

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of the study

Loan management is the essence of the commercial banking; consequently the formulation and implementation of lending policies are among the most important responsibilities of the directors and management. Well conceived lending policies and careful lending practices are essential if a bank is to perform its credit. Loan management effects on the company's profitability and liquidity so it is one of the crucial decisions for the commercial banks. The banks take almost care in analyzing the creditworthiness of the borrowing customer to ensure that the interest and the principal amount on loans are timely recovered without much trouble and process for the recovery. A sound lending policy is essential for the good performances of the bank are further to attain economic objectives directed towards acceleration of the development. Lending policy should be carefully analyzed and the banks should be carefully while performing its credit creation effectively and to minimize the risk factor.

Lending is one of the most important functions of the commercial bank and the composition of the loans and advances directly affects the performance and profitability of the bank. There is intense competition in banking business with limited market and less investment opportunities available.

Due to loan management is not satisfactory and its being national issue and to contribute towards the topic through the study among the lot of topics, the loan management topic is selected. Thus study aims to focus on the comparative loan management of the joint venture banks namely, Nepal Bangladesh Bank Limited and SBI Bank Limited.

Commercial banks are major financial institutional, which occupy quite important place in the framework in every economy because they provide capital for the development for the industry. Commercial banks formulate sound

investment policies to make it effective, which eventually contribute to the economic growth of the country. The bound policies help commercial banks maximizing the quality and quantity of investment and hereby achieve the own objective if profit maximization and social welfare. Formulation of sound investment policies and co-ordinate and planned efforts pushed forward the forces of economic growth.

The need of financial resources in developing country like Nepal is essential for the economic development of country. The entire sector from industrial and economical to agriculture and infrastructure are in need of finding. Although the growth of industrial loans has not been encouraging in the recent years, there is sizable growth in commercial and other short term credits. Commercial banks are focusing loans on consumer loans like housing, vehicle, education loan etc. it is encouraging to explore to new sector for loan management but it should also be considered that industrial loan should be given prime importance as the economy largely depends on this sector.

Lending policies are not systematic and no clear cut vision of policy is available on lending aspect. In Nepal it has been found that on approval and lending decisions are made flexible to flavor the personnel networks. A new customer finds that loan providing process being very complicated and sometimes the documents submitted for loan sanctioning being fraudulent and for formality purpose only.

Loan management strongly recommends analyzing and managing the credit risks. Credit risk is defined as the possibility that the borrower will fail to meet its obligations in accordance with the agreed terms and conditions credit risk is not restricted to lending activities only but includes off balance sheet and inter-bank explores. The goal of the credit risk management is to maximize a bank's risk adjusted rate of return by maintaining the credit risk exposure within acceptable parameters. For most banks, loan are the largest and most obvious sources of credit risk, however other sources of credit risk exist through out the

activities of a bank, including in the banking book, and in the trading book, and both increasingly facing credit risk in various financial other than land, including acceptance, inter bank transactions and guarantees and the settlement of the transaction.

The loan management policy of a firm provides the framework to determine whether or not to extend credit and how much credit to extend. The loan management policy decision of a bank has two broad dimension; credit standard and credit analysis. A firm has to establish and use standards in making credit decisions, develop appropriate sources of credit information and methods of credit analysis.

Till the date there are 32 commercial banks in Nepal. Agriculture Development Bank (ADB) has also been listed in a class financial institution two years ago. Therefore, there are 32 'A' class financial institution (commercial bank). Till the period of this study, a new commercial bank has also been found to be licensed to practice commercial banking operations in Nepal. The name and the year of the establishment of the commercial banks in Nepal have been listed below.

<u>Name of the banks</u>	<u>Year of establishment (A.D)</u>
1) Nepal Bank Limited	1937
2) Rastriya Banijya bank	1966
3) NABIL bank limited	1984
4) Nepal Investment Bank Limited	1986
5) Standard Chartered Bank	1987
6) Himalayan Bank Limited	1993
7) Nepal SBI Bank Limited	1993
8) Nepal Bangladesh Bank Limited	1993
9) Nepal Everest Bank Limited	1994
10) Bank of Katmandu Limited	1995

