITY MANAGEMENT OF  
HIMALAYAN BANK LTD AND BANK OF KATHMANDU LTD**

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

.....

**Asso. Kishor Maharjan**

**(Thesis Supervisor)**

.....

**Prof. Bisheshwor Man Shrestha**

**(Head of Research Department)**

.....

**Prof. Dr. Kamal Deep Dhakal**

**(Campus Chief)**

Date: \_\_\_\_\_

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**We have conducted the viva-voce of the thesis**

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HIMALAYAN BANK LTD AND BANK OF KATHMANDU LTD**

**And found the thesis to be the original work of the student and written according  
to the prescribed format. We recommend the thesis to be accepted as partial  
fulfillment of the requirement for the degree of**

**Master's Degree in Business Studies (MBS)**

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## **DECLARATION**

I hereby declare that the work reported in this thesis entitled "**A Comparative Study on Liquidity Management of Himalayan Bank Ltd and Bank of Kathmandu Ltd**" submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master in Business Studies (M.B.S) under the supervision of **Kishor Maharjan** of Shanker Dev Campus.

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**Prabin Lama**

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## ABBREVIATIONS

GDP	:	Gross Domestic Product
HBL	:	Himalayan Bank Limited
BOKL	:	Bank of Kathmandu Limited
ATM	:	Automated Teller Machine
NRB	:	Nepal Rastra Bank
CRR	:	Cash Reserve Ratio
SLR	:	Statutory Liquidity Ratio
RBB	:	Rastriya Banijya Bank Limited
NBL	:	Nepal Bank Limited
SCBL	:	Standard Chartered Bank Nepal Limited
NBBL	:	Nepal Bangladesh Bank Limited
DCBL	:	Development Credit Bank Limited
NDBL	:	Nepal Development Bank Limited
C.A	:	Current Assets
C.L	:	Current Liabilities
S.D	:	Standard Deviation
C.V	:	Coefficient of Variation

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 General Background**

Nepal is a small, least developed and landlocked country situated between two Asian giants India and China. It is roughly rectangular in shape sloping downward towards the east. Its geographical location is from 26° 22' N to 30° 27' N latitudes and 80° 4'E to 88°12' E longitudes. It has area of 1, 47, 181 sq.km which is 0.3% of the total area of Asia and 0.03% of the world. Its average length from east to west is 885 km and average breadth from north to south is 193 km. Nepal known as the vertical world is the steepest country in the world. The altitude of Nepal ranges from 65 metres to 8, 848 metres from the sea level. The climate varies from cool summers and severe winters in north to subtropical summers and mild winters in south.

Nevertheless, with almost 24.5% of its population living below the poverty line. Agriculture is the mainstay of the economy, providing a livelihood for three-fourths of the population and accounting for 35% of GDP. Most of the people of the nation are primarily engaged in agricultural sector and they are depended on agriculture to fulfill their basic needs. Industrial activity mainly involves the processing of agricultural products including jute, sugarcane, tobacco and grain. Prospects for foreign trade on investment in other sectors will remain poor, however. There are lots of reasons for this such as the small size of the economy, technological backwardness, landlocked geographic location, civil strife and its susceptibility to natural disaster.

Nepal entered the modern era in 1951 without schools, hospitals, roads, telecommunications, electric power, industry or social service. The country has however, made progress toward sustainable economic growth since the 1950s and is committed to a program of economic liberalization.

Nepal has used a series of five-year plans in an attempt to make progress in economic development. It completed its ninth economic development plan in 2002; its currency has been made convertible, and 17 state enterprises have been privatized. Foreign aid accounts for more than half of the development budget. Government priorities over

the years have been the development of transportation and communication facilities, agriculture, and industry.

Among all other factors of development, financial institution can be considered as the catalyst to the economic growth of a country. Financial institution refers to a business concern which is mainly confined to finance for the development of the trade, commerce and industry. Trade, commerce and industry are the prime factors of the economic development. The development process of a country involves the mobilization and deployment of resources. There is always lack of finance in underdeveloped economy because natural resources are either underutilized or unutilized in productive sectors. So in these countries for the rapid development of the economy, there should be proper mobilization of resources. Banks and other financial institutions play a vital role to encourage thrift and discourage hoardings by mobilizing the resources and removing the habit of hoarding. They pursue rapid economic growth, developing the banking habit among the people, collecting the small-scattered resources in one bulk and utilizing them in future productive purposes and rendering other valuable services to the country.

The study related to analyze the liquidity management of commercial banks in Nepal. The study has been done with special reference to Himalayan Bank Limited (HBL) and Bank of Kathmandu Limited (BOKL).

### **1.1.1 INTRODUCTION OF HIMALAYAN BANK LTD**

Himalayan Bank was established in 1993 in joint venture with Habib Bank Limited of Pakistan. Despite the cut-throat competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities- Loans and Deposits.

Legacy of Himalayan lives on in an institution that's known throughout Nepal for its innovative approaches to merchandising and customer service. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. Other financial institutions in the country have been following our lead by introducing

similar products and services. Therefore, we stand for the innovations that we bring about in this country to help our Customers besides modernizing the banking sector. With the highest deposit base and loan portfolio amongst private sector banks and extending guarantees to correspondent banks covering exposure of other local banks under our credit standing with foreign correspondent banks, we believe we obviously lead the banking sector of Nepal. The most recent rating of HBL by Bankers' Almanac as country's number 1 Bank easily confirms our claim.

All Branches of HBL are integrated into Globus (developed by Temenos), the single Banking software where the Bank has made substantial investments. This has helped the Bank provide services like 'Any Branch Banking Facility', Internet Banking and SMS Banking. Living up to the expectations and aspirations of the Customers and other stakeholders of being innovative, HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. HBL also has a dedicated offsite 'Disaster Recovery Management System'. Looking at the number of Nepalese workers abroad and their need for formal money transfer channel; HBL has developed exclusive and proprietary online money transfer software- Himal Remit. By deputing our own staff with technical tie-ups with local exchange houses and banks, in the Middle East and Gulf region, HBL is the biggest inward remittance handling Bank in Nepal. All this only reflects that HBL has an outside-in rather than inside-out approach where Customers' needs and wants stand first.

Himalayan Bank Limited holds of a vision to become a **Leading Bank of the country** by providing premium products and services to the customers, thus ensuring attractive and substantial returns to the stakeholders of the Bank.

The Bank's mission is to become preferred provider of quality financial services in the country. There are two components in the mission of the Bank; **Preferred Provider and Quality Financial Services**; therefore we at HBL believe that the

mission will be accomplished only by satisfying these two important components with the Customer at focus. The Bank always strives positioning itself in the hearts and minds of the customers. To become the Bank of first choice is the main objective of the Bank. With its head and corporate office at Thamel, Kathmandu, the bank has 33 branches. Thirteen of its branches are located inside the Kathmandu Valley while the rest are spread across the nation. The bank has a very aggressive plan of establishing more branches in different parts of the country in near future.

**Table No: 1.1**  
**Capital structure of Himalayan Bank Limited**

<b>Capital as at 2066/2067</b>	<b>Amount inRs.'000'</b>
Authorized Capital	3000,000
Issued Capital	1,600,000
Paid up Capital	1,600,000

### **1.1.2 INTRODUCTION OF BANK OF KATHMANDU LIMITED**

Bank of Kathmandu Limited (BOKL) started its operation in March 1995 with the objective to stimulate the Nepalese economy and take it to newer heights. BOKL also aims to facilitate to facilitate the nation's economy and to become more competitive globally. Bank of Kathmandu is committed to delivering quality of service to customers, generating good return to shareholders, providing attractive incentives to employees and serving the community through stronger corporate social responsibility endeavor. Bank of Kathmandu activities globe around deposit mobilizations, advancement of various credits, international banking including trade financing, inward and outward remittance and funds and portfolio management. Bank has launched customer oriented service such as hire purchase, educational loan, housing loan, vehicle loan, festivity loan, foreign employment loan, scheme etc. bank of Kathmandu. It's launched the mobile banking service through SMS. With the aim of providing banking services at the customer fingertips. Bank of Kathmandu Limited (BOKL) has today become a landmark in the Nepalese banking sector by

being among the few commercial banks which is entirely managed by Nepalese professionals and owned by the general public. With its head and corporate office at Kamal Pokhari, Kathmandu, the bank has 39 branches. Twelve of its branches are located inside the Kathmandu Valley while the rest are spread across the nation. The bank has a very aggressive plan of establishing more branches in different parts of the country in near future.

**Table No: 1.2**  
**Capital structure of Bank of Kathmandu Limited**

<b>Capital as at 2066/2067</b>	<b>Amount inRs.'000'</b>
Authorized Capital	2000,000
Issued Capital	1,182,157
Paid up Capital	1,182,157

### **1.2 Statement of the Problem**

Liquidity is the most sensible and critical aspect of banks. The main problem of all the commercial banks regarding liquidity is to sacrifice profitability of the concerned bank while trying to maintain adequate liquidity. But if liquidity is not maintained then there might be difficulty in providing services like depositing withdrawal, loaning disbursement etc. Another problem of the banks relating to liquidity is the changing interest rates. Changing interest rates affect both customer's demand for deposits and customer's demand for loans. Both of them have a potent impact on the bank's liquidity position.

The banks of Nepal also have to face the problem of unstable political environment. Besides being a developing country, people of Nepal hardly understand the concept of banking and its use, thus making banks difficult operate it many major functions, especially in rural areas.

The major problems that have been identified for the purpose of this study are:-

1. What is the deposit position of the HBL and BOKL?
2. What is the investment position of the HBL and BOKL?
3. Are they maintaining sufficient liquidity?

4. What is the relationship between investment, loan and advances and total deposits?

### **1.3 Objectives of the Study**

The main objective of this research is to examine and study the liquidity management of HBL and BOKL. The specific objectives were:

1. To analyze the deposit and investment position of HBL and BOKL.
2. To analyze the liquidity position of HBL and BOKL.
3. To find out the relationship between deposit, investment, loans and advances and net profit.
4. To find out the trend analysis of deposit, investment loans and advances and net profit.
5. To provide suggestions for the improvement based on findings.

### **1.4 Significance of the Study**

Liquidity analysis is important for maintaining public confidence. This study focuses on how the HBL and BOKL maintain its liquidity needs. The additional importance of this study are as follows:

1. To get knowledge about the importance of the liquidity analysis in bank.
2. To find out the liquidity position of HBL and BOKL of Nepal.
3. It will encourage the use of liquidity tools to those banks that have yet used any tools.
4. The study is important to policy makers and academic professionals to formulate policies and plans based on the performance of the bank.
5. The study helps to know how well the bank (HBL and BOKL) is utilizing their deposit.

### **1.5 Limitations of the Study**

Despite of various importance of this study it will have some crucial limitations as well. The following will be the main limitations of relating to this study.

1. This study will be based on published secondary data and information and no attempts will have been made to examine the reliability and authenticity of the data.
2. There are various banks but this study is focuses only on the HBL and BOKL of Nepal.

3. The study is made within limited timeframe, limited data, and with lack of research experiment.
4. This research used only the selective tools for analysis and interpretation of data.

### **1.8 Organization of the Study**

The entire study is divided into 5 chapters. Brief information of what each chapter contains is given below:

**Chapter One:** It is an introductory chapter, which includes general background. It also discusses about statement of the problem, objective of the study, significant of the study, limitation of the study and organization of the study.

**Chapter Two:** The second chapter deals with the review of literature which consists of the conceptual frame-work, review of NRB Directives, review of Journals / Articles and review of previous thesis.

**Chapter Three:** This chapter is concerned with the research methodology used this study. It consists of research design, sources of data, sample selection and data collection procedure and tools and techniques for data analysis

**Chapter Four:** This is the heart of the chapter as it is concerned with presentation and analysis of the relevant data and information. In order to find out the true picture of the Liquidity Position of HBL and BOKL, various financial and statistical tools and techniques are used. Thus, this chapter is concerned with the findings of the bank.

**Chapter Five:** This chapter is concerned with the interpretation of the results and findings of chapter four. It summarizes the overall picture of the study, draws conclusions, and offers suggestions and recommendations for improvement in the future.

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

This chapter is focused on brief discussion about the abstract regarding the theories of liquidity. In order to accomplish the objectives of the study, the chapter includes review of concepts, assumptions, books and journals as well as major findings of previous studies of the relevant field are included in precise manner.

The purpose of reviewing the literature is to develop some expertise in one's area, to see what new contribution can be made and to receive some ideas for developing a research design. Thus, the previous studies can't be ignored because they provide the foundation to the present study. In other words, there has to be continuity in research. This continuity in research is insured by linking the present day with the past research studies. From this, it is clear that the purpose of literature review is to find out what research studies have been conducted in one's chosen field of study and what remains to be done.

The review of literature is a crucial aspect because it denotes planning of the study. The main purpose of literature is to find out what works have been done in the area of the research problem under study and what has not been done in the field the research study being undertaken. For review study, the researcher uses different books, reports; journal and research studies published by various institutions, unpublished dissertations submitted by master level students have been reviewed. Some reviews taken for this study are:

1. Conceptual Framework
2. Review of NRB Directives
3. Review of Journals / Articles
4. Review of Previous Thesis

## 2.1. Conceptual Framework

### 2.1.1 Origin of Bank

The word 'Bank' was derived from the French word '*Banque*' and Italian word '*Banco*'. Banco it refers to the 'desk or bench' where money lenders used to keep their valuable things and money.

The origin of commercial bank can be traced back as early as 2000 B.C., in Babylonia, certain people have developed Banking. There are traces of same time rich people used to practice storing precious metal and coins at safe place and loaning out money for public and private purpose on interest.

Crowther Modern Banking has 3 ancestors. They are;

#### a) **The Merchants:**

Merchants had to remit money from one place to another. It was very difficult to carry physical money each time when trading was executed. The merchants were so popular and credit worthy that the letters issued by them were treated as good as money. This gave rise to **Hundi**. **Hundi** is the letter of transfer money. It included the direction from banker to pay the bearer the specific amount.

#### b) **The Goldsmiths:**

Goldsmith used to have safe for storing valuables. Fear of theft and robbery led people to keep their valuables in the custody of goldsmith. They used to charge commission for safekeeping and used to return it on demand. Performing the safekeeping duty, goldsmith issued a receipt for deposits to the customer. The receipt was called the **Goldsmith note**.

#### c) **The Moneylenders:**

In the stage of development of banking, goldsmith became the money lenders. This development came when the goldsmith realized that on average daily withdrawals were equal to daily deposits and only contingency reserve was required for the period when withdrawal exceed deposits. After keeping the reserve the goldsmith loaned out the remaining deposits on interest.

According to Cannon Law, 'Bank of Venice' established in 1157 A.D. in Italy is regarded as the first Modern Bank. Following this, bank established were:

- i. Bank of Barcelona in 1401
- ii. Bank of Genoa in 1407
- iii. Bank of Amsterdam in 1609
- iv. Bank of England in 1694
- v. Bank of Hindustan in 1770

After the establishment of Bank of England Commercial Bank spread all over the world.

### **2.1.2 Origin of bank in Nepal**

Our history of banking sector is rather more slow evolution. So far as banking is concerned with the debt, we may go in the Nepalese history, where merchant named, "**Sankhdhar**" is recorded. He was the person who alone paid all debt of existing people of Nepal. Later he introduced the "**Nepal Sambat**".

During the Course of development of borrowing we further come across the term "Tanka Dhari" at the end of 14<sup>th</sup> century who meant money lenders. They are one of the 64 castes divided among occupations.

In 1877 A.D. **Tejarath Adda** was established by the government. The main purpose of this institution was to provide credit facility at minimum 5%. This marked the beginning of organized financial institution in Nepal.

Banking in modern sense started from the establishment of Nepal Bank Limited in 1937 A.D. with the cooperation of Imperial Bank of India. It came into existence under the "Nepal Bank Act 1937" as the first commercial bank of Nepal which marks the beginning or the organized banking system in Nepal. Later, Nepal Rasta Bank (NRB) Act 1955 was formulated under the co-ordination of the Royal Principal Royal Advisor Sardar established in 1966 A.D. After the establishment of this Bank there was a progress in the banking industry in Nepal.

### 2.1.3 Introduction to bank

A Bank is financial institution which deals with money and credit. It is an institution where people store, borrow and exchange money. It accepts deposit and makes loan. Generally, Bank accepts deposit from business institutions and individuals and mobilizes it in productive sectors. It facilitates to transfer money from one place to another. At present context, bank is not only concerned to lending money and accepting deposit, it is also engaged in exchange of money, bank guarantee, discounting bills, supplying loans etc. Mainly modern bank refers to an institution, which have following features;

- i. It deals with money; it accepts deposits and advances loans.
- ii. It also deals with credit; it has the ability to create credit by expanding its liabilities.
- iii. It is commercial institution; it aims at earning profit.

A Bank acts as a middleman between suppliers of funds and users of funds, collecting those funds from different sectors. It earns money by investing their customers' deposits. Bank grants more installment loans than other financial institution they are among of the most important financial institution in the economy.

Banks are the important players in financial markets and offer financial services such as investment funds. Mostly it is concerned with supplying short term loan and long term loan to the individuals and to the business institutions. Nowadays, whenever business and individual customers make purchase, they mostly use cheques, credit or debit cards.

**According to Kent:** " A bank is an organization whose principal operations are concerned with the accumulation of the temporarily idle money of the general public for the purpose of advancing together for expenditure."

**According to Prof. Kinley:** " A bank is an establishment which makes to individuals such advance of money as may be required and safely made, and to which individuals entrust money when not required by them for use."

**According to C.R.Crowther:** *“A bank collects money from those who it to spare or who are saving it out of their incomes, it lends this money to those who require it.”*

**According to Economist Walker Leaf:** *“A bank is that institution or individual who is always ready to service money on deposits to be returned against the cheques of their depositors.”*

#### **2.1.4 Introduction to Commercial Bank**

The concept of commercial bank evolved from the concept of commerce and bank. Generally, commercial bank refers to the bank. It links with the commercial class of people. Commercial Bank is the financial institution which accepts deposits and arrange for their productive uses. It is profit oriented bank. Its primary function is the transfer of monetary resources from the savers to the users. So it pools together the savings of surplus and arranges it.

**According to Commercial Bank Act 2031,** *‘A Commercial Bank means a bank which deals in exchanging currency, accepting deposit, giving loans and doing commercial transaction.’*

**According to Commercial Bank Act 2063,** *‘A Commercial Bank is one, which exchanges money, deposit money, accepts deposits, grants loans, and performs commercial banking functions.’*

**The New Encyclopedia Britanica, 1985:605,** *‘ A Commercial banker is a dealer in money and substitutes for money, such as cheque or bill of exchange. It also provide a variety of financial services.’*

Commercial bank are almost everywhere the largest of all the financial intermediaries. They have the widest range of activities and they provide a large amount of the money supply. Similarly, these banks finance industries and individuals by lending them money or loan and accept both saving and checking accounts. It gives certain interest rates to the depositors and charges certain rate of interest rates that are provided to the depositors. These deposits from individual and institutions are invested to satisfy the short term financing requirement of the business and industry.

Hence, Commercial Bank act as business firms looking for profit through the process of lending and investing activities.