11) Nepal Bank of Ceylon Limited	1996
12) Lumbini Bank Limited	1998
13) Nepal Industrial and Commercial Bank Limited	1998
14) Machhapuchchhre Bank Limited	2000
15) Kumari Bank Limited	2001
16) Laxmi Bank Limited	2002
17) Sidarth Bank Limited	2002
18) Global Bank Limited	2007
19) Citizen Bank Limited	2007
20) Prime Bank Limited	2007
21) Bank of Asia Limited	2007
22) Nepal bangladesh	2007
23) Grand Bank limited	2008
24) NMB Bank Limited	2009
25) Kist Bank Limited	2009
26) Megha bank	2009
27) Sunrise Bnak Limited	2009
28) Janta Bank Limited	2009
29) Commereze and trust Bank Limited	2010
30) Civil Bank limited	2010
31) Sanima Bank limited	2011
32) Century Commercial Bank Limited	2011

Beside there are 35 Development Banks, 5SS Grameen Vikash Banks, 78Finance Companies, 16 Cooperative Societies and 46 NGOs conducting financial transactions operating under the rules and regulations of Nepal Rastra Bank (NRB;Banking and Financial Statistics:2012).

Bank is defined as a financial intermediary that canalizes funds between deposits and entrepreneurs. It is a financial institution that accepts deposits and channels the money into lending activities. In a general sense, banks act as a financial intermediary. Intermediation is between deposits and entrepreneurs. A bank is an institution that deals with money by accepting deposits from the general public, corporate bodies and private organizations and deploys for profitable purpose in the form of loans and advances. Bank by accepting deposits takes up the role of custodian of public money. The transactions in the financial market heavily depend upon the banking system of the country. Without bank, it will be quite impossible for the industrialist and the entrepreneurs to go directly to general public for getting their saving or investments. So, the simplest definition is that, bank takes the savings of the public by providing them with certain rate of interest and loans it to needy customers charging them higher rate of interest and thus, earns some profit by doing these transactions. This is the broadest form of the banking, but at this age of time, their functions have increased manifold. Remitting of money, letter of credit, guarantee, issue of money, controlling monetary activities of country, etc. are also major functions of bank. For better understanding, an in depth study of bank has been conducted. The term bank is mainly related to financial transactions to operate, run and facilitate various monetary activities.

According to Concise Oxford Dictionary, the term bank has been defined as “A bank is an establishment of the custody of money which it pays out on customers’ order.” In the word of Kent, “A bank is an organization whose principal operations are converted with the accumulation of the temporarily idle money of the general public for the purpose of advancing to other for expenditure.” A banker and a bank is a person or company carrying on the business of receiving moneys, and collecting drafts, for customers subject to the obligation of honoring cheques drawn upon them from time to time by the customers to the extent of the available on their current accounts.

Therefore bank can easily be defined as the custodians of deposits. Bank is an institution which deals with money by accepting various types of deposits, disbursing loans and rendering other financial services “A bank is a business organization that receives and hold deposits of funds from other, grants loans or extends credits and transfers funds by written orders of depositors” (Dhungana: 1993:2-4).

“The more developed financial system of the world characteristically falls into three parts: central bank, commercial banks and other financial institutions. The two banks selected for the study are joint venture commercial banks (Dhungana: 1993:2-4).

## **1.2 FOCUS OF THE STUDY**

Banks have today gained paramount trust of the public. Banking industry offers a wide range of services addressing the needs of public in different walks of life. At present, a large number of banks are operating in Nepal. Naturally, they are rendering a wide range of services. They are trying to keep up pace with the changes taking place in the world. But quantity does not count for quality. The financial institution of all classes ‘A’ to ‘D’ are increased every year. In a small economy like Nepal, it is a question of great concern as to how so many banks are surviving and reaping profit. The concern is not only about these days but also the sustainability of the operating banks in future days also. Therefore the report will try to concentrate on two major private sector banks of Nepal, i.e., SBI Bank Limited and Nepal Bangladesh Bank Limited (EBL). It will focus on the comparative loan management of these two banks regarding profitability, liquidity, leverage positions, cost minimization, etc.

### 1.3A Brief Profile of the Banks

#### Nepal Bangladesh Limited (NBBL)

Nepal Bangladesh is a joint venture bank with International Financial Investment and Commerce Bank (IFIC) Limited of Bangladesh, and was established in 6<sup>th</sup> June 1994 (2051-02-23) under the company act 1964. It is managed in accordance with the Technical and Management. Agreement signed with IFIC Bank Ltd. Bangladesh. Now, the bank has 15 branches including main branch (i.e. head office) in Nepal.

#### Himalaya Bank Limited

Himalaya Bank Limited was registered under the Company Act, 1964 in 1993. This is a Joint Venture of State Bank of India and Nepali promoters. The bank is managed by State Bank of India under the joint- venture and technical services agreement signed between it and Nepali promoters Viz. employees provident fund and agriculture Development Bank, Nepal. The State Bank of India is holding its 50% equity.

The main objectives of this bank are to carryout modern banking business in the country under the Commercial Bank Act, 1974. The bank provides loan to Agriculture, commerce, educational and industrial sector. The bank is one of the largest shareholder based company. The bank started its banking operation on 8<sup>th</sup> July 1993. Now the bank has 19 branches including main branch (i.e. main office) in Katmandu, Nepal.

### 1.4 Statement of the problem

Loan management is the essence of the commercial banking; consequently the formulating and second lending policies are among the most important responsibilities of directors and management. Well conceived lending policies and careful lending practices are essential if a bank is to perform its credit. Loan

management effects on the company's profitability and liquidity so it is one of the crucial decisions for the commercial banks.

The need of financial resources in a developing country like Nepal is essential for the economic development of country. The entire sector from industrial and economical to agriculture and infrastructure are in need of finding. Although the growth of industrial loans has not been encouraging in the recent years, there is sizable growth in commercial and other short term credits. Commercial banks are focusing loans on consumer loans like housing, vehicle, education loan etc. it is encouraging to explore to new sector for loan management but it should also be considered that industrial loan should be given prime importance as the economy largely depends on this sector.

Lending policies are not systematic and no clear cut vision of policy is available on lending aspect. In Nepal it has been found that on approval and lending decisions are made flexible to favors to personal networks also. A new customer finds that loan providing process being very complicated and sometimes the documents submitted the loan sanctioning being fraudulent and for formally purpose only. In this perspective the study deals with the following issues:

- ) How effectively is the lending policy of selected sample bank is being followed?
- ) Whether the trend of the deposit sand loans of the commercial banks are satisfactory?
- ) How the sample banks measures the liquidity position and impact of deposit on liquidity?
- ) What is the portion of lending between customer and industrial loan?
- ) How the banks measure the lending between consumer and industrial loan?
- ) How the banks measure the lending performance in quality, efficiency and contribution of profitability?



## 1.5 Objective of the study

The main objective of the study is to analyze the loan management policy adopted by the sample banks. However the specific objectives are as follows:

- ) To analyze the effectiveness of lending policy of the selected sample banks.
- ) To measure the performance in quality, efficiency and contribution of profitability.
- ) To examine the trend of the deposit and loans of commercial bank.
- ) To study the liquidity position, the impact of deposit in liquidity and its effect on lending performance.
- ) To provide suggestions and recommendation for the proper loan system.

## 1.6 Significance of the study

There are few researches done in loan management of commercial banks. Loan management is one of most important aspect of the bank. The study of analysis of loan management of the chosen selected banks would be beneficial to the shareholders, banking professionals, investors, teachers and students of banking management.

This study is focuses in the qualitative measurement of the selected banks. Similarly, the finding of the study will equally important t o other who is interested in knowing about this particular bank. Last but not the least, it will provide relevant and pertinent literature for the future research on the area of loan management of the banks.

## 1.7 Limitation of the study

Since, the study is focusing to fulfill the partial fulfillment for the requirement course of MBS of T.U. It has some limitation. We have limited resources and may be difficult to explore researcher to find out new aspect. Reliability of statistical tools used and lack of research experience are the major limitation and some other limitations can be enlisted as follows:

- ) This research is limited to the lending aspect mainly with the loan and advanced only.
- ) The secondary data is used to analyze and interpretation for result. So the accuracy of the finding depends on the reliability of available information.
- ) In some extent, the data published on he website of related banks has been taken.
- ) Due to time and resource factor only two commercial banks are taken for the study.
- ) The study covers the time period of 2006/2007 to 2010/2011
- ) There could be many factors affecting loan management decision. However only those factors related with lending policy has been considered in this study.