In context of developing countries like Nepal, commercial banks play vital role. Nowadays there are 31 commercial banks in Nepal. Nepal Bank Ltd is the oldest commercial bank in Nepal. It was established in 1937 A.D. The commercial banks of Nepal are:

**Table No: 2.1**  
**Commercial Banks in Nepal**

S.N	Names	Operation Date(A.D.)	Head Office
1	Nepal Bank Ltd.	1937/11/15	Kathmandu
2	Rastriya Banijya Bank Ltd.	1966/01/23	Kathmandu
3	Agriculture Development Bank Ltd.	1968/01/02	Kathmandu
4	NABIL Bank Ltd.	1984/07/16	Kathmandu
5	Nepal Investment Bank Ltd.	1986/02/27	Kathmandu
6	Standard Chartered Bank Nepal Ltd.	1987/01/30	Kathmandu
7	Himalayan Bank Ltd.	1993/01/18	Kathmandu
8	Nepal SBI Bank Ltd.	1993/07/07	Kathmandu
9	Nepal Bangladesh Bank Ltd.	1994/06/05	Kathmandu
10	Everest Bank Ltd.	1994/10/18	Kathmandu
11	Bank of Kathmandu Ltd.	1995/03/12	Kathmandu
12	Nepal Credit & Commerce Bank Ltd.	1996/10/14	Rupendehi
13	Lumbini Bank Ltd.	1998/07/17	Chitwan
14	Nepal Industrial & Commercial Bank Ltd.	1998/07/21	Biratnagar
15	Machhapuchhre Bank Ltd.	2000/10/03	Pokhara
16	Kumari Bank Ltd.	2001/04/03	Kathmandu
17	Laxmi Bank Ltd.	2002/04/03	Birgunj
18	Siddhartha Bank Ltd.	2002/12/24	Kathmandu
19	Global Bank Ltd.	2007/01/02	Birgunj
20	Citizens Bank International Ltd.	2007/06/21	Kathmandu
21	Prime Commercial Bank Ltd.	2007/09/24	Kathmandu
22	Sunrise Bank Ltd.	2007/10/12	Kathmandu
23	Bank of Asia Nepal Ltd.	2007/10/12	Kathmandu
24	DCBL Bank Ltd.	2008/05/25	Kathmandu
25	NMB Bank Ltd.	2008/06/05	Kathmandu
26	Kist Bank Ltd.	2009/05/07	Kathmandu
27	Janata Bank Nepal Ltd.	2010/04/05	Kathmandu
28	Mega Bank Nepal Ltd.	2010/07/23	Kathmandu
29	Commerce & Trust Bank Nepal Ltd.	2010/09/20	Kathmandu
30	Civil Bank Ltd.	2010/11/26	Kathmandu
31	Century Commercial Bank Ltd.	2011/03/10	Kathmandu

However, central bank is the main bank of any nation that directs and controls all other banks. In Nepal, Nepal Rastra Bank is the central bank and all the commercial banks perform their functions under its rules, regulations and directions.

### **2.1.5 Functions of Commercial Bank**

Commercial banks are the most important types of financial institution for the nation in terms of aggregate assets. Traditional functions of commercial banks are only concerned with accepting deposits and providing loans. But modern commercial banks work for overall development of trade, commerce, service, and agriculture. The main functions of commercial banks are follows:

#### **a) Accepting Deposits:**

The most significant and traditional function of commercial bank is accepting deposit from the public. In case of current deposits, no interest is paid by the bank but the depositor can withdraw his money anytime he likes without notice. Savings deposits are paid a small rate of interest and the bank imposes certain restrictions on the withdrawal of money. Fixed deposits are made by the persons who have idle money with them. They can withdraw their money only after the expiry of the fixed period of time. These deposits carry the highest rate of interest that depends on the period for which the money is deposited.

#### **b) Providing Loans:**

Banks provide loans against approved securities to the public and companies. Loans can be granted in the form of cash credit, short term loan, overdraft, discounting of bills and demand loans. Under cash credit system, borrower is sanctioned a credit limit up to which he can borrow from the bank. The interest is calculated on the amount actually withdrawn. Short term loans are given as personal loans against some security. The interest is payable on the entire sum of loan granted..In case of Overdraft, a person is allowed to overdraw his current account to a certain limit as specified by the bank. The interest is paid on the amount outstanding against his balance and not on the amount

of loan sanctioned. A bill of exchange is drawn by a creditor on the debtor specifying the amount of debt and the date on which it is payable. Before the maturity of the bill, a debtor can get it discounted from the bank paying a very small interest.

**c) Credit Creation:**

A bank can be called the factory or the manufacturer of the credit. In the process of accepting and depositing money, banks multiply credit in the economy. It depends on cash reserve ratio.

**d) Transfer of funds:**

Commercial banks can transfer funds of a customer to other customer's accounts in the same or the different bank through cheques, drafts, mail transfers, telegraphic transfers etc.

**e) Agency Functions:**

- i) Collection of bills, drafts etc.
- ii) Collection of interest, dividends etc. on the behalf of the customers.
- iii) Payment of interests, installment of loans, insurance premium etc.
- iv) Purchase and sale of securities.
- v) Banks also executes the will of their customers after their deaths.

**f) Other Functions:**

- i) Payment of credit letters and travellers cheques, gift cheques, bank draft etc.
- ii) Banks also provide locker services for the valuable securities of their customers and charge a very nominal fee.
- iii) Banks also deals in foreign exchange. Such banks are usually called foreign exchange banks.

**2.1.6 Meaning of Liquidity**

Liquidity is defined as bank's capacity to pay cash exchange of deposits. Liquidity and profitability are interlinked with each other in banking business. Inadequate liquidity may lead to collapse of the bank while excess liquidity is detrimental bank's profitability. In order to remove demerits associated with maintaining inadequate and

excess liquidity, banks should maintain optimum level of liquidity ratio. Banks has to keep liquidity according to the directives and guidelines of Nepal Rastra Bank.

Liquidity is an important financial tools for the banks. Liquidity ratio measurement is an important tool to measure the financial performance of the firms. Bank has kept certain amount of deposits as liquidity for payment of deposits at call time. If the bank keep.

By liquidity is meant the readiness with which the bank can convert the assets into cash. Liquidity means short-term solvency of the borrower. A banker is essentially the lender of short-term funds because he knows that the bulk of his deposits are repayable on demand or at short notice. As the banker's deposits are subject to the legal obligation of being repayable on demand and at short notice, he must ensure liquidity also while lending, so that in times of need, he will be able to convert the assets into cash.

Bank can ensure high liquidity by keeping all deposits in the form of cash only. In such case, he will not be in position to meet the interest obligations and expenditure of the establishment. Form experience, he has learnt that he can safely lend out a substantial portion of the funds. But while lending he should try to ensure liquidity, i.e. in times of need, he must be able to obtain repayment of the money within a reasonably short time. Liquidity also implies that the assets can be sold without any loss. Thus the concept of liquidity has twin aspects namely quick sale ability or convert ability of the assets and the absence of risk of loss in such conversion.

As per the arrangement of NRB effective form fiscal year 2008 July to 2011 April, the commercial banks are required to maintain cash reserve of 5.5% with NRB of its total deposit liability with NRB.

### **2.1.7 Strategy for Liquidity Management**

There are three major strategies for liquidity management. They are Asset Liquidity Management Strategy, Borrowed Liquidity (Liability) Management and Balanced (Asset and Liability) Liquidity Management Strategy.

### **2.1.7.1 Asset Liability Management Strategy**

The oldest approach to meeting bank liquidity needs is known as asset liquidity management. In its purest form, this strategy calls for storing liquidity in the form of holding assets, predominantly in cash and marketable securities. When liquidity is needed, selected assets are sold for cash until the entire bank's demand for cash is met. This strategy is used mainly by smaller banks that find it a less risky approach to liquidity management than relying on the borrowings. But asset conversion is not a cost-less approach to liquidity management. First, selling assets means the bank loses the future earnings those assets would have generated had they not been sold off. Thus, there is an opportunity cost to storing liquidity in assets when those assets must be sold. Most assets sales also involve transaction costs paid to security brokers. Moreover, the assets in question may need to be sold in a market experiencing declining prices, subjecting the bank to the risk of substantial capital losses. Management must take care that those assets with the least profit potential are sold first in order to minimize the opportunity cost of future earnings foregone. Selling assets to raise liquidity also tends to weaken the appearance of the bank's balance sheet, because the assets sold are often low-risk government securities that give the impression the bank is financially strong. Finally, liquid assets generally carry the lowest rates of return.

### **2.1.7.2 Borrowed Liquidity (Liability) Management Strategy**

The borrowed liquidity strategy often called purchased liquidity or liability management. Borrowing liquid funds has a number of advantages. A bank can choose to borrow only when it actually needs funds, unlike storing liquidity in assets where a store house of at least some liquid assets must be held at all times, lowering the bank to leave the volume and composition of its assets portfolio unchanged if it is satisfied with the assets it currently holds. In contrast, selling assets to provide shrinks the size of a bank as its total assets holdings decline.

Borrowing liquidity is the most risky approach to solving bank liquidity problems but also has the highest expected return because of the volatility of money market interest

rates and the rapidly with which the availability of credit can change. The bank's borrowing cost is always uncertain, which adds greater uncertainty to the bank's net earnings. The principal sources of borrowing liquidity for a bank include large negotiable CDs, federal funds borrowings, repurchase agreements.

### **2.1.7.3 Balanced (Asset and Liability) Liquidity Management Strategy**

It is the combined use of liquid assets holding management and borrowed liability liquidity management. Due to the risks inherent in relying on borrowed liquidity and the costs of storing liquidity in assets, most banks compromise in choosing mixed liquidity management strategy. Under this strategy, bank should deal with both liquid asset management and liability management maintaining proper balance between them.

Under a balanced liquidity management strategy, some of the expected demands for liquidity are stored in liquid assets. They are principally holdings of marketable securities and deposits at other banks. Meanwhile, other anticipated liquidity needs are backstopped by advance agreements for lines of credit from other banks and other suppliers of funds (money market). Unexpected cash needs are typically met from short-term borrowings. Longer-term liquidity needs can be planned for and funds to meet them can be managed from short-term and medium-term loans and advances.

### **2.1.8 Needs for Liquidity Mobilization**

The following are the reasons for why liquidity mobilization is needed in a developing country like Nepal. The following points are the needs for liquidity mobilization.

- a. The need for liquidity mobilization is felt to control unnecessary expenditure. If there is no saving, the extra money that the people have, can be forwarded buying unnecessary and luxury goods. So, the government also should help to collect more liquidity, stepping legal procedures to control unnecessary expenditures.
- b. Capital is needed for the development of any sector of the country. The objective of liquidity mobilization is to collect the scattered capital in different forms within the country.

- c. Commercial banks are playing a vital role for national development. Liquidity mobilization is necessary to increase their activities. Commercial banks are granting loan not only in productive sectors, but also in other sectors like food grains, gold and silver.
- d. To increase saving is to mobilize liquidity. It is because if the production of agriculture and industrial products increases, it gives additional income, which helps to save more, and ultimately, it plays a good role in liquidity mobilization.

### **2.1.9 Liquidity Management Model**

Under the liquidity management any institution may generate liquidity by managing its profitability. Although traditional model shows an important part of cash management, it doesn't help to show the appropriate utilization of fund. One of the techniques of mixing the cash balance with loan investment is Baumol Model which is based on high low cash balance. The following models are describe as follows:

#### **a) Baumol Model**

According to this model, minimizing the opportunity cost of holding cash and maximizing the return on the fund, the cash balance should be maintained at a minimum level and the funds not required for immediate Baumol Model identifies the cash maintenance as analogous to inventory maintenance and demonstrates that the model of economic order quantity:

Baumol Model is based on the assumption that:

- Cash is used at constant rate
- The periodic cash requirement is more or less save
- There are some cost such as the opportunity cost that increase and other cost such as transaction cost that decrease with cash balance.

#### **b) Miller Model**

Due to high opportunity cost, all liquidity need should not be maintained in cash that bears no returns. It is necessary to maintain cash balance for transition and compensation balance requirement but the liquidity need for the other purpose doesn't need to be in cash. The size of cash needs depends on the pattern and degree of

regulating of inflows and outflows. Hence Miller had developed model known as Miller Model, which takes into account the realistic pattern of cash flow and prescribes which and how much to transfer from to investment account vice versa.

### **2.1.10 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 as 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.

### **2.1.11 Demand and Supply of Bank Liquidity**

Bank liquidity is the total balance of cash and near about cash. Government securities, shares and debentures are also known as bank liquidity. They are near cash as they can be sold into market without losing their value.

Bank liquidity is essential to meet various cash demands. The bank liquidity is demanded under various headings such as by cheque payment, loan advancement, administrative expenses and meet contingencies. In addition to this, bank liquidity is essential to satisfy the interest of share holders.

#### **Demand of Bank liquidity**

Cash is the most liquid asset of bank. It includes the local currencies, foreign currencies, gold, silver and coins. In addition to these, government securities and first

class securities are also known as liquidity of bank. Basically, demand of bank liquidity is emerged from the headings:

**a) Withdrawals of Customer Deposit:**

Banks accepts mainly three types of deposits, namely current deposit fixed deposit and saving deposits. Such deposits should be refunded when account holders demand for. Saving and current deposits are refunded on demand of accountholders. Fixed deposit is refunded after expire of due date.

**b) Acceptable Loan Requests:**

Commercial banks should earn profit for survival. So they must advance loan against interest. After maintaining minimum liquidity balance (cash reserve ratio, and statutory liquidity ratio), banks advance profitable and secured loans to borrowers. Hence, 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 such 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. Bank liquidity is demanded by such repayment of non-deposit borrowing too.

**d) Operating Expenses and Taxes:**

It is the expenses incurred selling banking services. It also includes taxes. Banks 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. It helps to expand profit of bank.

**e) 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. It is essential to increase the value of stockholders. For this purpose, there is annual demand of liquidity after annual meeting in profitability banks.

**f) Payment of interest:**

Banks have to pay interest on the deposit collected under fixed account and saving account. Thus, the payment of interest on deposit also demands for bank liquidity. Generally, interest on saving account is to be paid at the end of each month. It is paid by crediting the amount of interest on the concerned account, whereas the interest on fixed deposit is paid either on every three months or on the expiry of the due date.

**g) Expansion and Growth:**

For continuous existence, banks have to adjust as per the changing environment. Banks should provide additional liquidity for modification, modernization, expansion and growth, research and survey program should be conducted to find out new sectors of banking services. There should be additional budget for such purposes. All these activities demand bank liquidity.

**h) Cash Reserve Ratio:**

All commercial banks have to maintain certain cash balance as cash reserve ratio in central bank. It is called cash reserve ratio (CRR). Similarly, there should be a certain cash balance in the bank vault. The minimum balance should be maintained by law. It is called statutory liquidity ratio. Such ratios are determined according to the ratio of deposit collected by banks. CRR and SLR are determined by the central bank. For this liquidity is demanded by bank. When cash reserve ratio and statutory liquidity ratio increased by the central bank, the demand for liquidity is also simultaneously increased.

**Supply of Bank Liquidity**

All sources of bank fund are known as the supply of bank liquidity. There should be proper balance between the demand of bank liquidity and supply of bank liquidity. The major sources of bank liquidity are given below:

**a) Customer Deposits:**

Commercial banks accept deposits from public under various accounts such as current, saving and fixed deposit accounts. This is the most important source of bank liquidity because majority of bank fund is collected through this source. Maintaining

appropriate cash balance, bankers invest the most deposit liquidity into productive sectors like industries and traders.

**b) Interest on Bank Loan:**

The main objective of advancing loan is to earn interest. Banks must earn interest to fulfill the demand of bank liquidity (for administration expenses, expansion growth and payment of dividend). The basic concept of banking is to accept deposits in lower interest rate and advance loan in higher interest rate. The spread rate between them is the profit of bankers. Hence, interest on bank loan is also a source of bank liquidity.

**c) Loan Repayment:**

After proper evaluation, banks accept loan proposal and provide loan to the borrowers. Bank loans have predetermined time period of maturity and rate of interest. All loans are repaid into bank after expiry of due date. In installment system, loans are repaid with interest on monthly basis. Hence, repayment of loan is also known as the source of bank liquidity.

**d) Sale of assets:**

Banks purchase different types of fixed assets for banking operation. They can purchase land and 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.

**e) Borrowing From Money Market:**

The development of technology and commerce enhanced the money market. Today, any institution including banks can easily borrow money from the money market. Finance companies, capital market, insurance companies, saving and investment institution, provident fund office, citizen investments funds etc. are the major sources of liquidity under money market.

**f) Revenue from the Sales of Non-deposit Services:**

Modern bankers provide many more banking services as per demands of customers. Except interest earned and deposits, banks have some other sources of liquidity. Banks

render various types of services like collection of cheques, transfer of fund (remittance), 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. It is an extra source of bank liquidity. Recently, earning more from such non-deposit services is contributing a lot in the total revenue of the bank.

**g) Reserve Funds:**

Banking is a risky business. Therefore, banks should open different types of reserve funds to sue when needed. Reserve funds are created from the profit. Banks do not distribute all their profits to the shareholders. Certain percentage of annual profit is appropriated to various 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 institution. They are used as the shock observes of financial fluctuations in banking market. In this way, such reserve funds are also 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 capital is also important source of bank capital. But it must be noted that it is not regular source of income. The liquidity collected by issue of share is the long-term investment of general public. Such liquidity is not refunded until the resolution of the bank. So, bankers generally use such liquidity in fixed assets such as purchase of land and building, furniture, fixtures, equipments etc. There may be authorized capital, issued capital, called-up capital and paid-up capital in banks. Among them, liquidity is only the paid-up portion of bank capital.

**Table No: 2.2**

**Demand and Supply of Bank Liquidity**

<b>Demand of Bank liquidity</b>	<b>Supply of Bank Liquidity</b>
- Withdrawals of Customer Deposit	- Customer Deposits
- Acceptable Loan Requests	- Interest on Bank Loan
- Repayment of Non-deposit Borrowings	- Loan Repayment
- Operating Expenses and Taxes	- Sale of Assets
- Payment of Stockholder Cash Dividends	- Borrowings From Money Market
- Payment of Interest	- Revenue from the Sales of Non-deposit Services
- Expansion and Growth	- Reserve Funds
- Cash Reserve Ratio	- Share Capital

There are various sources of liquidity demand and supply come together to determine each bank's net liquidity position at any moment in time. That new liquidity position at time 't' is as follows.

**Table No: 2.3**

**Net Liquidity Position Calculation Table**

<b>A. Supplies of Liquidity Flowing into the Bank</b>	
+ Customer Deposit	
+ Interest on bank loan	
+ Revenue from the Sales of Non-deposit Services	
+ Loan Repayments	
+ Sales of Assets	
+ Borrowings from the Money Market	
+ Reserve Funds	
+ Share Capital	

<p><b>B. Demands on the Bank for Liquidity</b></p> <ul style="list-style-type: none"> <li>+ Withdrawals of Customer Deposit</li> <li>+ <b>Acceptable Loan Requests</b></li> <li>+ Repayment of Non-deposit Borrowing</li> <li>+ Operating Expenses and Taxes</li> <li>+ Payment of Stock holder Cash Dividends</li> <li>+ Payment of interest</li> <li>+ Expansion and Growth</li> <li>+ Cash Reserve Ratio</li> </ul>	
<p><b>C. A bank's net liquidity position (Lt) (A-B)</b></p>	

When the bank's total demand for liquidity exceeds its total supply of liquidity, management must prepare for a liquidity deficit, deciding when and where to raise additional liquid funds. On the other hand, if at any point in time the total supply of liquidity of the bank exceeds all of its liquidity demands, management must prepare for a liquidity surplus. For this, the management has to decide when and where to invest surplus liquid funds profitably until they are needed to cover future liquidity demands. Liquidity has critical time dimension. Some bank liquidity needs are immediate or nearly so. For example, several large fixed deposits may be due to mature tomorrow. The customer will withdraw these deposits rather than rolling them over into new deposits. Sources of funds that can be accessed immediately must be used to meet these near-term liquidity pressures such as borrowing from another bank. Long term liquidity demands arise from seasonal, cyclical, and trend factors. For example, liquid funds are generally in greater demand during the fall and summer coincident with school, holidays, and customer travel plans. Anticipating these long-term liquidity needs, bankers can draw upon a wider array of alternative sources of funds, such as selling of accumulated liquid assets or long-term borrowings. Timing is critical for liquidity management. Banker must plan carefully how; when and where needed liquid funds can be raised.

The essence of the liquidity management problem for a bank may be described in two succinct statements:

- a. Rarely are the demands for bank liquidity equal to the supply of liquidity at any particular moment in time. The bank must continually deal with either a liquidity deficit or a liquidity surplus.
- b. There is a trade-off between bank liquidity and profitability. The more bank resources are tied up in readiness to meet demands for liquidity; the lower is the bank's expected profitability.