## 1.8 Organization of the study

This study has been organized into five chapters.

### **Chapter-1: Introduction**

The first chapter deals with the subject matter consisting introduction, background of the study, statement of the problem, objective of the study, significance of the study, limitation of the study and organization of the study.

## **Chapter 2: Review of Literature**

The second chapter is mainly focused with literature review that includes a discussion on the conceptual framework on loan management and review of major – studies relating with lending decision.

## **Chapter 3: Research and Methodology**

The third chapter describes the research methodology used to conduct the present research. It deals with research design, sources of data, data processing procedures, population and sample; period of the study, method of analysis and financial and statistical tools.

## **Chapter 4: Data Presentation and Analysis**

The fourth chapter is concerned with analytical framework. It includes the analysis of financial indicators. Analysis of mean, correlation coefficient, regression analysis, trend analysis and financial analyses, the major findings are included are the end of the chapter.

## **Chapter 5: Summary, Conclusion and Recommendations**

The fifth chapter includes the summary, conclusion and recommendations of the study which deals about the main theme of study and comparison of lending policy of the banks with recommended for improvement of loan management of the selected banks. The bibliography and annexes are also incorporated at the end of the study.

## CHAPTER 2

### REVIEW OF LITERATURE

Review of literature mainly covers two parts. The first section of this chapter includes theoretical framework whereas second part is confined to review of the previous studies carried out by the various researchers. In this chapter, the overall concept and view of “financial performance” will be streamlined through the review of relevant literature related to this study. This chapter includes the conceptual framework, review of empirical studies, review of Nepalese study and research gap.

#### **2.1 Conceptual Framework**

Bank is considered as the backbone in the development of the national economy. It is a financial institution, which acts as a transaction of money by accepting various types of deposit, disbursing loans and rendering other financial services. So, among the various function to provide loan to the environment of the investment and the bank and the bank has the major role in creating such an environment.

Banks plays vital role in the economic development of a country. In fact, in the modern industrialized and service oriented era. The availability of the banks with competitive services is the measure of economic development of a country. While many people believe that banks play only a narrow role in the economy taking deposit and making loans the modern banking has had to adopt new roles in order to responsive to public needs. The principal role that a bank today play are:

#### **The intermediate role:**

Transferring the saving received primarily from the households into credit (loans) for business firms and other in order to make investments in the new building, equipment and other capital goods.

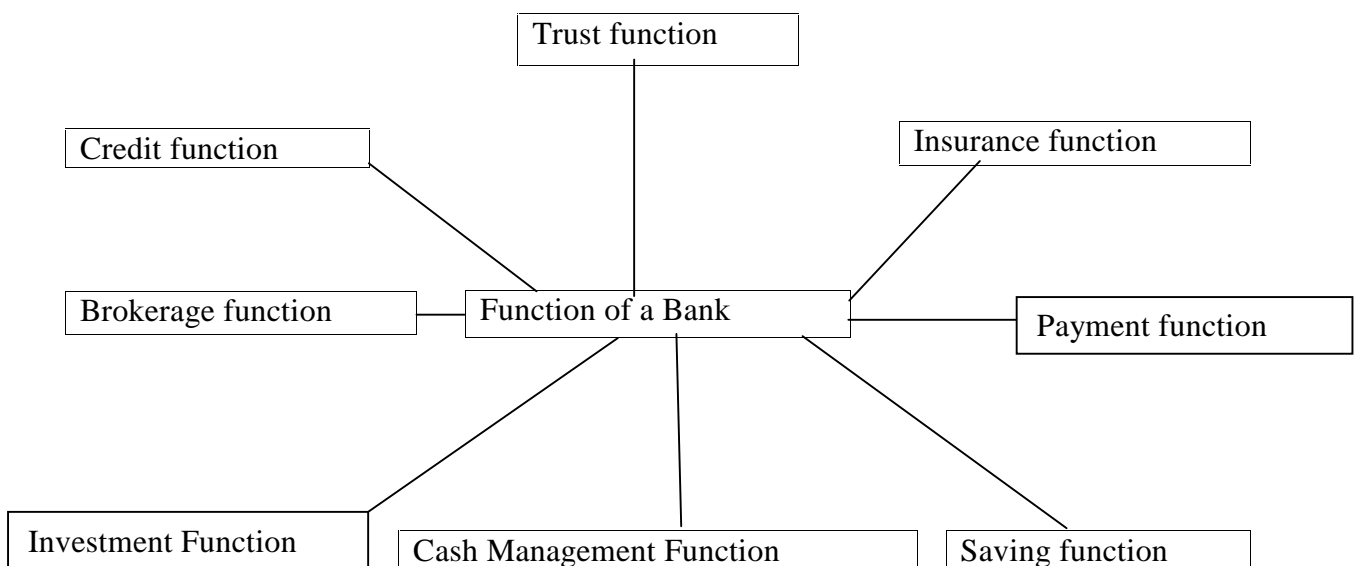
## The Payment Role

Carrying out payment for goods and services on behalf of their customer (such as by issuing and clearing cheque and dispersing currency and coins.)

## The Policy Role

Servicing as a conduct for government policy in attempting to regulate the growth of the economy and pursue social goal. Some of the vital functions performed by a full banking service institution today are summarized in the figure below.

**Figure 2.1**  
**Functions of a Bank**



## The Guarantor Role:

Starting behind the customers to pay off the customers debt when those customers are unable to pay (such as by issuing letters of credit). Some of guarantees are big bond, performance bond etc.

## **The Agency Role**

Acting on behalf of the customers to manage and protect or issue and redeem their securities.

According to the statistical data of NRB 2011, the following situation of the commercial banks has been identified.

- ) There are 32 commercial banks in the country as of mid-November 2011. the number of commercial banks branches as of mid-April 2011 is 541 of which 390 are branches of commercial banks and other of newly commercial banking activities.
- ) Capital funds of these banks have increased to Rs. 3235.3 million in mid- July 2011 from Rs. 27600.5 million in mid –July 2011. the drastic increased in total capital fund in mid- July 2011 as compared to mid- July 2010 is due to Rastria Banijya Bank was positive retained earnings. The retained comings figure of Rastria Banijya Bank was not included in mid July 2010. the total capital funds consists of Rs. 3000 million paid- up capital, Rs.1920.3 million statutory Reserves, Rs. 27430 million other reserves and retained earning. Over the period, paid- up capital, statutory reserves and other Reserves have increased by 9 percent. 19 percent and 105.4 percent respectively while retained earning decreased by quite a large percentage.
- ) Deposited have reached 35111.3 million in mid- July 2011 from Rs. 22072.1 million in mid-July 2010 with a growth of 59.07 percent of total deposit in mid- July 2011, current deposit constitutes Rs. 39412.9 million saving deposit constitutes Rs.161577.3 million and others (call demotists and other) constitutes Rs. 109042.5 million , on average , grew at as annual role of 44.5 percent during the period of the 2000 to 2011 in which the highest growth rate (23.98%) was recorded in the year 2001 and the lowest (1.85%) in the year 2006.
- ) Total borrowing by commercial banks have shown a mixed trend over the period 2004 to 2011. The total amount of borrowing, which was Rs. 12358.8 million in mid- July 2004, has increased to Rs. 16427.9 million in Mid- July

2008. it again increased to Rs. 18095.1 million in Mid – July 2009 and then showed an increasing trend up to mid-January 2010 to Rs. 21744.5 million and decreased to Rs. 20981.3 million in mid- July 2010 of the total borrowing in mid- July 2010., borrowing from foreign banks constitute 20.2 % , 48.6% and 18.50% respectively.

) Liquid funds continuously increased from 2004 to 2011 and reached Rs. 115822.2 million from Rs. 63337.6 million. It declined to Rs. 50369.3 million in mid- July 2005 and further decline to Rs. 41329.2 million in mid –July 2007 and increased to Rs. 107156.4 million in mid-July 2010.

) Loans and advances as average have registered annual growth rate of 17.42% for the period of mid – July 2004 to mid – July 2011. Compare to mid-July 2010, loans and advances went up by 21.42% and reached to Rs. 25434.7 million in mid – July 2011.

Out of the total loans and advances in mid –July 2011, lending to private sector and claims on Government enterprise constitute Rs 24246212.3 and Rs. 2346.4 million respectively – registering growth rate of 15.83 % in private sector where as the claims on Government enterprises decreased by 12.25 % in mid- July 2011 compare to mid -July 2010. Interest accrued in average has increased by 25.65% annually between mid-July 2004 to mid- July 2011, recording Rs. 56460.8 million in mid- July 2010 from Rs. 32345.5 million in mid-July 2004 (NRB Samachar, - 2068:25).