Thus, ensuring adequate liquidity is a never-ending problem for bank management that will always have significant implications for the bank's profitability. Liquidity management decisions cannot be made in isolation from all the other service areas, departments and branches. Resolving liquidity problems subjects a bank to cost. It includes interest cost on borrowed funds, the transactions cost of time and money in finding adequate liquid funds and an opportunity cost that must be forgone to help to meet a bank's liquidity needs. The management must weigh these costs against the immediacy of the liquidity needs.

If a bank winds up with excess liquidity at any time, its management must be prepared to invest those excess funds immediately to avoid incurring an opportunity cost from idle funds that are not generating earnings for the bank.

It is clear that a bank has to face the interest rate risk and availability risk. It means the interest rate may go higher in the money market and the liquidity funds may not be available in the volume needed by the bank. If the lenders of liquidity perceive a bank to be more risky than before, that bank will be forced to pay higher interest rates to borrow liquidity and some lenders will simply refuse to make liquid funds available at all. In this position the bank must be ready to sell its assets to meet the liquidity need of the bank.

## **2.2 Review of NRB Directives**

According to 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

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

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

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 from 1 year.

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

7% of current and savings deposits liabilities and 4.5% of fixed deposits liabilities.

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

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

4. 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 Journals /Articles**

Journals, articles and bulletins are of great significance for thesis writing. So, various published and unpublished articles by different expert and journals and bulletins are as follows:

**Sharma Bibek (2000 AD)** on his title, "Banking Future on Competition" found that all the commercial banks are establishing and operating in urban areas. His achievements are:

- Commercial banking are charging rate of interest on lending.
- Commercial banks are establishing and providing their services in urban areas only. They do not have interest to establish in rural areas.
- Only the RBB and NBL have branches in rural areas.
- They do not properly analyze the credit system. The researcher further states that private commercial banks have mushroomed only in urban areas where large volume of banking transaction and activities are possible.

**Kafle Deepak (2003 AD)** in his article in the topic of "Monetary and Financial Reports in Nepal" states that consolidation and liberalization of interest rate measure is initiated with a view to provide more option to commercial banks in the mobilization of saving and portfolio management through market determined interest and lending rates.

Investors seeking higher return must be willing to face higher level of risk. Finance company being only a financial intermediary, we will not be able to make any profit unless we mobilize funds suitably. It is from out of the interest, finance company earns on loan and advance, further he has to pay interest on deposit meet liquidity of cash balance. Meet establishment expenses keep some balance for reserve and pay dividend to the shareholders. Investment in its broadest sense means the sacrifice of certain present value for future value.

**For the liquidity management, Dr. Bihari Binod Pokharel and Mr. Ujwal Raj Gautam, (2004 AD)** in their book "Fundamental of Financial Management" have give some conceptual ingredients. As attempts should be made to accelerate collections and handle disbursement so that maximum liquidity is available. Collection liquidity is accelerated by means of concentration banking, lock box system and other specific pick plans. A firm can reduce its liquidity balance by adopting quicker mechanism of transferring fund. The optimum 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 AD)** 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. Moreover, suppose loan demand sometimes 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 to be significantly above management's expectations, so that it touches the highest points in the bank's deposit growth track. Moreover 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 somewhere 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 AD)** 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 create big problem but the situation is in controllable, NRB is going to make a policy to solve it".

**NRB introduces refinancing for productive sectors, Republica (2<sup>nd</sup> April, 2010)**  
Board meeting of NRB endorsed on 1<sup>st</sup> 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 Previous Thesis**

**Thapa Uttam Bahadur (2004)** has conducted his study on "Liquidity Management practices before and after financial sector 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 of the bank.

His major findings of the study are as follows:

Average liquidity and bank balance and loan and advances percentages in 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 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.

The 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.

other financial, non-financial companies, hotels and government companies.

**Shrestha Rajani (2007)**, made a thesis report entitle "Liquidity Management of NABIL Bank Ltd," the objectives of study is to analyzes financial ratios, trend analysis of ratio and profit and to provide suggestion for the future betterment of NABIL Bank Ltd. The major findings of the study are as follows:

Liquidity ratios of NABIL Bank Ltd. are fluctuating over the study period. The profitability ratio are fluctuating and 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 be maintained by depositor and enhance the wide range of services provided to customers 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 with 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.

**Limbu Ram (2008)** In his dissertation, "Credit Management of NABIL Bank limited" highlighted that aggregate performance and condition of NABIL bank. In the aspect of liquidity position, cash and bank balance reserve ratio shows the more liquidity position. Cash and bank balance to current deposit has fluctuating trend in 5 years study period. Cash and bank balance to current deposit is also fluctuating. The average mean of cash and bank balance to interest sensitive ratio is able to maintain good financial condition.

The main objectives of the research study are as follow.

- To evaluate various financial ration of the NABIL Bank.
- To analyze the portfolio of lending selected sector of banks.
- To determine the impact of deposit in liquidity and its effect on lending practices.
- To offer suitable suggestions based on findings of this study.

The main findings and conclusions are according to calculated ratio. In the aspect of assets management ratio, assets management position of the bank shows better performance in the recent years. Non-performing assets to total assets ratio is decreasing trend. The bank is able to obtain higher lending opportunity during the study period. Therefore, credit management is in good position of the bank. In leverage ratio, Debt to equity ratio is in an increasing trend. High total debt to total assets ratio posses' higher financial risk and vice-versa. It represents good condition of Total assets to net worth ratio. In the aspect of profitability position, total net

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

The major findings of the study are 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, leverage ratio and 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 that DCBL. So, both banks should either increase its own equity capital or decrease debt financing. Both banks have provided more loan and advances 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 give their attention for legal requirement in maintaining liquidity as well as debt financing.

**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.

The major findings of the study are 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, Internal Rate, NRB. Regulations are to be found most affecting factor of liquidity position. The CRR Ratio is 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.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

Research methodology is concerned with various methods and techniques, which are used in the process of research studies. It includes wide range of methods including quantitative technique for data analysis and presentation. It facilitates the research work and provides reliability and validity to it. The research methodology is followed to achieve the basic objectives and goals of research work. The major components of research methodology followed in this research study are discussed below.

#### **3.1 Research Design**

To achieve the objective of this study, analytical and descriptive research designs have been used.

#### **3.2 Sources of Data**

The nature of data required for this research work is secondary so that data have been collected from secondary sources. This refers to data that are already used and gathered by others. The data have been collected from annual reports of HBL and BOKL, different circular regarding rules and regulations of the banks, and unpublished materials, newspapers, magazines, related documents and journals available in different libraries, other organization like Nepal Rastra Bank.

#### **3.3 Sample Selection**

The objective of the research is to explore and describe the liquidity management of commercial bank i.e. HBL and BOKL. Nowadays a number of commercial banks have been emerging rapidly. Some have already been established and others are in the process of establishment. Here, the total 31 commercial banks shall constitute the population of the data and two banks under the study constitutes the sample under this study. Among them HBL and BOKL have been selected as sample for the present day. Financial statements of five years are selected as samples for this purpose it

### 3.4 Data collection procedure

Data collected from various secondary sources will be presented in tables, so as to meet the requirements of the study. While shaping the data into tabulated form proper attention will be taken not to let the chances of error. Most of the data will be processed by using relevant statistical tools and it will be shown in tabular form.

### 3.5 Tools and Techniques for Data Analysis

To obtain the objective, to find out the accurate result different tools will be used. Financial as well as the statistical tools are used to make the analysis more convenient, reliable and authentic.

1. Financial Tools
2. Statistical Tools

#### 3.5.1 Financial Tools

Financial tools are calculated to ascertain the financial condition of the firm. It is the relationship between financial variables contained in the financial statements (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. The financial tools are used in this study are as follows: Liquidity ratio, Asset management ratio and Profitability ratio.

- i) **Liquidity Ratio:** This ratio measures the liquidity position of a firm. It measure firm's ability to meet its short-term obligations. As a financial analytical, following liquidity ratios will be used.
- a) **Current Ratio:** It shows the relationship between current asset and current liabilities. Higher the current ratio betters the liquidity position. It can be compounded by dividing the total assets by current liabilities, which can be shown as follows:

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

- b) **Cash and Bank Balance to Total Deposit Ratio:** Cash and bank balances are the most liquid current assets. This ratio measures the percentage of most liquid fund

with the bank to make immediate payment to the depositor. This ratio can be computed by dividing cash and bank balance by total deposit and can be presented as:

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

Cash and bank balance includes cash in hand, foreign cash in hand, cheques and other cash items, balance with domestic and foreign banks. The total deposit includes deposits made by customers through different accounts like current (demand deposit), saving fund deposit, call deposit and other deposit accounts.

- c) **Cash and Bank Balance to Current Assets Ratio:** This ratio measures the proportion of most liquid asset i.e. cash and bank balance among the total current assets of the bank. . This ratio can be computed by dividing cash and bank balance by current assets and can be presented as:

$$\text{Cash and bank balance to current assets ratio} = \frac{\text{Cash and bank balance}}{\text{Current assets}}$$

- d) **Investment on Government Securities in Total Current Assets Ratio:** This ratio is calculated to find out the percentage of current assets invested on government securities i.e. treasury bills and development bonds. This ratio can be computed by dividing Investment on Government Securities by current assets and can be presented as:

$$\text{Investment on Government Securities to total current assets ratio} = \frac{\text{Investment on Govt. Securities}}{\text{Current assets}}$$

- ii) **Assets Management Ratio:** Asset management ratio measure the proportion of various assets and liabilities in balance sheet. The proper management of assets and liability ensures its effective utilization. The following are the various ratios relating to determine the efficiency of the subjected bank in managing its assets and in portfolio management.

**a) Loan and Advances to Total Deposit Ratio:** This is ratio is also called credit-deposit ratio. Greater ratio implies better utilization of total deposits. This ratio can be computed by dividing Loan and Advances by total deposit and can be presented as:

$$\text{Loan and Advances to total deposit ratio} = \frac{\text{Loan \& Advances}}{\text{Total deposits}}$$

**b) Total investment to Total Deposit Ratio:** This implies the utilization of firm's deposit on investment on government securities, shares and debentures of other companies and banks. This ratio can be computed by dividing Total Investment by total deposit and can be presented as:

$$\text{Total investment to total deposit ratio} = \frac{\text{Total investment}}{\text{Total deposits}}$$

**c) Loan and Advances to Working Fund Ratio:** Loan and advances is the major component in the total working fund (total assets), which indicates the ability of bank to utilize its deposits in the form of loan and advances to earn high return. This ratio can be computed by dividing Loan and Advances by total working fund ratio and can be presented as:

$$\text{Loan and advances to working fund ratio} = \frac{\text{Loans and advances}}{\text{Total working fund}}$$

**d) Investment on Government Securities to Total Assets Ratio:** This ratio shows that bank's investment on government securities in comparison to the total working fund. This ratio can be computed by dividing Investment on Government Securities by total working fund ratio and can be presented as:

$$\text{Investment on Govt. Securities to total working fund} = \frac{\text{Investment on Govt. Securities}}{\text{Total working fund}}$$

**iii) Profitability Ratios:** Profitability ratios are used to indicate and measure the overall efficiency of a firm in terms of profit and financial performance. For better performance, profitability ratios of firm should be higher. The following profitability ratio will be computed.

**a) Return on Loan and Advances Ratio:** This ratio indicates how efficiently the

bank utilizes its resources in the form loans and advances. This ratio can be computed by dividing net profit (loss) by loan and advances and can be presented as:

$$\text{Return on Loan and advances ratio} = \frac{\text{Net Profit( loss)}}{\text{Loans and advances}}$$

**b) Return of Total Asset Ratio (ROA):** This ratio measures the overall profitability of all working fund i.e. total assets. It is also known as return on assets (ROA). This ratio can be computed by dividing net profit (loss) by total working fund and can be presented as:

$$\text{Return on total working fund ratio (ROA)} = \frac{\text{Net Profit( loss)}}{\text{Total working fund}}$$

**c) Return on Equity Ratio (ROE):** This ratio measures how efficiently the bank has used funds of the shareholders. This ratio can be computed by dividing net profit (loss) by total equity capital (net worth) and can be presented as:

$$\text{Return on equity (ROE)} = \frac{\text{Net Profit( loss)}}{\text{Total equity capital}}$$

**d) Total Interest Earned to Total Asset Ratio:** This ratio is computed to fine out percentage of interest earned to total assets (working fund). This ratio can be computed by total interest earned by total working fund and can be presented as:

$$\text{Total interest earned to total working fund ratio} = \frac{\text{Total interest paid}}{\text{Total working fund}}$$

**e) Interest Income to Total Income Ratio:** This ratio measure the volume of interest income in total income of the bank. This ratio can be computed by interest income by total income and can be presented as:

$$\text{Interest income to total income ratio} = \frac{\text{Interest income}}{\text{Total income}}$$

**f) Total Interest Paid to Total Working Fund Ratio:** This ratio depicts the percentage of interest paid on liabilities with respect to total working fund, which can be presented as:

$$\text{Total interest paid to total working fund ratio} = \frac{\text{Total interest paid}}{\text{Total working fund}}$$

### 3.5.1 Statistical Tools

Some important statistical tools will be used to achieve the objective of this study. In this study statistical tool such as mean, standard deviation, coefficient of variation, coefficient of correlation and trend analysis will be used.

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

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

Where,  $\bar{X}$  = Mean of the values

$\sum X$  = Summation of the values

$N$  = No. of Observations

**ii) Standard Deviation:** The standard deviation is the measure that is most often used to describe variability in data distribution. It can be thought of as a rough measure of the average amount by which observations deviate on either side of the mean. Standard Deviation is represented by

$$\text{Standard deviation } (\sigma) = \frac{\sqrt{\sum(X-\bar{X})^2}}{n-1}$$

Where,

$X$  = Expected return of the historical data

$N$  = Number of observation

**iii) Coefficient of Variation:** The relative measure of dispersion is the co-efficient of variation, comparable across distribution, which is defined as the ratio of the standard to the mean expressed in percent.

$$\text{Coefficient of variation (C.V)} = \frac{\sigma}{\bar{X}}$$

Where,

$\sigma$  = Standard deviation

$\bar{X}$  = Mean value of variances

**iv) Coefficient of Correlation (r):** The correlation between the different variables of a bank is compared to measure the performance of these banks. If between two variables, increase or decrease in one causes increase or decrease in another, then such variables are correlated variables. The correlation coefficient describes the degree of relationship between two variables. It interprets whether variables are correlated positively or negatively. The Karl Pearson coefficient of correlation ( r ) is given by following formula:

$$\text{Coefficient of Correlation (r)} = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}}$$

The Karl Pearson coefficient of correlation always falls between -1 or +1. The value of correlation in minus signifies the negative and in plus signifies the positive correlation. As the value of correlation reaches to the value of zero, it is said that there is no significant relationship between the variables.

**v) Trend Analysis:** Among the various methods of determining trend of time series, the most popular and mathematical method is the least square method. Using the least square method, it has been estimated the future trend values of different variables. For the estimation of linear trends line following formula can be used:

$$y = a + b x$$

Where,

y= Dependent variable

x = Independent variable

A = y-intercept

b = slope of the trend line

## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF DATA

Introduction review of literature and research methodology is presented in the previous chapters that provide the basis inputs to analyze and interpret the data. Presentation and analysis of data is the main body of the study. In this chapter collected data are analyzed and interpreted as per the stated methodology in the previous chapter. The main sources of data are secondary data. In this chapter, researcher has analyzed and diagnosed liquidity management of Himalayan Bank Limited and Bank of Kathmandu Limited. All the liquidity management is analyze by calculating following ratio.

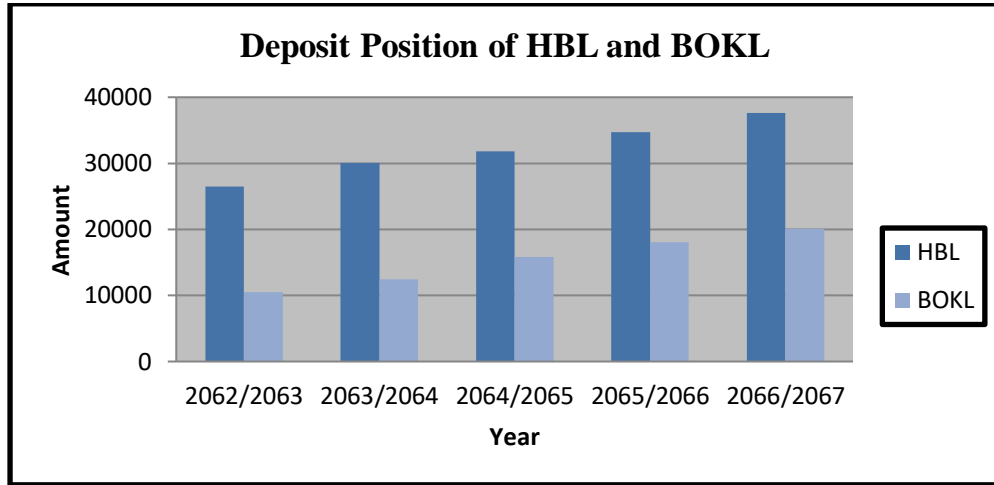
**4.1 Financial Analysis:** In this part various financial ratios related are presented to evaluate and analyze the performance of commercial Banks i.e. HBL and BOKL. Some important financial ratios are only calculated in the point of view of fund mobilization. The ratios are designed and calculated to highlight the relationship between financial items and figures. It is a kind of mathematical relationship and procedure dividing one item by another.