### **NPL in the Nepal and the Other Countries**

Non- performing loan was the serious problem not only in national banking but also in the international banking. Non – performing loans was. 8.8% in India, 22% in China, 15.5% in Thailand and 2% in Japan (NRB Samachar, 2063:27).

In September 30, 2001 of the Latin American countries, among the 8 crore dollar share capital 7.51 crore dollar was non – performing loan was very high because the two public banks (Nepal Bank Limited and Rastria Banijya Bank) have very huge amount of non –performing loans. Few years ago, the published sources showed that the Nepal Bank limited has 52% of non- performing and Rastria Banijya Bank has 52% of non – performing was and these two banks have around 35 Arab rupee non performing loans and responsibility of non performing loans per Nepali has one thousand and six hundred and fifteen rupees and it occupies 8% more than the per capita income o the year (NRB Samachar, 2063:32).

### **Sources of Major Problem in Credit Risk Management**

Effective credit risk management allows a bank to reduce risks and potential NPLs. It also offers other benefit. Once banks understand their risk and their costs, they will be able to determine their most profitable business and thus j, credit-risk strategy supported by organizational changes, risk measurement technique and fresh credit process and systems. In the context of Nepal, the sources of major problems in credit risk management are as follows (Ramamurthy, 2004:3-5).

- (i) Financial statement (including audited) do not reflected a “true and fair view” of the business entity due to creative accounting. The audited financial statement as submitted by the customers do not reflect details relating to
  - ) Encumbrance’s change on the company’s current/ fixed assets plus to whom they are changed.
  - ) Details of group company lending/borrowings
  - ) Status of income assessment etc.
  - ) Contingent liabilities.
  - ) Accounting policies.



- ) Delegation of finding authority is based on seriously and not a complexes of the concerned officials.
- ) No exchange of credit information/ lack of transparency among the competition banks giving rise to multiple banking (some customers having facilities with different base) complicating to excessive shortfall etc.
- ) Absence of :

Risk based pricing methodologies

Customer risk rating methods

Facility risk rating models

- ) Pronounced name lending.
- ) Collateral based lending instead o need based/ cash flow base lending.
- ) Over banked center contributing for severe competition and price cutting.
- ) Lack of corporate governance
- ) Permissive banking practice including names, lending, multiple banking etc.
- ) Macro level scenario of political in ability slow growing economy, small domestic market.
- ) Ineffective judiciary
- ) Cross border risk disappearance of promoters
- ) Inadequacy of law to deal with crime like cheating, misfeasance.

## **2.2Review of Empirical Studies**

A bank is a government regulated, profit making business that operates in competition with other banks and financial institutions to server the saving ant credit needs of its customers. The primary business of banks is accepting deposit and leading money. Banks accepts deposit for customers who want the safety and convenience of deposit service and the opportunity to earn interest on their excess funds (Sapkota, 2001:54).

Bhattacharya in his book," banking strategy, credit appraisal and lending decision has put the recommendation to Tandon committee. He has prepared this report in 1975; however these recommendation stills deserve great significance in the sector of credit appraisal. The system proposed by the committee enjoying upon the banker are as follow:

- a) To assess the need based credit of the borrower on a rational basis.
- b) To ensure proper and use of bank credit by keeping a closer watch on the borrower business and thus ensure safety of the banks funds.
- c) To improve the financial discipline of the borrower and
- d) To develop healthy banker borrower relationship.

The committee examined the existing system of lending and recommended the following broad changes in lending system.

- a) The credit needs of borrowers are assessed on the basis of their business plans.
- b) Bank credit only be supplementary to the borrowers resources and not in replacement of them ,i.e. banks mot to finance one hundred percent of borrowers, requirement,
- c) Borrowers are required to old inventory and receivables according to norms prescribed by the reserve bank of India from time to time.
- d) Credit may be available in different components only, depending upon the nature of holding of various current's assets.
- e) In order to facilitate a close watch on the operations of borrowers, they are required to summit, at regular intervals, data regarding their business and financial operations, both for the past and future period.

The committee including stores and other items uses in the manufacturing process are:

- a) Raw material including stores and other items uses in the manufacturing process.

- b) Stock in process
- c) Finished goods
- d) Receivable
- e) Spares

“Bank growth and profitability are the result of carefully forecasting funding needs, competitively attracting funds efficiently borrowing funds and effectively investing, funds in safe but profitable earning assets. Depending on a bank’s size and location and on local and national economic conditions, a bank may have adequate, relatively stable sources of low cost funds or it may have to compete regularly and aggressively for funds at high market prices for an increasing number of banks, the second situation is becoming the norm as more, the second situation is becoming the norm as more and more banks face increasing pressure to attract adequate funds at reasonable costs (Bhattacharya, 1998:3209).

In the word of S.P Singh and S. Singh, credit policies of banks are condition to great extent by the national policy framework, every banker has to apply his own judgment for arriving at a credit decision, keeping of course, bankers and credit policy also in mind (Singh and Singh, 1983:34).

H.D Gross stated lending is the essence of commercial banking; consequently the formulation and implementation of sound lending policies are among the most important responsibilities of bank directors and management. Dell conceived lending policies are essential in a bank to perform its credit creating function effectively and minimize the risk interest in any intention of credit (Gross, 1963:45).

Shrestha (1995) said that the commercial banks should not concentrated on the specific sector but should fulfill the credit need of various sector of the economy including agriculture, industry , commercial and social sector of the economy

service sector. The commercial banks should very effective while providing loans. While providing loans, the bank should think on the maximizing the economic growth of the country as well as the profit from providing the loan for the operation of the country.

### 2.3 Review of Nepalese Studies

The banking sector is severally affected by the Non- performing loans problem. It is estimated that the NPL of the Nepalese Banking system is around 16 %. Therefore, there is no doubt that it has a serious implication on economic performance of the country (Dhungana, 2058:127).

NRB register the one thousand five hundred and thirty eight borrowers, who have not repaid the loan they received from the fifteen major commercial banks of the country, in ‘black list’.

The black listed number of borrowers and the amount of different commercial banks are reported as follows.

**Table 2.1**

**Bank Wise Black Listed Borrowers and the Account Due**

Banks	No. of Black Listed Borrowers	Amount Due from them (in million)
RBB	546	5526.66
NBL	673	3904.47
HBL	57	383.04
NBBL	45	317.23
NABIL	32	229.3
BOK	17	116.45
NSBIBL	26	102.96
NIBL	17	56.06
NSBI	9	33.89
NCCBL	19	32.38
SCBNL	4	19.13
NICBL	2	7.19
LBL	2	.64

SOURCE: NRB Report, 2068

The principal loan amount due from these one thousand five hundred and thirty eight borrowers in different banks is totaling Rs. 5731 million 609 thousand. the interest due in total Rs. 5,717 million 8 hundred thousand (Bhatta, 2006:56).

**F. Morris (1990)** in the discussion paper has concluded that “most of the banks concentrated on compliance with central bank rules on reserve requirements, operating efficiency and soundness of bank investment management has largely been overlooked. The huge losses now found in the banks portfolio in many developing countries are testimony to the poor quality of this oversight investment function.

He further adds that mismanagement in financial has involved inadequate and over optimistic loan appraisal, tax loan recovery , high risk diversification of lending and investment high risk concentrated, concocted and insider lending, loans mismatching, this has led many banks of developing countries the failure of 1980’s “(Morris,1990:81).”

**Sunity Shrestha (1995)** has presented with objective to make analysis of commercial banks lending to the Gross Domestic product (GDP) of Nepal. She has set hypothesis that there has been positive impact of lending of the commercial banks to the GDP. In research methodology she has considered GDP as the dependent variable and various sectors of lending dependent variable and various sectors of lending visa, agriculture, industrial, commercial service and social sectors as independent variables. A multiple regression techniques have been applied to analyze the contribution.

The multiple analyzes have shown that all the variables except service sector lending has positive impact on GDP. Thus in conclusion, she has accepted the

hypothesis i.e. there has been positive impact by the lending of commercial in various sectors of economy, except service sector investment. (Shrestha, 1995:18).