**Table No. 4.1**  
**Total Deposit, Total Investment and Cash & Bank Balance of HBL and BOKL**  
(in millions)

Bank	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Total Deposit	Total Investment	Cash & Bank Balance	Total Deposit	Total Investment	Cash & Bank Balance
2062/2063	26490.85	10890.37	1717.35	10485.36	3378.13	728.70
2063/2064	30048.42	11822.98	1757.34	12388.93	2995.19	1315.90
2064/2065	31842.79	13340.18	1448.14	15833.74	3206.83	1440.47
2065/2066	34682.31	8710.69	3048.53	18083.98	2786.36	2182.11
2066/2067	37611.20	8444.91	3866.49	20135.83	3269.20	1798.37
Average	32135.11	10641.83	2367.57	15385.57	3127.14	1493.11

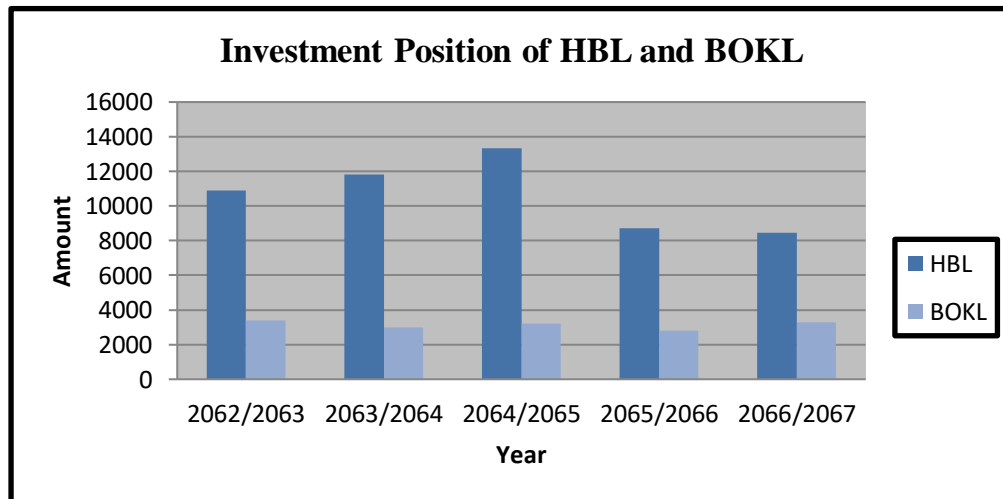
*Sources: Annual Report of Concern Banks from 2062/2063 to 2066/2067*

**Figure No. 4.1**



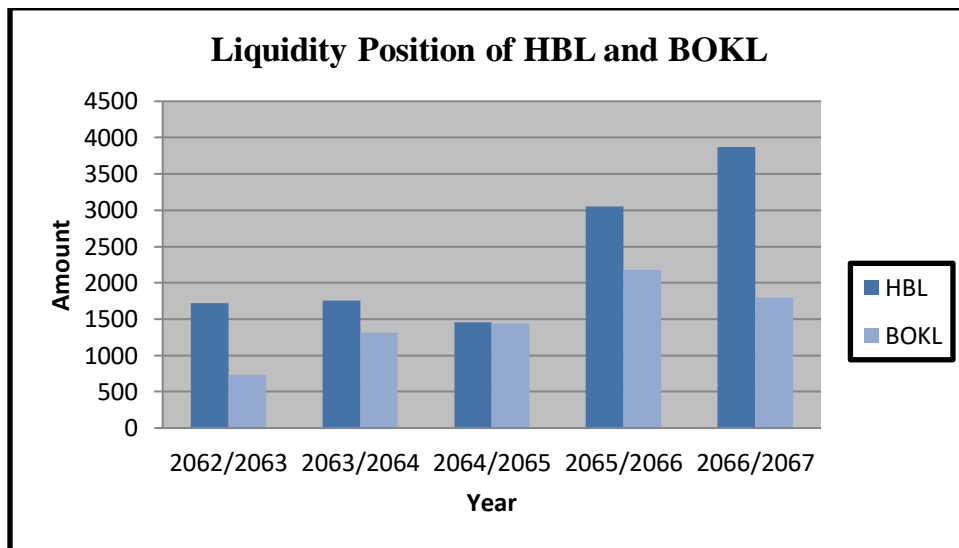
Above table and figure show the deposit position of HBL and BOKL. The HBL Bank has increasing trend of total deposit over the study period. The average total deposit of HBL is 32135.11 and 15385.57 of BOKL. The lowest amount Rs. 26490.85 million in 2062/2063 and highest amount Rs. 37611.20 million in 2066/2067. Similarly BOKL bank also increasing trend of total deposit during the study. The lowest amount Rs. 10485.36 million in 2062/2063 and highest amount Rs. 20135.83 million in 2066/2067. In comparison the HBL seems higher in deposit position than the BOKL Bank.

**Figure No. 4.2**



Above table and figure show the investment position of HBL and BOKL. The HBL Bank has fluctuating trend of total deposit over the study period. The average amount of investment of HBL is Rs. 10641.83 and Rs. 3127.14 of BOKL. The lowest amount Rs. 8444.91 million in 2066/2067 and highest amount Rs. 13340.18 million in 2064/2065 of HBL. In the same way the BOKL Bank has also fluctuating trend of total deposit over the study period. The lowest amount Rs. 2786.36 million in 2065/2066 and highest amount Rs. 3378.13 million in 2062/2063 of HBL. The total average investment of HBL is higher than the BOKL.

**Figure No. 4.3**



Similarly, liquidity position of HBL is in increasing trend except in the year 2064/6065 over the study period. The average amount of cash and bank balance of HBL is Rs.2367.57 million and Rs.1493.11 million of BOKL. The highest amount of liquidity is Rs.3866.49 million in 2066/2067 and lowest amount Rs.1448.14 million in 2064/2065 of HBL. In the same way the BOKL is also in increasing trend except in the year 2066/6067 over the study period. The lowest amount of cash and bank balance Rs.728.70 million in 2062/2063 and highest amount is Rs.2182.11 in 2065/2066 of BOKL.

**4.1.1 Ratio Analysis:** Ratio analysis shows the mathematical relationship between accounting figures. It helps to analyze the financial strengths and weakness of the banks. It is also inevitable for the quantitative judgment with which the liquidity management of banks can be presented properly.

**4.1.1.1 Liquidity Ratio:** Commercial bank must maintain its satisfactory liquidity positing to satisfy the credit needs of community, to meet demands for deposit-withdrawals, pay maturity obligation in time and convert non-assets into cash to satisfy immediate needs without loss to bank and consequent impact on long-run profit. Liquidity ratio is mainly used to analyze the short-term strength of commercial banks.

**A. Analysis of Current Ratio:** This ratio measures the liquidity position of the commercial banks. It indicates the ability of Banks to meet the current liquidity.

**Table No. 4.2**  
**Current Assets to Current Liabilities (in times)**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	C.A	C.L	Ratio	C.A	C.L	Ratio
2062/2063	29373.64	26995.48	1.09	14958.88	26635.48	0.56
2063/2064	33084.07	30644.39	1.08	28998.22	30284.39	0.96
2064/2065	35456.46	32785.97	1.08	33115.88	31925.97	1.04
2065/2066	38449.53	35181.35	1.09	33977.61	34681.35	0.98
2066/2067	41743.99	38111.20	1.09	36939.76	37611.20	0.98
Mean	1.086			0.904		
S.D	0.0005			0.1946		
C.V	0.0005			0.2153		

*Sources: Appendix-1*

Above Table shows the current ratio of selected commercial banks during the study period. The current ratio of HBL and BOKL is fluctuating trend. In general, it can be said that both the banks have sound ability to meet their term obligations. In the case of HBL, the C.R has high in 2062/2063, 2065/2066 and 2066/2067 i.e. 1.09 and BOKL has high in 2064/2065 i.e. 1.04. In an average, liquidity position of HBL is

greater than BOKL i.e.  $1.086 > 0.904$ , due to high mean ratio. So, HBL is sound in meeting short-term obligation than BOKL. Likewise, S.D. and C.V. of HBL is less than BOKL i.e.  $0.0005 < 0.1946$  and  $0.0005 < 0.2153$ . It can be said that C.R. of HBL is more consistent than BOKL.

**B. Cash and Bank Balance to Total Deposit Ratio:** Cash and Bank Balance to Total Deposit Ratio indicates the bank ability to meet their daily requirement of depositors. Higher ratio shows the greater ability of the firms to meet customer demands on their deposits. Following table shows cash and bank balance to total deposit of HBL and BOKL during the study period.

**Table No. 4.3**  
**Cash and Bank Balance to Total Deposit Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Cash and Bank Balance	Total Deposit	Ratio	Cash and Bank Balance	Total Deposit	Ratio
2062/2063	1717.35	26490.85	0.065	728.70	10485.36	0.069
2063/2064	1757.34	30048.42	0.058	1315.90	12388.93	0.106
2064/2065	1448.14	31842.79	0.045	1440.47	15833.74	0.091
2065/2066	3048.53	34682.31	0.088	2182.11	18083.98	0.121
2066/2067	3866.49	37611.20	0.103	1798.37	20135.83	0.089
Mean	0.072			0.095		
S.D	0.0234			0.0195		
C.V	0.325			0.205		

*Sources: Appendix-2*

Above table shows that the Cash and Bank Balance to Total Deposit Ratio of HBL and BOKL have fluctuating trend. The highest ratio of HBL is a 0.103 times in year 2066/2067 and lowest is 0.045 times in Year 2064/2065. Similarly, the highest ratio of BOKL is 0.121 times in year 2065/2066 and lowest is 0.069 times in 2062/2063. The mean ratio of HBL and BOKL are 0.072 times and 0.095 times respectively.

BOKL has higher ratio than the HBL, which shows its greater ability to pay depositors money as they want. Similarly, the coefficient of variation of HBL is 0.325 times and BOKL is 0.205 times. S.D of BOKL is lower than HBL.

**C. Cash and Bank Balance to Current Assets Ratio:** Cash and Bank Balance are the most liquid or quick assets. Cash and bank balance to current assets ratio represents the liquidity capacity of the firms as per cash and bank balance. Higher the ratios, better the ability of the firms to meet the daily cash requirement of their customers. But high ratio is not so preferred to the firms because firms have to manage the cash and bank balance to current asset ratio in such manner that firm may not be paid interest on deposit and may not have liquidity crises.

Following the states the cash and bank balance to current assets HBL and BOKL during the study period.

**Table No. 4.4**  
**Cash and Bank Balance to Current Assets Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Cash and Bank Balance	Current Assets	Ratio	Cash and Bank Balance	Current Assets	Ratio
2062/2063	1717.35	29373.64	0.058	728.70	14958.88	0.049
2063/2064	1757.34	33084.07	0.053	1315.90	28998.22	0.045
2064/2065	1448.14	35456.46	0.041	1440.47	33115.88	0.043
2065/2066	3048.53	38449.53	0.079	2182.11	33977.61	0.064
2066/2067	3866.49	41743.99	0.093	1798.37	36939.76	0.049
Mean	0.065			0.050		
S.D	0.0209			0.0082		
C.V	0.322			0.164		

*Sources: Appendix-3*

Above table reveals that cash and bank balance to current ratio of HBL and BOKL have fluctuating trend. The mean ratio of HBL and BOKL are 0.065times and 0.050

times respectively. The higher mean ratio shows HBL liquidity position is better than that of BOKL. Moreover, the S.D. and C.V. of HBL is higher than BOKL i.e.  $0.0209 > 0.0082$  and  $0.322 > 0.164$ . The higher C.V. of HBL indicates that it has more inconsistency in the ratios in comparison to BOKL.

**D. Investment of Government Securities to Current Assets Ratio:** This ratio examines that portion of a commercial bank's current assets, which is invested on different government securities. More or less, each commercial bank is interested to invest their collected funds on different securities issued by government in different times to utilize their excess funds and for other purpose. Although those securities can be sold easily in the financial market or they can be converted into cash, they are liquid assets like cash and bank balance. It shows the portion of current assets to banks that are invested on various securities. Government securities are the more secured investment alternatives. These securities are also called riskless investment but less return in generated than others risky assets.

**Table No. 4.5**  
**Investment on Government Securities to Current Assets Ratio**  
(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Govt securities	Current Assets	Ratio	Govt securities	Current Assets	Ratio
2062/2063	4577.66	29373.64	0.156	2146.62	14958.88	0.144
2063/2064	6079.38	33084.07	0.184	2332.04	28998.22	0.080
2064/2065	7166.53	35456.46	0.202	2113.22	33115.88	0.064
2065/2066	3907.34	38449.53	0.102	1744.98	33977.61	0.051
2066/2067	3455.03	41743.99	0.083	2954.93	36939.76	0.080
Mean	0.145			0.084		
S.D	0.0514			0.0036		
C.V	0.354			0.043		

*Sources: Appendix-4*

Above table shows investment on government securities to current assets ratio of HBL and BOKL. Both banks have fluctuating type ratios. The table show the highest ratio of HBL is 0.202 times in year 2064/2065 and lowest is 0.083 times in year 2066/2067. In the same way, the highest ratio of BOKL is 0.144 times in year 2062/2063 and lowest is 0.05 times in year 2065/2066.

The mean ratio of HBL is 0.145 i.e. 14.5 percent which is higher than the mean of BOKL 0.084 i.e. 8.4 percent. It means HBL has invested more money in risk free assets than that of BOKL. Similarly, S.D. is 0.0514 and 0.0036 and C.V. is 0.354 and 0.043 of HBL and BOKL. The higher C.V of HBL shows the more inconsistency in the ratios with compare to BOKL.

**4.1.1.2 Assets Management Ratio:** A commercial bank must be able to manage its assets very well to earn high profit, so to satisfy its customers and for own existence. Assets management ratio measures how efficiently the bank manages the resources at its commands. Through following ratios, assets management ability of banks has been measured.

**A. Loans and Advance to Total Deposit Ratio:** This ratio actually measures the extent to which the banks are successful to mobilize the total deposit on loan and advances for the purpose of profit generation. A higher ratio of loan and advances indicates better mobilization of collection deposit and vice-versa. But it should be noted that too high ratio might not be better from its liquidity point of view. Following Tables shows the loan and advances to total deposit ratio of related banks.

**Table No. 4.6**  
**Loan and Advance to Total Deposit Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Loan and Advance	Total Deposit	Ratio	Loan and Advance	Total Deposit	Ratio
2062/2063	15761.98	26490.85	0.595	7488.70	10485.36	0.714
2063/2064	17793.72	30048.42	0.592	9694.10	12388.93	0.782

2064/2065	20179.61	31842.79	0.634	12747.72	15833.74	0.805
2065/2066	25519.52	34682.31	0.736	14945.72	18083.98	0.826
2066/2067	29123.23	37611.20	0.774	17044.30	20135.83	0.846
Mean	0.606		0.795			
S.D	0.0838		0.0510			
C.V	0.126		0.064			

*Sources: Appendix-5*

Above table shows that the loan and advances to total deposits ratio of HBL and BOKL. HBL bank is in increasing trend total investment to total deposit ratio except in year 2063/2064 where as BOKL is in increasing trend total investment to total deposit ratio. The mean ratio of HBL and BOKL are 66.6% and 79.5% respectively. So BOKL has higher ratio than that of HBL. It reveals that the deposit of BOKL is quickly converted into loan and advances to earn income. According to NRB directives above 70% to 90% of loan and advances to total deposit ratio is able to better mobilization of collected deposit. So all the year the BOKL has met the NRB requirement or it has utilized its deposit to provide loan. But HBL has not met the NRB requirement or it has not utilized its deposit to provide loan properly except in the year 2065/2066 and 2066/2067. The mean, S.D and C.V of HBL is 0.666, 0.0.838 and 0.126. Similarly, BOKL has 0.795, 0.0510 and 0.064.

- B. Total Investment to Total Deposit Ratio:** Commercial banks and financial companies invest their collected funds in various government securities and other financial or non-financial companies. This ratio measures how successfully and efficiently the banks are mobilizing their funds on investment in various securities. This ratio of HBL and BOKL are calculated and presented in below.

**Table No. 4.7**  
**Total Investment to Total Deposit Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Total Investment	Total Deposit	Ratio	Total Investment	Total Deposit	Ratio
2062/2063	10890.37	26490.85	0.411	3378.13	10485.36	0.322
2063/2064	11822.98	30048.42	0.393	2995.19	12388.93	0.242
2064/2065	13340.18	31842.79	0.419	3206.83	15833.74	0.203
2065/2066	8710.69	34682.31	0.251	2786.36	18083.98	0.154
2066/2067	8444.91	37611.20	0.225	3269.20	20135.83	0.162
Mean	0.340			0.217		
S.D	0.0939			0.0686		
C.V	0.276			0.316		

*Sources: Appendix-6*

Above table shows that total investment to total deposit ratio of HBL and BOKL. HBL bank has fluctuating trend total investment to total deposit ratio where as BOKL has decreasing trend total investment to total deposit ratio except in the year 2066/2067. Highest ratio of HBL is 41.9 % in year 2064/2065 and lowest ratio is 22.5% in year 2066/2067. Similarly the highest ratio of BOKL is 32.2% in year 2062/2063 and lowest ratio is 15.4% in year 2065/2066. Investment volume of BOKL is lower than that of HBL because more funds of BOKL were used in profitable loans to achieve optimum mix of interest earning assets.

The mean of the ratio of HBL and BOKL are 34% and 21.7% respectively so HBL has higher ratio. It signifies HBL has successfully allocated its deposit in investment portfolio.

The standard deviation of HBL is 0.0939 and BOKL is 0.0686.

The C.V. of BOKL is higher than HBL i.e. 0.316 > 0.276. So BOKL seems to be more consistency.

**C. Loan and Advance to Total Assets Ratio:** A commercial bank's working fund plays very active role in profit generation through fund mobilization. This ratio reflects the extent to which the banks are successful in mobilizing their total assets on loan and advance for the purpose of income generation. A high ratio indicates better mobilization of funds as loan and advance and vice-versa. The following table shows loan and advances to total assets of HBL and BOKL as follows.

**Table No. 4.8**  
**Loan and Advance to Total Assets Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Loan and Advance	Total Asset	Ratio	Loan and Advance	Total Asset	Ratio
2062/2063	15761.98	29460.39	0.535	7488.70	12278.33	0.610
2063/2064	17793.72	33519.14	0.531	9694.10	14581.39	0.665
2064/2065	20179.61	36175.53	0.558	12747.72	17721.93	0.719
2065/2066	25519.52	39320.32	0.649	14945.72	20496.01	0.729
2066/2067	29123.23	42717.12	0.682	17044.30	23396.19	0.729
Mean	0.591			0.690		
S.D	0.0455			0.0522		
C.V	0.077			0.076		

*Sources: Appendix-7*

Above table shows the loan and advances to total assets ratio of HBL and BOKL during the study period. Loan and advances to total assets of HBL has increasing trend except in 2063/2064 and BOKL is in increasing trend. While observing their ratios; BOKL is better mobilizing of fund as loan and advances and it seems quite successful in generating the higher ratio in each year. The mean of HBL and BOKL are 59.1% and 69% respectively. So BOKL has higher ratio than that of HBL. It reveals that in total assets, BOKL has high proportion of loan and advances. BOKL has utilized its total assets more efficiently in the form of loan and advances. The

higher C.V of HBL states that it has less uniformity in these ratios throughout the study period than that of BOKL.

**D. Investment on Government Securities to Total Assets Ratio:** It is not possible to apply all collection, deposit and other resources in to loan and advances for the banks. Therefore, they arrange their total assets in various sectors. Among all possible sectors, investment on government securities is one, which is very less risky. Invest on government securities to total assets ratio measures how successfully selected banks have applied their total assets on various forms of government securities in profit maximization and risk minimization point of view. The higher ratio represents the better position of fund mobilization into investment on government securities and vice-versa.

**Table No. 4.9**  
**Investment on Government Securities to Total Assets Ratio**  
(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Govt. securities	Total Asset	Ratio	Govt. securities	Total Asset	Ratio
2062/2063	4577.66	29460.39	0.155	2146.62	12278.33	0.175
2063/2064	6079.38	33519.14	0.181	2332.04	14581.39	0.160
2064/2065	7166.53	36175.53	0.198	2113.22	17721.93	0.119
2065/2066	3907.34	39320.32	0.099	1744.98	20496.01	0.085
2066/2067	3455.03	42717.12	0.081	2954.93	23396.19	0.126
Mean	0.143			0.133		
S.D	0.0510			0.0355		
C.V	0.357			0.267		

*Sources: Appendix-8*

Above table shows that the investment on government securities to total assets of HBL and BOKL during the study period. Investment on Government Securities to Total Assets of HBL is in increasing trend except in the year 2065/2066 and 2066/2067 and BOKL is in decreasing trend except in the year 2065/2066. The

highest ratio of HBL and BOKL are 19.8% in 2064/2065 and 17.5% in 2062/2063. The lowest ratio of HBL and BOKL are 8.1% and 8.5% in 2066/2067 and 2065/2066. From the table we notice that mean ratio of HBL and BOKL are 14.3% and 13.3% respectively. The mean of HBL has higher than BOKL. It means HBL has invested more money in risk free assets than that of BOKL. In another words BOKL has emphases on more loan and advances and other short-term investment that investment in govt. securities. For minimization of investment risk, BOKL should divert its investment in govt. securities.

There is more variability in the ratio of HBL as compare to BOKL. It shows there is more inconsistent in the ratio of HBL during the study period, which is indicated by higher C.V. of HBL. But there is inconsistent in its investment.

**4.1.1.3 Profitability Ratio:** The major performance indicator of any firm is profit. The objective of investment policy is to make good return. Any organization has to desire of earning high profited which helps to survive the firm and indicates the efficient operation of the firm. Profit is the essential part of business activities to meet internal obligation, overcome the future contingencies, make a good investment policy, expand the banking transaction etc.

Profitability ratios are the best indicators of overall efficiently. Here, those ratios are presented and analyzed which are related with profit as well as fund mobilization. Through the following ratios, effort has been made to measure the profit earning capacity of HBL and BOKL.

**A. Return of Loan and Advances:** Every financial institution tires to mobilize their deposits on loan and advances properly. So this ratio helps to measure the earning capacity of selected banks. Returns on loan and advances ratio of selected banks are presented as follows.

**Table No. 4.10**  
**Return of Loan and Advances**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Net Profit	Loan and Advance	Ratio	Net Profit	Loan and Advance	Ratio
2062/2063	457.46	15761.98	0.029	202.44	7488.70	0.027
2063/2064	491.82	17793.72	0.028	262.39	9694.10	0.027
2064/2065	635.87	20179.61	0.032	361.50	12747.72	0.028
2065/2066	752.83	25519.52	0.030	461.73	14945.72	0.031
2066/2067	508.80	29123.23	0.017	509.26	17044.30	0.030
Mean	0.027			0.029		
S.D	0.0059			0.0022		
C.V	0.219			0.076		

*Sources: Appendix-9*

Above table shows that return on loan and advances ratio of HBL is in increasing trend except in 2065/2066 and 2066/2067 where as BOKL is in increasing trend except in 2066/2067. The highest ratio of HBL is 3.2% in the year 2064/2065 and lowest ratio is 1.7% in 2066/2067. The mean ratio is 2.7%. Whereas highest ratio of BOKL is 3.1% in year 2065/2066 and lowest ratio is 2.7% in year 2062/2063 and 2063/2064. The mean ratio is 2.9%. This both banks show the normal earning capacity in loan and advances and same earning capacity in form of loan and advances.

From the table we notice that HBL has higher ratios in preceding three years and BOKL has higher ratios in subsequent in two years and both banks have nearly equal mean ratio. It can be concluded that both banks have utilized the loan and advances for the profit generation in same earning capacity.

- B. Return of Total Assets Ratio:** This ratio measures the overall profitability of all working fund i.e. Total assets. A firm has to earn satisfactory return on working funds

for its survival. The following table shows return on total assets ratio of selected banks.

**Table No. 4.11**  
**Return of Total Assets**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Net Profit	Total Asset	Ratio	Net Profit	Total Asset	Ratio
2062/2063	457.46	29460.39	0.016	202.44	12278.33	0.016
2063/2064	491.82	33519.14	0.015	262.39	14581.39	0.018
2064/2065	635.87	36175.53	0.018	361.50	17721.93	0.020
2065/2066	752.83	39320.32	0.019	461.73	20496.01	0.023
2066/2067	508.80	42717.12	0.012	509.26	23396.19	0.022
Mean	0.016			0.020		
S.D	0.0027			0.0029		
C.V	0.169			0.145		

*Sources: Appendix-10*

Above table shows the return on total assets of HBL and BOKL. This table states the net profit to total assets of selected bank during the study period. HBL and BOKL are in fluctuating trend. However, BOKL seems successful in managing and utilizing the available assets in order to generate revenue since its ROA is 2.0% of total assets in an average which is higher than that of HBL. The S.D and C.V of HBL are 0.0027 and 0.169 and 0.0029 and 0.145 of BOKL.

- C. Total Interest Earned to Total Assets Ratio:** Total interest earned to total assets ratio evaluates how successful the selected bank are mobilizing their total assets to achieve high amount of interest. Higher the ratio indicates the higher interest income of the selected sample banks. The total interest earned to total assets ratio of HBL and BOKL.

**Table No. 4.12**  
**Total Interest Earned to Total Assets Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Interest Earned	Total Asset	Ratio	Interest Earned	Total Asset	Ratio
2062/2063	1626.47	29460.39	0.055	718.22	12278.33	0.058
2063/2064	1775.58	33519.14	0.053	819.00	14581.39	0.056
2064/2065	1963.65	36175.53	0.054	1034.16	17721.93	0.058
2065/2066	2342.20	39320.32	0.060	1347.76	20496.01	0.066
2066/2067	3148.61	42717.12	0.074	1870.85	23396.19	0.080
Mean	0.059			0.064		
S.D	0.0087			0.0099		
C.V	0.147			0.155		

*Sources: Appendix-11*

Above table shows both have fluctuating condition of total interest earned during studied period. The average mean ratio of interest earned to total asset ratio of HBL is 5.9% and BOKL is 6.4% respectively. The mean ratio of BOKL is more than that of HBL. In comparison, BOKL seems effective in earning interest to some extent. Moreover, BOKL also has higher uniformity in the ratios during the study period due to high C.V. it can be concluded that BOKL has successfully mobilized their fund in interest generating assets but inconsistently.

**D. Total Interest Earned to Operating Income Ratio:** Total interest earned to total operating income ratio reveals that portion of interest income on total operating income of the firms. The major sources of income for the bank are interest income so the banks should mobilize their funds in more interest generating sectors considering the risk and return. This ratio measure how successfully the selected banks have been mobilizing their fund uninterested generating assets during last from Y 2062/63 to 2066/67 are presented to analyze in the following table. The major sources of income

for the bank are interest income. So the banks should mobilize their funds in more interest generating sectors considering the risk and return.

**Table No. 4.13**  
**Interest Earned to Operating Income Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Interest Earned	Operating Income	Ratio	Interest Earned	Operating Income	Ratio
2062/2063	1626.47	1393.53	1.167	718.22	576.66	1.245
2063/2064	1775.58	1393.36	1.274	819.00	677.08	1.210
2064/2065	1963.65	1597.50	1.229	1034.16	862.96	1.198
2065/2066	2342.20	1988.05	1.178	1347.76	1114.82	1.209
2066/2067	3148.61	2157.96	1.459	1870.85	1342.70	1.393
Mean	1.261			1.251		
S.D	0.1185			0.0813		
C.V	0.094			0.065		

*Sources: Appendix-12*

Above table shows interest earned to operating income ratio of HBL and BOKL. Both banks have fluctuating ratio of study period. The mean ratio of HBL and BOKL are 1.261 times and 1.251 times respectively. HBL has higher ratio, it indicates the high contribution in operating income made by lending and investing activities. BOKL has lower ratio, it indicates that high contribution in operating income do not made by lending and investing activities. High contribution in operating income made by lending and investing activities is not good for long run but in short run it is not so bad. Thus, from short term view, HBL is in good condition but from long term view, BOKL is in good condition. The mean, S.D and C.V. of HBL are 1.261, 0.1185 and 0.094 times similarly BOKL have 1.251, 0.0813 and 0.065 times.

**E. Total Interest Paid to Total Assets Ratio:** Total interest paid to total assets ratio help to show and measure the percentage of interest paid by the firm in comparison with total assets. If interest paid to total assets ratio is higher, there will be higher

interest expenditure on total assets. The following table shows that total interest paid to total assets of HBL and BOKL.

**Table No. 4.14**  
**Interest Paid to Total Assets Ratio**

(in millions)

Year	Himalayan Bank Limited			Bank of Kathmandu Limited		
	Interest Paid	Total Asset	Ratio	Interest Paid	Total Asset	Ratio
2062/2063	648.84	29460.39	0.022	308.16	12278.33	0.025
2063/2064	767.41	33519.14	0.023	339.18	14581.39	0.023
2064/2065	823.74	36175.53	0.023	417.54	17721.93	0.024
2065/2066	934.78	39320.32	0.024	563.11	20496.01	0.027
2066/2067	1553.53	42717.12	0.036	902.93	23396.19	0.039
Mean	0.026			0.028		
S.D	0.0059			0.0066		
C.V	0.227			0.236		

*Sources: Appendix-13*

Due to the higher ratio in each of BOKL, it seems less conscious about borrowing cheaper fund. HBL show s the increasing trend of the interest paid to total asset ratio, its average ratio is 2.6% where as BOKL is in fluctuating trend and it has maintained average ratio is 2.8%. In comparison, BOKL seems ineffective in getting cheaper fund from the mean point of view. The S.D. and C.V. of BOKL is greater than the HBL it indicate high risk and insignificant of BOKL than HBL.

**4.2 Statistical Analysis:** For the third objective of the study stoical tools is analyzed. Statistical tool is one of the important tools to analyze the data. There are various tools for the analysis of tabulated data such as, mean, standard deviation, regression analysis, co-relation analysis, trend analysis, various types of tests etc. There is convenient statistical tools are used in this thesis study.

**4.2.1 Coefficient of Correlation Analysis:** Coefficient of correlation shows the relationship between two or more than two variables. It measures that the two

variables are positively or negatively co-related. For this purpose, Karl Pearson's coefficient of correlation has been taken and applied to find out and analyze the relationship between deposit and loan and advances, deposit and total investment, total assets and net profit, total investment and net profit and also analyze the correlation of total deposit, total investment, loan and advances and net profit. HBL and BOKL using Karl Pearson's coefficient of correlation, value of coefficient of determination ( $R^2$ ) probable error (P.Er.) and (6 P.Er.) are also calculated and value of them are analyzed.

**A. Correlation Coefficient between Total Deposit and Loan and Advances:** Deposit have played very important role in performance of a commercial banks and similarly loans and advances are very important to mobilize the collected deposits. Coefficient of correlation between deposit and loan and advances measures the degree of relationship between these two variables. In this analysis, total deposit is independent variable (X) and loan and advances are dependent variable (Y). The main objectives of computing 'r' between these two variables are to justify whether total deposit are significantly used as loan and advances in proper way or not. The following table shows the 'r',  $R^2$ , P.Er. and 6 P.Er. between those variables of HBL and BOKL for the study period.

**Table No. 4.15**  
**Correlation between Total Deposit and Loan and Advances**

Bank	Evaluation Criteria				
	r	$R^2$	P.Er.	6 P.Er.	Remarks
<b>HBL</b>	0.988	0.976	0.072	0.0432	Significant
<b>BOKL</b>	0.999	0.998	0.0006	0.0036	Significant

*Sources: Appendix-14*

From the above table, it is found that coefficient of correlation between total deposit and loan and advances of HBL and BOKL are 0.988 and 0.999. It shows that both have the positive relationship between two variables. Moreover, the coefficient of determination of HBL is 0.976. It means 97.60 percent of variation in loan and advances has been explained by deposit. Similarly, value of coefficient of

determination of BOKL is 0.998. It means 99.8 percent variance in loan and advances are affected by total deposit. The correlation of coefficient of both banks is significant because of correlation coefficient is greater than the relative value of 6 P.Er. In other words, there is significant relationship between deposits and loan and advances.

**B. Correlation Coefficient between Total Deposit and Total Investment:** The coefficient of correlation between total deposit and investment measures the degree of relationship between these two variables or deposit is significantly utilized or not. In correlation analysis, total deposit is independent variable (X) and total investment is dependent variable (Y). The main objectives of computing 'r' between these two variables are to justify whether total deposit are significantly used as total investment in proper way or not. The following table shows the 'r', R<sup>2</sup>, P.Er. and 6 P.Er. between those variables of HBL and BOKL for the study period.

**Table No. 4.16**  
**Correlation between Total Deposit and Total Investment**

Bank	Evaluation Criteria				
	r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
<b>HBL</b>	-0.626	0.392	0.183	1.098	Insignificant
<b>BOKL</b>	-0.278	0.077	0.278	1.668	Insignificant

*Sources: Appendix-15*

From the above table, it is found that coefficient of correlation between total deposit and total investment of HBL is -0.626. It shows negative correlation. In addition, coefficient of determination of HBL is 0.392. It means only 39.2 percent of total investment is explained by total deposit. The correlation coefficient is insignificant because the correlation coefficient is lower than 6 P.Er. It refers that there is no significant relationship between total deposit and total investment of HBL.

Similarly, the coefficient of correlation between total deposit and total investment of BOKL is -0.278. It shows negative correlation. Coefficient of determination of BOKL is 0.077. It means only 7.7 percent of total investment is explained by total deposit. The correlation of coefficient is insignificant because correlation coefficient is less

than 6 P.Er. It refers that there is no significant relationship between total deposit and total investment of BOKL.

**C. Correlation Coefficient between Loan and Advance and Net Profit:** Coefficient of correlation between total assets and net profit is used to measure the degree of relationship between two variable i.e. Loan and advance and net profit of HBL and BOKL during the study period. Where loan and advance is independent variable (X) and net profit is dependent variable (Y). The main objective of calculating this ratio is to determine the degree of relationship whether there the net profit is significantly correlated or not and the variation of net profit to loan and advance through the coefficient of determination. The following table shows the 'r', R<sup>2</sup>, P.Er. and 6 P.Er. between those variables of HBL and BOKL for the study period.

**Table No. 4.17**  
**Correlation between Loan and Advance and Net Profit**

Bank	Evaluation Criteria				
	r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
<b>HBL</b>	0.415	0.172	0.250	1.500	Insignificant
<b>BOKL</b>	0.996	0.992	0.0024	0.0144	Significant

*Sources: Appendix-16*

From the above table, it is found that coefficient of correlation between loan and advance and net profit of HBL is 0.415. It shows moderate positive correlation. In addition, coefficient of determination of HBL is 0.172. It means only 17.2 percent of net profit is contribute by loan and advance. The correlation coefficient is insignificant because the correlation coefficient is lower than 6 P.Er. It refers that there is no significant relationship between loan and advance and net profit t of HBL.

Similarly, the coefficient of correlation between loan and advance and net profit of BOKL is 0.996. It shows highly positive correlation. Coefficient of determination of BOKL is 0.077. It means only 7.7 percent of net profit is explained by loan and advance. The correlation of coefficient is significant because correlation coefficient is

higher than 6 P.Er. It refers that there is significant relationship between loan and advance and net profit of BOKL.

**D. Correlation Coefficient between Total Investment and Net Profit:** Coefficient of correlation between total investment and net profit measures the degree of their relationship. In the, correlation analysis, investment is independent variable (X) and net profit is dependent variable (Y). The main objective of calculating this ratio is to determine the degree of relationship whether there the net profit is significantly correlated or not and the variation of net profit to total investment through the coefficient of determination. The following table shows the 'r', R<sup>2</sup>, P.Er. and 6 P.Er. between those variables of HBL and BOKL for the study period.

**Table No. 4.18**  
**Correlation between Total Investment and Net Profit**

Bank	Evaluation Criteria				
	r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
<b>HBL</b>	-0.158	0.025	0.294	1.764	Insignificant
<b>BOKL</b>	-0.537	0.288	0.215	1.290	Insignificant

*Sources: Appendix-17*

From the above table, it is found that coefficient of correlation between total investment and net profit of HBL is -0.158. It shows negative correlation. In addition, coefficient of determination of HBL is 0.025. It means only 2.5 percent is contribute by total investment. The correlation coefficient is insignificant because the correlation coefficient is lower than 6 P.Er. It refers that there is no significant relationship between total deposit and total investment of HBL.

Similarly, the coefficient of correlation between total investment and net profit of BOKL is -0.537. It shows negative correlation. Coefficient of determination of BOKL is 0.288. It means only 28.8 percent of net profit is contribute by total investment. The correlation of coefficient is insignificant because correlation coefficient is less than 6

P.Er. It refers that there is no significant relationship between total deposit and total investment of BOKL.

- E. Correlation Coefficient of Total Deposit between HBL and BOKL:** Coefficient of correlation of total deposit between HBL and BOKL and shows their linear relationship.

**Table No. 4.19**  
**Correlation between Total Deposit of HBL and BOKL**

Evaluation Criteria				
r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
0.984	0.968	0.0096	0.0576	Significant

*Sources: Appendix-18*

The above table shows how the total deposit of both banks HBL and BOKL is related. Here correlation between the total deposit of HBL and BOKL is 0.984. Above correlation coefficient shows that there is highly positive correlation between this two banks. But this correlation coefficient is also significant because the correlation coefficient is high than 6 P.Er. As the 0.968 of coefficient of determination, this shows the 96.8 percent of the degree of relationship. The degree of relationship between these two banks is also high.

- F. Correlation Coefficient of Total Investment between HBL and BOKL:** Coefficient of correlation of total investment between HBL and BOKL and shows their linear relationship.

**Table No. 4.20**  
**Correlation between Total Investment of HBL and BOKL**

Evaluation Criteria				
r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
0.238	0.057	0.2846	1.710	Insignificant

*Sources: Appendix-19*

Above statistics shows that there is moderate positive correlation between total investment of HBL and BOKL in case of total investment. It implies that the total investment of HBL and BOKL move in the same direction. Here  $R^2 < P.Er.$

Therefore, correlation coefficient is not significant. This can be said that both HBL and BOKL increase its total investment. The coefficient of determination is 0.057, which shows the only 5.7 percent of the degree of relationship.

- G. Correlation Coefficient of Loan Advances between HBL and BOKL:** Coefficient of correlation of loan and advances between HBL and BOKL and shows their linear relationship.

**Table No. 4.21**  
**Correlation between Loan and Advances of HBL and BOKL**

Evaluation Criteria				
r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
0.990	0.980	0.0060	0.036	Significant

*Sources: Appendix-20*

Above table shows that there is high degree positive correlation between the loan and advances of HBL and BOKL. The correlation coefficient between two banks is 0.990. It means loan and advances of these two banks moves in the same direction in high proportion. This correlation coefficient is significant in order to show the relationship between loan and advances of two banks because correlation coefficient is greater than 6 P.Er. The coefficient of determination is 0.980 which shows the 98.0 percent of the degree of relationship.

- H. Correlation Coefficient of Net profit between HBL and BOKL:** Coefficient of correlation of net profit between HBL and BOKL and shows their linear relationship.

**Table No. 4.22**  
**Correlation between Net Profit of HBL and BOKL**

Evaluation Criteria				
r	R <sup>2</sup>	P.Er.	6 P.Er.	Remarks
0.550	0.303	0.2104	1.2624	Insignificant

*Sources: Appendix-21*

The above statistics shows that there is moderate positive correlation between HBL and BOKL in case of net profit. It implies that the net profit of HBL and BOKL move in same direction. Here  $R^2 < 6$  P.Er. Therefore, correlation coefficient is not

significant. This can be said that both HBL and BOKL increase its net profit. The coefficient of determination is 0.303, which shows the only 30.3 percent of the degree of relationship.

**4.2.2 Time Analysis (Trend Analysis):** Trend analysis plays an important role in the analysis and interpretation of financial statement. Trend in general terms, signifies a tendency. It helps in forecasting and planning future operation. Trend analysis is a statistical tool, which shows the previous trend of the financial performance and forecasts the future financial results of the firms.

**A. Trend Analysis of Total Deposit:** Deposits are the important part in banking sector hence its trend for next five years will be forecasted for future analysis. This is calculated by the least square method. Here the effort has been made to calculate the trend values of Total Deposit of HBL and BOKL for five years.

$$Y = a + b x$$

Where,

Y = dependent variable, a = Y-intercept, b = slope of trend line or annual growth rate,

X = deviation from some convenient time periods.

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

Where  $x = X - \text{Middle year}$

Where as

$$Y_c = 32135.11 + 2687.459 X \text{ of HBL}$$

$$Y_c = 15385.57 + 2499.59 X \text{ of BOKL}$$

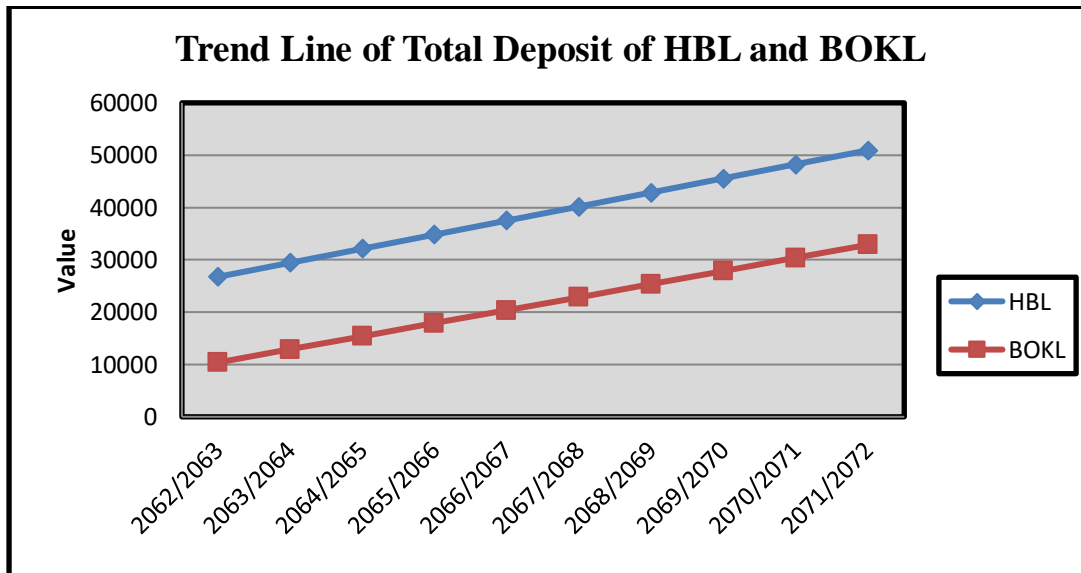
**Table No. 4.23** (in millions)

<b>Trend analysis of Total Deposit of HBL and BOKL</b>		
<b>Year (x)</b>	<b>HBL</b>	<b>BOKL</b>
2062/2063	26760.19	10386.37
2063/2064	29447.65	12885.97

2064/2065	32135.11	15385.57
2065/2066	34822.57	17885.17
2066/2067	37510.03	20384.77
2067/2068	40197.49	22884.37
2068/2069	42884.95	25383.97
2069/2070	45572.41	27883.57
2070/2071	48259.86	30383.16
2071/2072	50947.32	32882.76

Sources: Appendix-22

Figure No. 4.4



Above Table and figure shows that total deposit of HBL and BOKL. Both Banks is in increasing trend. Increase trend of both bank are parallel. The rate of increment of total deposit for HBL seems to be higher than that of BOKL. The trend analysis has projected deposit amount in year 2062/2063 to 2071/2072. From the above trend analysis it is clear that HBL is higher position in collecting deposit than BOKL.

**B. Trend Analysis of Loan and advances:** Here, the trend values of loan and advances between HBL and BOKL have been calculated for further five years. The following table shows the actual and trend values of HBL and BOKL.

$$Y = a + b x$$

Where,

Y = dependent variable, a = Y-intercept, b = slope of trend line or annual growth rate,

X = deviation from some convenient time periods.

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

Where  $x = X - \text{Middle year}$

Where as

$$Y_c = 21675.72 + 532.56 X \text{ of HBL}$$

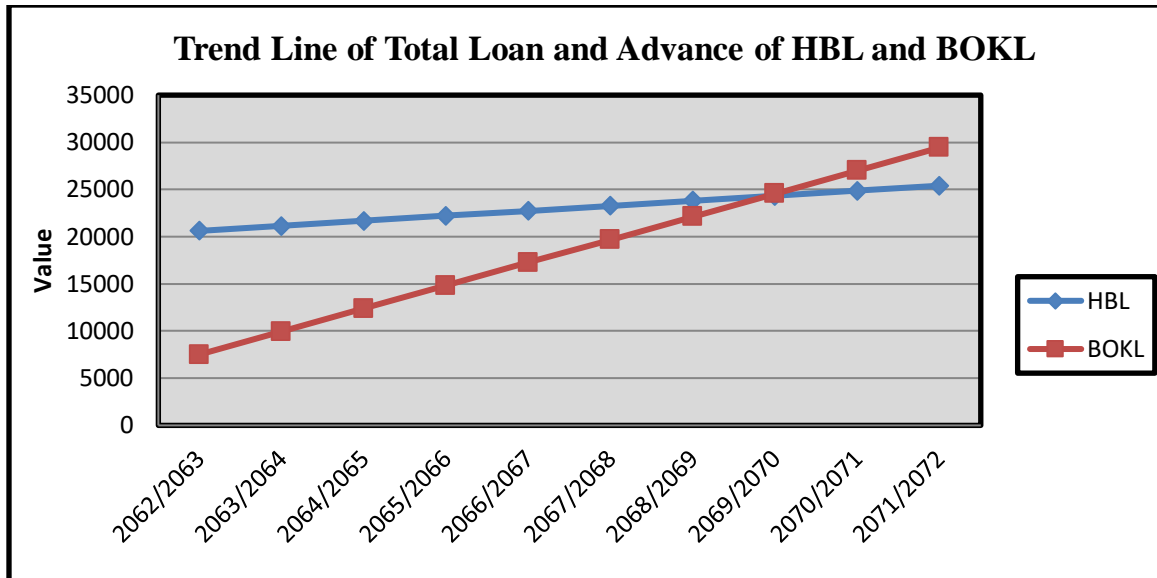
$$Y_c = 12384.11 + 2436.282 X \text{ of BOKL}$$

**Table No. 4.24** (in millions)

<b>Trend analysis of Loan and Advance of HBL and BOKL</b>		
<b>Year (x)</b>	<b>HBL</b>	<b>BOKL</b>
2062/2063	20610.6	7511.55
2063/2064	21143.16	9947.83
2064/2065	21675.72	12384.11
2065/2066	22208.28	14820.39
2066/2067	22740.84	17256.67
2067/2068	23273.4	19692.96
2068/2069	23805.96	22129.24
2069/2070	24338.52	24565.52
2070/2071	24871..8	27001.80
2071/2072	25403.64	29438.08

*Sources: Appendix-23*

**Figure No. 4.5**



Above Table and figure shows that total loan and advances of HBL and BOKL. Both banks have in increasing trend. The increasing trend of BOKL is higher and aggressive than HBL. The actual value of loan and advances for HBL is quite fluctuating in relation to BOKL. The trend projected for further five years year 2062/2063 to 2071/2072. From the above analysis, it is clear that both HBL and BOKL is mobilizing its collected deposits and other funds in the form of loan and advances. Above table and figure shows the BOKL has little highly mobilizing loan and advances than the HBL.

**C. Trend Analysis of Total Investment:** Under this topic, attempt has been made to analyze trend analysis total investment of HBL and BOKL fur further five years.

$$Y = a + b x$$

Where,

Y = dependent variable, a = Y-intercept, b = slope of trend line or annual growth rate,

X = deviation from some convenient time periods.

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

Where  $x = X - \text{Middle year}$

Where as

$$Y_c = 10641.83 - 800.321 X \text{ of HBL}$$

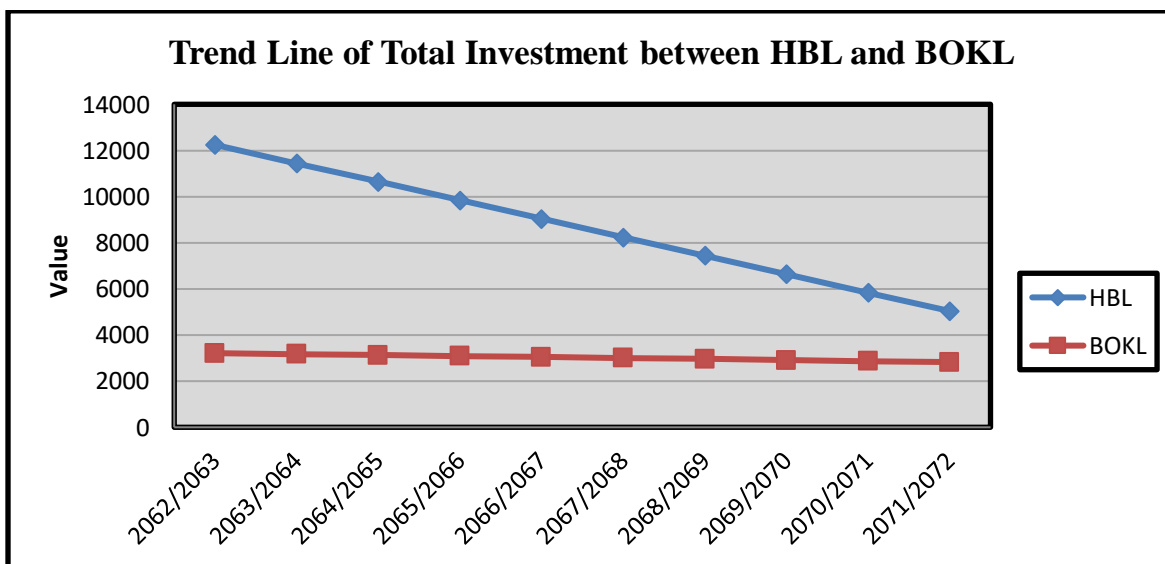
$$Y_c = 3127.14 - 42.669 X \text{ of BOKL}$$

**Table No. 4.25** (in millions)

<b>Trend analysis of Total Investment of HBL and BOKL</b>		
<b>Year (x)</b>	<b>HBL</b>	<b>BOKL</b>
2062/2063	12242.47	3212.48
2063/2064	11442.15	3169.81
2064/2065	10641.83	3127.14
2065/2066	9841.51	3084.47
2066/2067	9041.19	3041.80
2067/2068	8240.87	2999.13
2068/2069	7440.55	2956.46
2069/2070	6640.23	2913.80
2070/2071	5839.90	2871.13
2071/2072	5039.58	2828.46

*Sources: Appendix-24*

**Figure No. 4.6**



Above table shows the trend of total investment between HBL and BOKL. Both Bank HBL and BOKL have decreasing trend in making investment. HBL has more high

trend of decreasing but BOKL has little trend of decreasing of total investment. The trend of total investment projected from year 2062/2063 to 2071/2072.

**D. Trend Analysis of Net Profit:** Under this topic, attempt has been made to analyze trend analysis net profit of HBL and BOKL for further five years.

$$Y = a + b x$$

Where,

Y = dependent variable, a = Y-intercept, b = slope of trend line or annual growth rate,

X = deviation from some convenient time periods.

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

Where  $x = X - \text{Middle year}$

Where as

$$Y_c = 569.36 + 36.369 X \text{ of HBL}$$

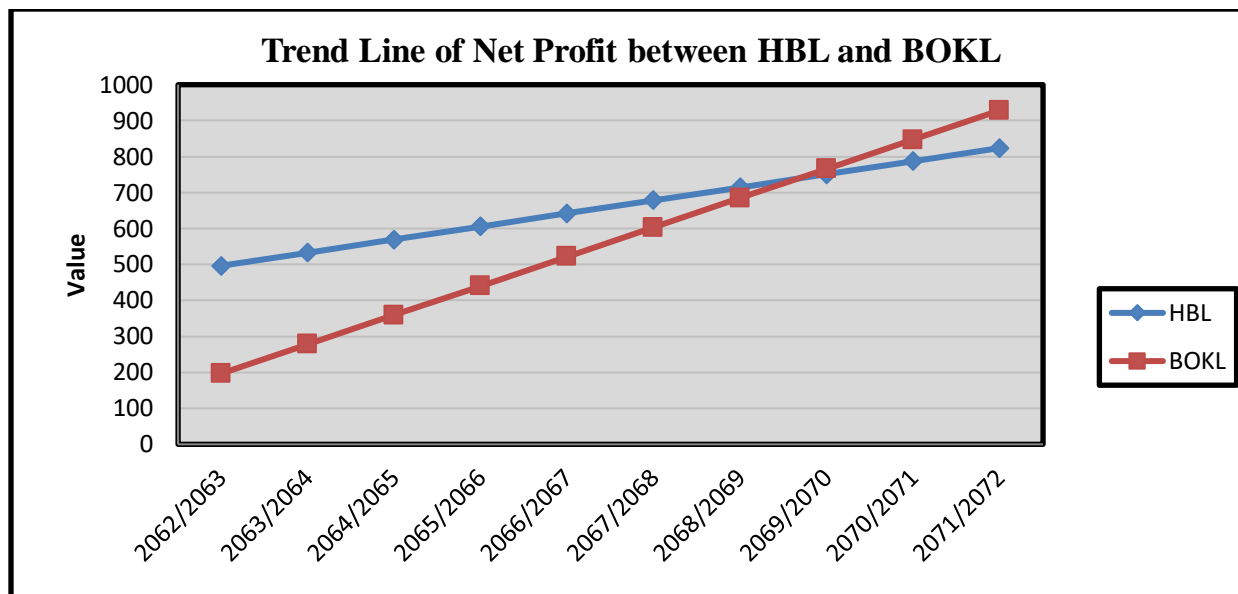
$$Y_c = 359.46 + 81.298 X \text{ of BOKL}$$

**Table No. 4.26** (in millions)

<b>Trend analysis of Net Profit of HBL and BOKL</b>		
<b>Year (x)</b>	<b>HBL</b>	<b>BOKL</b>
2062/2063	496.62	196.86
2063/2064	532.99	278.16
2064/2065	569.36	359.46
2065/2066	605.73	440.76
2066/2067	642.10	522.06
2067/2068	678.47	603.35
2068/2069	714.84	684.65
2069/2070	751.21	765.95
2070/2071	787.57	847.25
2071/2072	823.94	928.55

*Sources: Appendix-25*

**Figure No. 4.7**



The above table reveals the trend of Net profit of HBL and BOKL. Net profit both bank HBL and BOK forecasted in increasing trend. The trend of increasing value of net profit of HBL is higher than HBL except in the year 2069/2070 to 2071/2072. The net profit of HBL and BOKL has been increasing every year. The trend of net profit projected to year 2062/2063 to 2071/2072. Above statistics, shows that both the banks have consistent net profit throughout the study period. In conclusion, BOKL is doing better in order to generate net profit during the projected study period, though both HBL and BOKL have increasing trend.

### 4.3 Major Findings of the study

From the above research study, following findings are drawn on the liquidity position of the selected commercial banks.

1. The total deposit of HBL and BOKL is increasing trend over the study period. The average total deposit of HBL is Rs.32135.11 and Rs.15385.57 of BOKL. In comparison the HBL seems higher in deposit collection than the BOKL.
2. The investment of HBL and BOKL is fluctuating trend over the study. The average total investment of HBL is Rs. 10641.83 and Rs. 3127.14 of BOKL. In comparison the HBL seems higher in investment than the BOKL.

3. The liquidity position of HBL is in increasing trend except in the year 2064/6065 whereas BOKL is also in increasing trend except in the year 2066/6067 over the study period. The average amount of cash balance of HBL is Rs.2367.57 million and Rs.1493.11 million of BOKL.
4. Generally banks have to maintain more liquid assets but the current ratios of all banks are below the standard of 2.1. The mean current ratio of HBL is 1.086 and BOKL is 0.904. The current ratio of HBL is higher than BOKL. So, HBL is sound in meeting short-term obligation than BOKL.
5. Cash and bank balance to total deposit ratio of BOKL has higher than HBL i.e. 9.5 % >7.2 % which indicates that the bank has higher liquidity of BOKL as compare to HBL. A high ratio of cash and bank balance may be undesirable which indicates inability to investment in more productive sectors like short-term marketable securities insuring enough liquidity which will help the bank to improve its profitability. But the liquidity position is good.
6. Cash and bank balance to current assets ratio of HBL is little higher than BOKL i.e. 6.5 % >5.0 %. The higher mean ratio shows HBL's liquidity position is better than that of BOKL.
7. Investment on government securities to current assets of HBL is higher than BOKL i.e. 14.5 % >8.4 %. It shows HBL has investment more fund in government securities. BOKL has invested little portion of their funds in purchasing of government securities.
8. The loan and advances to total deposit ratio of HBL is lower than BOKL i.e. 60.6 % <79.5 %. It indicates the better mobilization of deposit by BOKL. So, BOKL is more efficiently utilizing the outsider's funds in extending credit for profit generating sectors.
9. The total investment to total deposit of HBL is higher than BOKL i.e. 34.0 % >21.7 %. It shows the HBL is mobilizing its funds on investment in various securities efficiently. It can be said that HBL is more successful in utilizing its total deposit by investing in marketable securities.

10. The loan and advances to total assets ratio of BOKL is greater than HBL i.e. 69.0 % >59.1 %. It refers BOKL has utilized its total assets more efficiently in the form of loan and advances with more risk because it has greater variability in the ratio.
11. Investment on government securities to total assets ratio of HBL is little higher than BOKL i.e. 14.3 % >13.3 %. This indicates that HBL has invested little more portions of total assets on government securities. The higher ratio of HBL shows that better fund mobilization.
12. Return on loan and advances of BOKL is higher than that of HBL i.e. 2.9 % >2.7 %. It refers that BOKL seems to be success to earn high profit on loan and advances. But the return is not consistent. Since both banks have small mean returns on its loan and advances.
13. Return on total assets ratio of BOKL is higher than HBL i.e. 2.0 % >1.6 %. But it has greater variability in the ratio. BOKL seems successful in managing and utilizing the available assets.
14. Total interest earned to total assets ratio of BOKL is higher than EBL i.e. 6.4 % >5.9 %. It indicates that BOKL has efficiently used its total assets to earn higher interest income in comparison to HBL and it is also stable in terms of interest earning.
15. Total interest earned to total operating income ratio of HBL is higher than BOKL i.e. 1.261 % >1.251 %. It means the greater portion of total operating income is occupied by total interest for HBL. It reveals HBL has successful mobilizing their fund in interest generating assets.
16. Total interest paid to total assets ratio of BOKL is higher than HBL i.e. 2.8 % >2.6%. it shows BOKL has high interest expenditure to total assets. It supports BOKL to increase to interest paid to operating income.
17. Both HBL and BOKL has high positive co-relation between total deposit and loan and advances because HBL and BOKL have 0.988 and 0.999 of co-relation coefficient between deposit and advances. These relationships are

- significant. This can be regarded as good indication in financial performance for the banks. The correlation coefficient of both bank is significant.
18. The coefficient of correlation between total deposit and total investment of HBL and BOKL are -0.625 and -0.278 which are not insignificant over the study period. Because correlation coefficient of both bank are lower than 6 P.Er.
  19. HBL has moderate positive co-relation where as BOKL has high positive co-relation between total deposit and loan and advances because HBL and BOKL have 0.415 and 0.996 of co-relation coefficient between deposit and advances. BOKL is significant because the correlation coefficient is higher than 6 P.Er. Whereas HBL is insignificant because the correlation coefficient is lower than 6 P.Er.
  20. The coefficient of correlation between total investment and net profit of HBL and BOKL are -0.158 and -0.537 which are not insignificant over the study. Because correlation coefficient of both bank are lower than 6 P.Er.
  21. The correlation of total deposit between HBL and BOKL is high because correlation coefficient between total deposit of these banks is 0.984. It means total deposits of these two banks move in same direction in high. Correlation coefficient is also significant.
  22. The correlation of total investment between HBL and BOKL is positive correlation i.e. 0.238. It implies that the total investment of both banks move in the same direction but less proportionately. Correlation coefficient of bank is insignificant.
  23. The correlation of loan and advances between HBL and BOKL is high because correlation coefficient between loan and advances of these banks is 0.990. It means loan and advances of these two banks move in same direction in high. Correlation coefficient is also significant.
  24. The correlation of net profit between HBL and BOKL is positive correlation i.e. 0.558. It implies that the net profit of both banks move in the same

- direction but less proportionately. Correlation coefficient of bank is insignificant.
25. HBL and BOKL have increasing trend in collecting deposit. The rate of increment of total deposit for HBL seems to be higher than that of BOKL. Both bank have moderate increasing trend.
  26. The total investment trend line of HBL and BOKL is downward sloping. HBK has highly downward sloping of total investment trend line where as BOKL has moderate downward sloping. It refers that HBL has more decreasing trend of total investment than BOKL.
  27. The trend line of loan and advances for both bank is upward sloping. It refers that both the banks are increasing in disbursement of loan and advances. The trend line of loan and advances for BOKL seems high growing than HBL. It refers that BOKL is more aggressive in mobilizing its fund as a loan and advances.
  28. The trend line of net profit for HBL and BOKL is upward sloping. The position of BOKL is better in order to generate profit than HBL.

## **CHAPTER FIVE**

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

#### **5.1 Summary**

In this chapter, summary, conclusion and recommendation are included. All the summary and conclusion are made according to obtained data from analysis. Recommendation has made which would be beneficial for all concerned person, management of the bank and other stakeholder.

This research is concerned about the comparative study on liquidity management of Himalayan Bank Ltd and Bank of Kathmandu Ltd. Liquidity is the ability of bank to meet its obligations on time, especially in relation to repayment of inter-bank borrowings and customer deposits. Liquidity management is a very crucial job of commercial bank and the bank should maintain adequate amount of cash in its vault and NRB for its daily operation and administrative purpose. As per the arrangement of NRB effective from fiscal year 2008 July, the commercial banks are required to maintain cash reserve of 5.5% with NRB of its total deposit liability with NRB. The provision of cash in vault maintenance has been withdrawn now.

The researcher has identified that research problem and set objectives to solve research problems about capital structure of selected commercial bank as described in introduction chapter. To make this study more effective, related literatures have been reviewed. The review of literature provides the foundation of knowledge in order to undertake this research more precisely. This section also includes concept of banking, commercial banks, concept of liquidity etc.

Research methodology has been described in third chapter, which is a way to solve the research problems with the help of various tools and techniques. This chapter includes the various financial as well as statistical tools to analyze the data in order to come to the decisions. This chapter includes the research design, population and sample data collection procedure, data period and method of analysis. This study is mainly conducted on the basis of secondary data collected from annual reports, official report, economic journal, financial statement etc. and authorize website of concern bank. The five years statement has been examined for the purpose of the study.

The presentation and analysis of data has been made comparative analytical and their interpretation has done in chapter four by applying the wide varieties of methodology as stated in chapter three. It includes the various financial and statistical tools. In case of financial tools ratio analysis is done which consists liquidity ratio, assets management ratio and profitability ratio. Various statistical tools such as arithmetic mean, standard deviation, coefficient of correlation and trend analysis have been applied to fulfill the objective of this study. The major findings of the study are also included in the final section of the presentation and analysis chapter.

In the aspect of liquidity position, cash and bank balance reserve ratio shows the more liquidity position. Cash and bank balance to total deposit has fluctuating trend in 5 years study period. These all ratio shows that the bank is not maintain the good liquidity position of the bank.

## **5.2 Conclusion**

Thus this research is conducted with the major objectives of highlighting liquidity management of two commercial banks i.e. Himalayan Bank Limited and Bank of Kathmandu Limited. The observation and conclusion is derived by analyzing liquidity, asset management position and profitability as well as relevant financial and statistical ratios of commercial banks. This has helped to reach conclusion and provide workable solution for the liquidity management and profitability of selected banks.

The overall aspect of liquidity position of HBL is comparatively better than BOKL. The mean current ratio of HBL is 1.086 and BOKL is 0.904. The current ratio of HBL is higher than BOKL. So, HBL is sound in meeting short-term obligation than BOKL. Cash and bank balance to total deposit ratio of BOKL has higher than HBL i.e. 9.5 % >7.2 % which indicates that the bank has higher liquidity of BOKL as compare to HBL. A high ratio of cash and bank balance may be undesirable which indicates inability to investment in more productive sectors like short-term marketable securities insuring enough liquidity which will help the bank to improve its profitability. But the liquidity position is good. Cash and bank balance to current assets ratio of HBL is little higher than BOKL i.e. 6.5 % >5.0 %. The higher mean ratio shows HBL's liquidity position is better than that of BOKL. Investment on government securities to current assets of HBL is higher than BOKL i.e. 14.5 % >8.4 %. It shows HBL has investment more fund in government securities. BOKL has invested little portion of their funds in purchasing of government securities.

Assets management aspect of BOKL is better than HBL which justified by little higher loan and advances to total deposit ratio i.e. 79.5% > 60.6 %. It indicates the better mobilization of deposit by BOKL. So, BOKL is more efficiently utilizing the outsider's funds in extending credit for profit generating sectors. The total investment to total deposit of HBL is higher than BOKL i.e. 34.0 % >21.7 %. It shows the HBL is mobilizing its funds on investment in various securities efficiently. It can be said that HBL is more successful in utilizing its total deposit by investing in marketable securities. The loan and advances to total assets ratio of BOKL is greater than HBL

i.e. 69.0 % >59.1 %. It refers BOKL has utilized its total assets more efficiently in the form of loan and advances with more risk because it has greater variability in the ratio. Similarly, Investment on government securities to total assets ratio of HBL is little higher than BOKL i.e. 14.3 % >13.3 %. This indicates that HBL has invested little more portions of total assets on government securities. The higher ratio of HBL shows that better fund mobilization.

In case of profitability ratios return on loan and advances of BOKL is higher than that of HBL i.e. 2.9 % >2.7 %. It refers that BOKL seems to be success to earn high profit on loan and advances. But the return is not consistent. Since both banks have small mean returns on its loan and advances. Return on total assets ratio of BOKL is higher than HBL i.e. 2.0 % >1.6 %. But it has greater variability in the ratio. BOKL seems successful in managing and utilizing the available assets. Total interest earned to total assets ratio of BOKL is higher than EBL i.e. 6.4 % >5.9 %. It indicates that BOKL has efficiently used its total assets to earn higher interest income in comparison to HBL and it is also stable in terms of interest earning. Total interest earned to total operating income ratio of HBL is higher than BOKL i.e. 1.261 % >1.251 %. It means the greater portion of total operating income is occupied by total interest for HBL. It reveals HBL has successful mobilizing their fund in interest generating assets. Total interest paid to total assets ratio of BOKL is higher than HBL i.e. 2.8 % >2.6%. It shows BOKL has high interest expenditure to total assets. It supports BOKL to increase to interest paid to operating income.

Both commercial banks HBL and BOKL have positive correlation between deposit and loan and advances, and loan and advances and net profit whereas negative relation between total deposit and total investment, and total investment and net profit. HBL and BOKL has high positive co-relation between total deposit and loan and advances because HBL and BOKL have 0.988 and 0.999 of co-relation coefficient between deposit and advances. These relationships are significant. This can be regarded as good indication in financial performance for the banks. The

correlation coefficient of both bank is significant. The coefficient of correlation between total deposit and total investment of HBL and BOKL are -0.625 and -0.278 which are not insignificant over the study period. Because correlation coefficient of both bank are lower than 6 P.Er. HBL has moderate positive co-relation where as BOKL has high positive co-relation between total deposit and loan and advances because HBL and BOKL have 0.415 and 0.996 of co-relation coefficient between deposit and advances. BOKL is significant because the correlation coefficient is higher than 6 P.Er. Whereas HBL is insignificant because the correlation coefficient is lower than 6 P.Er. The coefficient of correlation between total investment and net profit of HBL and BOKL are -0.158 and -0.537 which are not insignificant over the study. Because correlation coefficient of both bank are lower than 6 P.Er.

The correlation of total deposit between HBL and BOKL is high because correlation coefficient between total deposit of these banks is 0.984. It means total deposits of these two banks move in same direction in high. Correlation coefficient is also significant. The correlation of total investment between HBL and BOKL is positive correlation i.e. 0.238. It implies that the total investment of both banks move in the same direction but less proportionately. Correlation coefficient of bank is insignificant. The correlation of loan and advances between HBL and BOKL is high because correlation coefficient between loan and advances of these banks is 0.990. It means loan and advances of these two banks move in same direction in high. Correlation coefficient is also significant. The correlation of net profit between HBL and BOKL is positive correlation i.e. 0.558. It implies that the net profit of both banks move in the same direction but less proportionately. Correlation coefficient of bank is insignificant.

The total deposit, loan and advances and net profit of HBL and BOKL are in increasing trend. It shows positive trend of both banks. HBL and BOKL have increasing trend in collecting deposit the rate of increment of total deposit for HBL seems higher than that of BOKL. The trend line of loan and advances for both bank is upward sloping. The trend line of loan and advances for BOKL seems high growing

than HBL. The trend line of net profit for HBL and BOKL is upward sloping. The position of BOKL is higher than HBL. Trend line of both bank has increasing trend. Whereas total investment is in decreasing trend. It show negative trend of both banks. The total investment trend line of HBL and BOKL is downward sloping. In comparison to both bank trend of total deposit, total investment and net profit of HBL is high and trend of loan and advances of BOKL is high.

### **5.3 Recommendations**

Based on the analysis and finding of the study, the following recommendation can be made as suggestions to make the liquidity management of HBL and BOKL effective and efficient. This would help to draw some outline and make reforms in the respective banks.

- Generally, banks have to maintain appropriate liquid assets. The current ratio of the two banks, HBL and BOKL is considerable. This can be regarded as good liquidity position. The liquidity position affects external and internal factors such as prevalent investment situations, central bank requirements and so on. Considering the growth position of financial market, the lending policy management capabilities, strategic planning and fund flow situation, bank should maintain enough liquid assets to pay short-term obligation. So, it is recommended to maintain sound liquidity position to HBL and BOKL.
- Government securities such as Treasury bills, Development bonds, saving certificates etc are risk less investment alternatives because they are free of default risk as well as liquidity risk and can be easily sold in the market. In this research study, it has found that both banks, HBL and BOKL are recommended to investment more funds in Government securities instead of keeping them idle.
- To get success in competitive banking environment, deposit must be utilized as loan and advances. The largest item of bank assets side is loan and advances. It has been found that loan and advances to total deposit ratio of HBL is lower than that of BOKL. It means HBL has not properly used their existing fund as loan and advances.

So HBL is recommended to follow liberal lending policy and to invest more deposit in loan and advances.

- HBL and BOKL need to bring in newer schemes to mobilize their higher amount of deposits in extending credit.
- Both the banks are recommended to formulate and implement the sound and effective investment policy to increase volume of total investment and loan and advances that helps to meet required level of profitability as well as social responsibility. The banks should consider rural areas in making investment policy.
- Last political instability directly affected the economic sector such as hotel and tourism, manufacturing and trading sector. Bank loan and advances in decreasing in this sector. So banks should give priority to these sectors as well as banks should create new investing sector to mobilize deposit.
- In the light of growing competition in the banking sector, both bank HBL and BOKL should be customer oriented. It should strengthen and activate its marketing function as it is an effective tool to attract and retain the customers.

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## Appendix – 1

### Current assets to current liabilities of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	1.09	0.56	0.000016	0.118336
2063/2064	1.08	0.96	0.000036	0.003136
2064/2065	1.08	1.04	0.000036	0.018496
2065/2066	1.09	0.98	0.000016	0.005776
2066/2067	1.09	0.98	0.000016	0.005776
N=5	$\sum X = 5.43$	$\sum Y = 4.52$	0.00012	0.15152

$$\bar{X} = \frac{\sum X}{n} = \frac{5.43}{5} = 1.086 \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{4.52}{5} = 0.904$$

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

$$= \frac{\sqrt{0.00012}}{5-1}$$

$$= 0.0005$$

$$= \frac{\sqrt{0.15152}}{5-1}$$

$$= 0.1946$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0005}{1.086}$$

$$0.0005$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.1946}{0.904}$$

$$= 0.2153$$

## Appendix – 2

### Cash and balance to total deposit of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.065	0.069	0.000049	0.000676
2063/2064	0.058	0.106	0.000196	0.000121
2064/2065	0.045	0.091	0.000729	0.000016
2065/2066	0.088	0.121	0.000256	0.000676
2066/2067	0.103	0.089	0.000961	0.000036
N=5	$\sum X = 0.359$	$\sum Y = 0.476$	0.002191	0.001525

$$\bar{X} = \frac{\sum X}{n} = \frac{0.359}{5} = 0.072 \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{0.476}{5} = 0.095$$

$$\begin{aligned} \text{S.D} &= \frac{\sqrt{\sum(X-\bar{X})^2}}{n-1} \\ &= \frac{\sqrt{0.002191}}{5-1} \\ &= 0.0234 \end{aligned}$$

$$\begin{aligned} \text{S.D} &= \frac{\sqrt{\sum(Y-\bar{Y})^2}}{n-1} \\ &= \frac{\sqrt{0.001525}}{5-1} \\ &= 0.0195 \end{aligned}$$

$$\begin{aligned} \text{C.V.} &= \frac{\sigma}{\bar{X}} \\ &= \frac{0.0234}{0.072} \\ &= 0.325 \end{aligned}$$

$$\begin{aligned} \text{C.V.} &= \frac{\sigma}{\bar{Y}} \\ &= \frac{0.0195}{0.095} \\ &= 0.205 \end{aligned}$$

### Appendix – 3

#### Cash and bank balance to Current Assets of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.058	0.049	0.000049	0.000001
2063/2064	0.053	0.045	0.000144	0.000025
2064/2065	0.041	0.043	0.000576	0.000049
2065/2066	0.079	0.064	0.000196	0.000196
2066/2067	0.093	0.049	0.000784	0.000001
N=5	$\sum X = 0.324$	$\sum Y = 0.25$	0.001749	0.000272

$$\bar{X} = \frac{\sum X}{n} = \frac{0.324}{5} = 0.065 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{0.25}{5} = 0.050$$

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

$$= \frac{\sqrt{0.001749}}{5-1} \quad = \frac{\sqrt{0.000272}}{5-1}$$

$$= 0.0209 \quad = 0.0082$$

$$C.V. = \frac{\sigma}{\bar{X}} \quad C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0209}{0.065} \quad = \frac{0.0082}{0.050}$$

$$= 0.322 \quad = 0.164$$

## Appendix – 4

### Investment on Govt. Securities to Current Assets of HBL and BOKL

Year	X	Y	$(X-\bar{X})^2$	$(Y-\bar{Y})^2$
2062/2063	0.156	0.144	0.000121	0.0036
2063/2064	0.184	0.080	0.001521	0.000016
2064/2065	0.202	0.064	0.003249	0.0004
2065/2066	0.102	0.051	0.001849	0.001089
2066/2067	0.083	0.080	0.003844	0.000016
N=5	$\sum X = 0.727$	$\sum Y = 0.419$	0.010584	0.005121

$$\bar{X} = \frac{\sum X}{n} = \frac{0.727}{5} = 0.145 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{0.419}{5} = 0.084$$

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

$$= \frac{\sqrt{0.010584}}{5-1}$$

$$= 0.0514$$

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

$$= \frac{\sqrt{0.005121}}{5-1}$$

$$= 0.0036$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0514}{0.145}$$

$$= 0.354$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0036}{0.084}$$

$$= 0.043$$

## Appendix – 5

### Loan and Advances to total deposit of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.595	0.714	0.005041	0.006561
2063/2064	0.592	0.782	0.005476	0.000169
2064/2065	0.634	0.805	0.001024	0.0001
2065/2066	0.736	0.826	0.0049	0.000961
2066/2067	0.774	0.846	0.011664	0.002601
N=5	$\Sigma X = 3.331$	$\Sigma Y = 3.973$	0.028105	0.010392

$$\bar{X} = \frac{\Sigma X}{n} = \frac{3.331}{5} = 0.666 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{3.973}{5} = 0.795$$

$$S.D = \frac{\sqrt{\Sigma(X-\bar{X})^2}}{n-1} \qquad S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.028105}}{5-1} \qquad = \frac{\sqrt{0.010392}}{5-1}$$

$$= 0.0838 \qquad = 0.0510$$

$$C.V. = \frac{\sigma}{\bar{X}} \qquad C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0838}{0.666} \qquad = \frac{0.0510}{0.795}$$

$$= 0.126 \qquad = 0.064$$

## Appendix – 6

### Total Investment to total deposit of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.411	0.322	0.005041	0.011025
2063/2064	0.393	0.242	0.002809	0.000625
2064/2065	0.419	0.203	0.006241	0.000196
2065/2066	0.251	0.154	0.007921	0.003969
2066/2067	0.225	0.162	0.013225	0.003025
N=5	$\Sigma X = 1.699$	$\Sigma Y = 1.083$	0.035237	0.01884

$$\bar{X} = \frac{\Sigma X}{n} = \frac{1.699}{5} = 0.340 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{1.083}{5} = 0.217$$

$$S.D = \frac{\sqrt{\Sigma(X-\bar{X})^2}}{n-1} \qquad S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.035237}}{5-1}$$

$$= 0.0939$$

$$= \frac{\sqrt{0.01884}}{5-1}$$

$$= 0.0686$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0939}{0.340}$$

$$= 0.276$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0686}{0.217}$$

$$= 0.316$$

## Appendix – 7

### Loan and Advances to Total Assets of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.535	0.610	0.003136	0.0064
2063/2064	0.531	0.665	0.0036	0.000625
2064/2065	0.558	0.719	0.001089	0.000841
2065/2066	0.649	0.729	0.003364	0.001521
2066/2067	0.682	0.729	0.008281	0.001521
N=5	$\Sigma X = 2.955$	$\Sigma Y = 3.452$	0.01947	0.010908

$$\bar{X} = \frac{\Sigma X}{n} = \frac{2.955}{5} = 0.591 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{3.452}{5} = 0.690$$

$$S.D = \frac{\sqrt{\Sigma(X-\bar{X})^2}}{n-1} \qquad S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.01947}}{5-1}$$

$$= 0.0698$$

$$= \frac{\sqrt{0.010908}}{5-1}$$

$$= 0.0522$$

$$C.V. = \frac{\sigma}{\bar{X}} \qquad C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0698}{0.591}$$

$$= 0.118$$

$$= \frac{0.0522}{0.690}$$

$$= 0.076$$

## Appendix – 8

### Investment on Govt. Securities to Total Assets of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.155	0.175	0.000144	0.001764
2063/2064	0.181	0.160	0.001444	0.000729
2064/2065	0.198	0.119	0.003025	0.000196
2065/2066	0.099	0.085	0.001936	0.002304
2066/2067	0.081	0.126	0.003844	0.000049
N=5	$\sum X = 0.714$	$\sum Y = 0.665$	0.010393	0.005042

$$\bar{X} = \frac{\sum X}{n} = \frac{0.714}{5} = 0.143 \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{0.665}{5} = 0.133$$

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

$$= \frac{\sqrt{0.010393}}{5-1}$$

$$= 0.0510$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0510}{0.143}$$

$$= 0.357$$

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

$$= \frac{\sqrt{0.005042}}{5-1}$$

$$= 0.0355$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0355}{0.133}$$

$$= 0.267$$

## Appendix – 9

### Return on loan and advances of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.029	0.027	0.000004	0.000004
2063/2064	0.028	0.027	0.000001	0.000004
2064/2065	0.032	0.028	0.000025	0.000001
2065/2066	0.030	0.031	0.000009	0.000009
2066/2067	0.017	0.030	0.0001	0.000001
N=5	$\Sigma X = 0.136$	$\Sigma Y = 0.143$	0.000139	0.000019

$$\bar{X} = \frac{\Sigma X}{n} = \frac{0.136}{5} = 0.027 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{0.143}{5} = 0.029$$

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

$$= \frac{\sqrt{0.000139}}{5-1}$$

$$= 0.0059$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0059}{0.027}$$

$$= 0.219$$

$$S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.000019}}{5-1}$$

$$= 0.0022$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0022}{0.029}$$

$$= 0.076$$

## Appendix – 10

### Return on Total Assets of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.016	0.016	0	0.000016
2063/2064	0.015	0.018	0.000001	0.000004
2064/2065	0.018	0.020	0.000004	0
2065/2066	0.019	0.023	0.000009	0.000009
2066/2067	0.012	0.022	0.000016	0.000004
N=5	$\Sigma X = 0.080$	$\Sigma Y = 0.099$	0.00003	0.000033

$$\bar{X} = \frac{\Sigma X}{n} = \frac{0.080}{5} = 0.016 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{0.099}{5} = 0.020$$

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

$$= \frac{\sqrt{0.00003}}{5-1}$$

$$= 0.0027$$

$$S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.000033}}{5-1}$$

$$= 0.0029$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0027}{0.016}$$

$$= 0.169$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0029}{0.020}$$

$$= 0.145$$

## Appendix – 11

### Total interest earned to total assets of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.055	0.058	0.000016	0.000036
2063/2064	0.053	0.056	0.000036	0.000064
2064/2065	0.054	0.058	0.000025	0.000036
2065/2066	0.060	0.066	0.000001	0.000004
2066/2067	0.074	0.080	0.000225	0.000256
N=5	$\Sigma X = 0.296$	$\Sigma Y = 0.318$	0.000303	0.000396

$$\bar{X} = \frac{\Sigma X}{n} = \frac{0.296}{5} = 0.059 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{0.318}{5} = 0.064$$

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

$$= \frac{\sqrt{0.000303}}{5-1}$$

$$= 0.0087$$

$$S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.000396}}{5-1}$$

$$= 0.0099$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0087}{0.059}$$

$$= 0.147$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0099}{0.064}$$

$$= 0.155$$

## Appendix – 12

### Total interest earned to total operation income of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	1.167	1.245	0.008836	0.000036
2063/2064	1.274	1.210	0.000169	0.001681
2064/2065	1.229	1.198	0.001024	0.002809
2065/2066	1.178	1.209	0.006889	0.001764
2066/2067	1.459	1.393	0.039204	0.020164
N=5	$\sum X = 6.307$	$\sum Y = 6.225$	0.056122	0.026454

$$\bar{X} = \frac{\sum X}{n} = \frac{6.307}{5} = 1.261 \qquad \bar{Y} = \frac{\sum Y}{n} = \frac{6.225}{5} = 1.251$$

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

$$= \frac{\sqrt{0.056122}}{5-1}$$

$$= 0.1185$$

$$= \frac{\sqrt{0.026454}}{5-1}$$

$$= 0.0813$$

$$C.V. = \frac{\sigma}{\bar{X}} \qquad C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.1185}{1.261}$$

$$= 0.094$$

$$= \frac{0.0813}{1.251}$$

$$= 0.065$$

### Appendix – 13

#### Total interest paid to total asset of HBL and BOKL

Year	X	Y	(X- $\bar{X}$ ) <sup>2</sup>	(Y- $\bar{Y}$ ) <sup>2</sup>
2062/2063	0.022	0.025	0.000016	0.000009
2063/2064	0.023	0.023	0.000009	0.000025
2064/2065	0.023	0.024	0.000009	0.000016
2065/2066	0.024	0.027	0.000004	0.000001
2066/2067	0.036	0.039	0.0001	0.000121
N=5	$\Sigma X = 0.128$	$\Sigma Y = 0.138$	0.000138	0.000172

$$\bar{X} = \frac{\Sigma X}{n} = \frac{0.128}{5} = 0.026 \qquad \bar{Y} = \frac{\Sigma Y}{n} = \frac{0.138}{5} = 0.028$$

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

$$= \frac{\sqrt{0.000138}}{5-1}$$

$$= 0.0059$$

$$S.D = \frac{\sqrt{\Sigma(Y-\bar{Y})^2}}{n-1}$$

$$= \frac{\sqrt{0.000172}}{5-1}$$

$$= 0.0066$$

$$C.V. = \frac{\sigma}{\bar{X}}$$

$$= \frac{0.0059}{0.026}$$

$$= 0.227$$

$$C.V. = \frac{\sigma}{\bar{Y}}$$

$$= \frac{0.0066}{0.028}$$

$$= 0.236$$

## Appendix – 14

### Calculation of Correlation Coefficient between Total deposit and Loan and Advances of HBL

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
26490.85	15761.98	-5644.26	31857670.95	-5913.74	34972320.79	33378686.13
30048.42	17793.72	-2086.69	4354275.16	-3882	15069924	8100530.58
31842.79	20179.61	-292.32	85450.98	-1496.11	2238345.13	437342.88
34682.31	25519.52	2547.2	6488227.84	3843.8	14774798.44	9790927.36
37611.20	29123.76	5476.09	29987561.69	7448.04	55473299.84	40786137.36
160675.57	108378.59		72773186.62		120514188.2	92493624.31

$$\bar{X} = \frac{\sum X}{n} = \frac{160675.57}{5} = 32135.11 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{108378.59}{5} = 21675.72$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{92493624.31}{\sqrt{72773186.62} \times \sqrt{120514188.2}} = 0.998$$

$$R^2 = 0.976$$

$$P.Er = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0072$$

$$6 P.Er = 0.0432$$

### Calculation of Correlation Coefficient between Total deposit and Loan and Advances of BOKL

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
10485.36	7488.70	-4900.21	24012058.04	-4895.41	23965039.07	23988537.04
12388.93	9694.10	-2996.64	8979851.29	-2690.01	7236153.8	8060991.57
15833.74	12747.72	448.17	200856.35	363.61	132212.23	162959.09
18083.98	14945.72	2698.41	7281416.53	2561.61	6561845.79	6912274.04
20135.83	17044.30	4750.26	22564970.07	4660.19	21717370.84	22137114.15
76927.84	61920.54		63039152.28		59612621.73	61261875.89

$$\bar{X} = \frac{\sum X}{n} = \frac{76927.84}{5} = 15385.57 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{61920.54}{5} = 12384.11$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{61261875.89}{\sqrt{63039152.28} \times \sqrt{59612621.73}} = 0.999$$

$$R^2 = 0.998$$

$$P.Er = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0006$$

$$6 P.Er = 0.0036$$

### Appendix – 15

#### Calculation of Correlation Coefficient between Total deposit and Total Investment of HBL

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
26490.85	10890.37	-5644.26	31857670.95	248.54	61772.13	-1402824.38
30048.42	11822.98	-2086.69	4354275.16	1181.15	1395115.32	-2464693.89
31842.79	13340.18	-292.32	85450.98	2698.35	7281092.72	-788781.67
34682.31	8710.69	2547.2	6488227.84	-1931.14	3729301.7	-4918999.81
37611.20	8444.91	5476.09	29987561.69	-2196.92	4826457.49	-12630531.69
160675.57	53209.13		72773186.62		17293739.36	-22205831.39

$$\bar{X} = \frac{\sum X}{n} = \frac{160675.57}{5} = 32135.11 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{53209.13}{5} = 10641.83$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{-22205831.39}{\sqrt{72773186.62} \times \sqrt{17293739.36}} = -0.626$$

$$R^2 = 0.392$$

$$P.Er = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.183$$

$$6 P.Er = 1.098$$

#### Calculation of Correlation Coefficient between Total deposit and Total Investment of BOKL

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
10485.36	3378.13	-4900.21	24012058.04	250.99	62995.98	-1229903.71
12388.93	2995.19	-2996.64	8979851.29	-131.95	17410.80	395406.65
15833.74	3206.83	448.17	200856.35	79.69	6350.50	35714.68
18083.98	2786.36	2698.41	7281416.53	-340.78	116131.01	-919564.16
20135.83	3269.20	4750.26	22564970.07	142.06	20181.04	674821.94
76927.84	15635.71		63039152.28		223069.33	-1043524.6

$$\bar{X} = \frac{\sum X}{n} = \frac{76927.84}{5} = 15385.57 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{15635.71}{5} = 3127.14$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{-1043524.6}{\sqrt{63039152.28} \times \sqrt{223069.33}} = -0.278$$

$$R^2 = 0.077$$

$$\text{P.Er} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.278$$

$$6 \text{ P.Er} = 1.668$$

### Appendix – 16

#### Calculation of Correlation Coefficient between Loan and Advances and Net profit of HBL

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
15761.98	457.46	-5913.74	34972320.79	-111.9	12521.61	661747.51
17793.72	491.82	-3882	15069924	-77.54	6012.45	301010.28
20179.61	635.87	-1496.11	2238345.13	66.51	4423.58	-99506.28
25519.52	752.83	3843.8	14774798.44	183.47	33661.24	705221.99
29123.76	508.80	7448.04	55473299.84	-60.56	3667.51	-451053.30
108378.59	2846.78		120514188.2		60286.39	1117420.2

$$\bar{X} = \frac{\sum X}{n} = \frac{108378.59}{5} = 21675.72 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{2846.78}{5} = 569.36$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{1117420.2}{\sqrt{120514188.2} \times \sqrt{60286.39}} = 0.415$$

$$R^2 = 0.172$$

$$\text{P.Er} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.250$$

$$6 \text{ P.Er} = 1.500$$

**Calculation of Correlation Coefficient between Loan and Advances and Net profit of BOKL**

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
7488.70	202.44	-4895.41	23965039.07	-157.02	24655.28	768661.58
9694.10	262.39	-2690.01	7236153.8	-97.07	9422.58	261119.27
12747.72	361.50	363.61	132212.23	2.04	4.1616	741.76
14945.72	461.73	2561.61	6561845.79	102.27	10459.15	261975.85
17044.30	509.26	4660.19	21717370.84	149.8	22440.04	698096.46
61920.54	1797.32		59612621.73		66981.21	1990594.92

$$\bar{X} = \frac{\sum X}{n} = \frac{61920.54}{5} = 12384.11 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{1797.32}{5} = 359.46$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{1990594.92}{\sqrt{59612621.73} \times \sqrt{66981.21}} = 0.996$$

$$R^2 = 0.992$$

$$P.Er = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0024$$

$$6 P.Er = 0.0144$$

**Appendix – 17**

**Calculation of Correlation Coefficient between Total Investment and Net profit of HBL**

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
10890.37	457.46	248.54	61772.13	-111.9	12521.61	-27811.63
11822.98	491.82	1181.15	1395115.32	-77.54	6012.45	-91586.37
13340.18	635.87	2698.35	7281092.72	66.51	4423.58	179467.26
8710.69	752.83	-1931.14	3729301.7	183.47	33661.24	-354306.26
8444.91	508.80	-2196.92	4826457.49	-60.56	3667.51	133045.48
53209.13	2846.78		17293739.36		60286.39	-161191.52

$$\bar{X} = \frac{\sum X}{n} = \frac{53209.13}{5} = 10641.83 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{2846.78}{5} = 569.36$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{-161191.52}{\sqrt{17293739.36} \times \sqrt{60286.39}} = -0.158$$

$$R^2 = 0.025$$

$$P.Er = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.294$$

$$6 P.Er = 1.764$$

**Calculation of Correlation Coefficient between Total Investment and Net profit of BOKL**

T.D (X)	L.A (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
3378.13	202.44	250.99	62995.98	-157.02	24655.28	-39410.45
2995.19	262.39	-131.95	17410.80	-97.07	9422.58	-12808.39
3206.83	361.50	79.69	6350.50	2.04	4.1616	162.57
2786.36	461.73	-340.78	116131.01	102.27	10459.15	-34851.57
3269.20	509.26	142.06	20181.04	149.8	22440.04	21280.59
15635.71	1797.32		223069.33		66981.21	-65627.25

$$\bar{X} = \frac{\sum X}{n} = \frac{15635.71}{5} = 3127.14 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{1797.32}{5} = 359.46$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{-65627.25}{\sqrt{223069.33} \times \sqrt{66981.21}} = -0.537$$

$$R^2 = 0.288$$

$$P.Er = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.215$$

$$6 P.Er = 1.290$$

**Appendix – 18**

**Calculation of Correlation Coefficient of Total Deposit between HBL and BOKL**

T.D (X)	T.D (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
26490.85	10485.36	-5644.26	31857670.95	-4900.21	24012058.04	27658059.29
30048.42	12388.93	-2086.69	4354275.16	-2996.64	8979851.29	6263058.72
31842.79	15833.74	-292.32	85450.98	448.17	200856.35	-131009.05
34682.31	18083.98	2547.2	6488227.84	2698.41	7281416.53	6873389.95
37611.20	20135.83	5476.09	29987561.69	4750.26	22564970.07	26012851.28
160675.57	76927.84		72773186.62		63039152.28	66666350.19

$$\bar{X} = \frac{\sum X}{n} = \frac{160675.57}{5} = 32135.11 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{76927.84}{5} = 15385.57$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{66666350.19}{\sqrt{72773186.62} \times \sqrt{63039152.28}} = 0.984$$

$$R^2 = 0.968$$

$$\text{P.Er} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0096$$

$$6 \text{ P.Er} = 0.0576$$

### Appendix –19

#### Calculation of Correlation Coefficient of Total Investment between HBL and BOKL

T.D (X)	T.D (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
10890.37	3378.13	248.54	61772.13	250.99	62995.98	62381.05
11822.98	2995.19	1181.15	1395115.32	-131.95	17410.80	-155852.74
13340.18	3206.83	2698.35	7281092.72	79.69	6350.50	215031.51
8710.69	2786.36	-1931.14	3729301.7	-340.78	116131.01	658093.89
8444.91	3269.20	-2196.92	4826457.49	142.06	20181.04	-312094.46
53209.13	15635.71		17293739.36		17293739.36	467559.25

$$\bar{X} = \frac{\sum X}{n} = \frac{53209.13}{5} = 10641.83 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{15635.71}{5} = 3127.14$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{467559.25}{\sqrt{17293739.36} \times \sqrt{17293739.36}} = 0.238$$

$$R^2 = 0.057$$

$$\text{P.Er} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2846$$

$$6 \text{ P.Er} = 1.710$$

## Appendix –20

### Calculation of Correlation Coefficient of Loan and Advance between HBL and BOKL

T.D (X)	T.D (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
15761.98	7488.70	-5913.74	34972320.79	-4895.41	23965039.07	28949590.56
17793.72	9694.10	-3882	15069924	-2690.01	7236153.8	10442618.82
20179.61	12747.72	-1496.11	2238345.13	363.61	132212.23	-544000.56
25519.52	14945.72	3843.8	14774798.44	2561.61	6561845.79	9846316.52
29123.76	17044.30	7448.04	55473299.84	4660.19	21717370.84	34709281.53
108378.59	61920.54		120514188.2		59612621.73	83947807.43

$$\bar{X} = \frac{\sum X}{n} = \frac{108378.59}{5} = 21675.72 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{61920.54}{5} = 12384.11$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{83947807.43}{\sqrt{120514188.2} \times \sqrt{59612621.73}} = 0.990$$

$$R^2 = 0.980$$

$$\text{P.Er} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0060$$

$$6 \text{ P.Er} = 0.036$$

## Appendix –21

### Calculation of Correlation Coefficient of Net Profit between HBL and BOKL

T.D (X)	T.D (Y)	x = X- $\bar{X}$	X <sup>2</sup>	y = Y- $\bar{Y}$	Y <sup>2</sup>	XY
457.46	202.44	-111.9	12521.61	-157.02	24655.28	17570.54
491.82	262.39	-77.54	6012.45	-97.07	9422.58	7526.81
635.87	361.50	66.51	4423.58	2.04	4.1616	135.68
752.83	461.73	183.47	33661.24	102.27	10459.15	18763.48
508.80	509.26	-60.56	3667.51	149.8	22440.04	-9071.89
2846.78	1797.32		60286.39		66981.21	34924.62

$$\bar{X} = \frac{\sum X}{n} = \frac{2846.78}{5} = 569.36 \quad \bar{Y} = \frac{\sum Y}{n} = \frac{1797.32}{5} = 359.46$$

$$\text{Correlation, } r = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{34924.62}{\sqrt{60286.39} \times \sqrt{66981.21}} = 0.550$$

$$R^2 = 0.303$$

$$\text{P.Er} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.2104$$

$$6 \text{ P.Er} = 1.2624$$

## Appendix – 22

### Calculation of Himalayan Bank Limited

Year (x)	Total deposit (Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	26490.85	-2	4	-52981.7
2063/2064	30048.42	-1	2	-30048.42
2064/2065	31842.79	0	0	0
2065/2066	34682.31	1	1	34682.31
2066/2067	37611.20	2	4	75222.4
Total n = 5	$\sum Y=160675.57$	$\sum X=0$	$\sum X^2=10$	$\sum XY=26874.59$

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n}$$

$$b = \frac{\sum XY}{\sum X^2}$$

$$a = 32135.11$$

$$b = 2687.459$$

where as

$$Y_c = 32135.11 + 2687.459 X \text{ of HBL}$$

**Calculation of Bank of Kathmandu Limited**

Year (x)	Total deposit (Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	10485.36	-2	4	-20970.7
2063/2064	12388.93	-1	2	-12388.93
2064/2065	15833.74	0	0	0
2065/2066	18083.98	1	1	18083.98
2066/2067	20135.83	2	4	40271.66
Total n = 5	∑Y=76927.84	∑X=0	∑X <sup>2</sup> =10	∑XY =24995.99

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 15385.57 \qquad b = 2499.599$$

Where as

$$Y_c = 15385.57 + 2499.599 X \text{ of BOKL}$$

**Appendix –23**

**Calculation of Himalayan Bank Limited**

Year (x)	Total investment(Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	10890.37	-2	4	-21780.74
2063/2064	11822.98	-1	2	-11822.98
2064/2065	13340.18	0	0	0
2065/2066	8710.69	1	1	8710.69
2066/2067	8444.91	2	4	16889.82
Total n = 5	∑Y=53209.13	∑X=0	∑X <sup>2</sup> =10	∑XY = - 8003.21

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 10641.83 \qquad b = - 800.321$$

Where as

$$Y_c = 10641.83 - 800.321 X \text{ of HBL}$$

**Calculation of Bank of Kathmandu Limited**

Year (x)	Total investment(Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	3378.13	-2	4	-6756.26
2063/2064	2995.19	-1	2	-2995.19
2064/2065	3206.83	0	0	0
2065/2066	2786.36	1	1	2786.36
2066/2067	3269.20	2	4	6538.4
Total n = 5	$\sum Y=15635.71$	$\sum X=0$	$\sum X^2 =10$	$\sum XY = - 426.69$

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 3127.14 \qquad b = - 42.669$$

Where as

$$Y_c = 3127.14 - 42.669 X \text{ of BOKL}$$

### Appendix –24

#### Calculation of Himalayan Bank Limited

Year (x)	Loan and advances (Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	15761.98	-2	4	-31523.96
2063/2064	17793.72	-1	2	-17793.72
2064/2065	20179.61	0	0	0
2065/2066	25519.52	1	1	25519.52
2066/2067	29123.76	2	4	29123.76
Total n = 5	$\sum Y=108378.59$	$\sum X=0$	$\sum X^2 =10$	$\sum XY =5325.6$

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 21675.72 \qquad b = 532.56$$

Where as

$$Y_c = 21675.72 + 532.56 X \text{ of HBL}$$

**Calculation of Bank of Kathmandu Limited**

Year (x)	Loan and advances (Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	7488.70	-2	4	-14977.4
2063/2064	9694.10	-1	2	-9694.10
2064/2065	1274.72	0	0	0
2065/2066	14945.72	1	1	14945.72
2066/2067	17044.30	2	4	34088.6
Total n = 5	∑ Y=61920.54	∑ X=0	∑ X <sup>2</sup> =10	∑ XY =24362.82

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 12384.11 \qquad b = 2436.282$$

Where as

$$Y_c = 12384.11 + 2436.282 X \text{ of BOKL}$$

**Appendix –25**

**Calculation of Himalayan Bank Limited**

Year (x)	Net profit (Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	457.46	-2	4	-914.92
2063/2064	491.82	-1	2	-491.82
2064/2065	635.87	0	0	0
2065/2066	752.83	1	1	752.83
2066/2067	508.80	2	4	1017.6
Total n = 5	∑ Y=2846.78	∑ X=0	∑ X <sup>2</sup> =10	∑ XY =363.69

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 569.36 \qquad b = 36.369$$

Where as

$$Y_c = 569.36 + 36.369 X \text{ of HBL}$$

**Calculation of Bank of Kathmandu Limited**

Year (x)	Net Profit (Y)	X=x-2064/65	X <sup>2</sup>	XY
2062/2063	202.44	-2	4	-404.88
2063/2064	262.39	-1	2	-262.39
2064/2065	361.50	0	0	0
2065/2066	461.73	1	1	461.73
2066/2067	509.26	2	4	1018.52
Total n = 5	$\sum Y=1797.32$	$\sum X=0$	$\sum X^2 =10$	$\sum XY =812.98$

Y = dependent variable a = Y- intercept b = slope of trend line or annual growth rate

X = deviation from convenient time period

Let trend line be

$$Y = a + b x \dots\dots\dots (i)$$

When x = X – Middle year

Here,

$$a = \frac{\sum Y}{n} \qquad b = \frac{\sum XY}{\sum X^2}$$

$$a = 359.46$$

$$b = 81.298$$

Where as

$$Y_c = 359.46 + 81.298 X \text{ of BOKL}$$