“A study on deposit and credit of commercial banks in Nepal concluded that the credit deposit ratio would to 51.30%, other things remaining the same. In Nepal that was the lowest under the period of review. Therefore, he had strongly recommended that the joint venture banks should to give more credit entering new fields as far as possible; otherwise, they might not be able to absorb even the total expenses (Shrestha, 1998:15).”

In the same way, **Mr. Dev Lal K.C. (1996)**, in his article states, “The changing face of the banking sector and the Nepal Government recent budgetary policy “concludes the following an introduction of the reform in the banking sector as an integrate part of the liberal economic policy, more banks and finance companies have come up as a welcome measure of completion. However because of poor investment policies and lack of internal control the two governments controlled banks, Nepal Bank Ltd and Rastria Banijya Bank has awarded the management contact to foreign companies to improve the condition of non performing assets. The policy of giving management is professional consultant is a part of the financial sector reform policy of NRB. (K.C. 1996:27-32).

**Raja Ram Khadka (1998)** in this study entitled “a study in the investment policy of Nepal Arab Bank Ltd. In comparison to other joint venture banks of Nepal” has recommended that, the bank should utilize its deposit account as loans and advances to get success in competitive banking investment. Loans and advances are the profitable asset for the banks but ineffective management of the loans and advance’s create the serious. Problems to the banks and the major reason behind the bank liquidation and failure could be the weakness of the loan management.

**Rawat Bahadur Karki(2000)** has summarizes some of the challenge through his article, “ the financial sector is facing major challenges of high NPL of the banking sector, which comes around 18% of the total loan but it the loan classification is made according to least international practice , it is assumed to exceed 30% credit demand is being met largely by non- institutional source i.e. private money lender, merchant trade, individual and land lord at very high rate of interest , which is 2-3 times higher then of institutional source, this shows that the unorganized financial sector is playing a major role in Nepalese economy . The liquidity has a major role in Nepalese economy. The liquidity position of the banking sector is rated as high as 24%, but the productive sector of the economy is starved by credit crunch. This has created a paradoxical situation on banking sector. He has given some suggestions to improve the Nepalese financial sector.

The financial institution especially CBs have to identity new area of investment to increase loans and advances in reducing the liquidity position.

With the rapid growth of the number of banks and financial institution, deposit insurance scheme is a must. The principle reasons for introducing such deposit insurance should be one of the social justice rather than economic justification in order to protect the interest of the small depositors. In this condition, this scheme should be expedited to implement (Karki, 2000:26-30).

A study conducted by **Upendra Shrestha (2000)** regarding the investment practices of joint venture banks in Nepal with special reference to NABIL Bank Limited, Started Chartered Bank Nepal Limited and Nepal NSBI Bank Limited has figured out the problem and conclusion as follows.

“Commercial Banks are more emphasized to be making loans on short term basis against movable merchandise. Commercial Banks have a lot of deposit but very

little investment opportunity. They are even discouraging people by offering very low interest rate and minimum threshold balances.”

Commercial Banks invests their funds in limited areas to achieve higher amount of profit. This regarded as a very risky step, which may lead to lose in profit as well as principle. The credit extends by commercial Bank to agriculture and industrial sector is not satisfactory to meet the growing need of the present situation.

He has concluded that the liquidity position of NABIL and SCBNL have not found satisfactory, it is therefore, suggested them to improve cash and bank balance to met current obligations SCBNL's loan and advance to total deposit ratio is lower at all, it is recommended to follow liberal lending policy for enhancement of fund mobilization. It is recommended to NSBIBL that is has to invest its fund in share and debenture of other companies. It is suggested to enhance off balance sheet transaction, diversifying their investments, own new branched, play merchant banking role and invest their risky assets and shareholders fund to gain higher risky assets and shareholder fund to gain higher profit margin. NABIL and SCBNL are recommended to increase cash and balance to meet current obligations and loan demand.

The above study shows that Mr. Shrestha has concluded some conflicting statement which is obviously not matching with his statement of problem. His recommendation ignores the industry average and also failed to figure out what is right in the industry like banking along the excess of investment or loans and advances. And he thinks liberal lending policies solve the problem to increase the level of loans and Advances.

But somewhere in his recommendation, he has warned commercial Banks to increase the level of loan and Advances and suggested them to increase the level of investment in government securities or in other safe instrument just to avoid the



risk arising from lending. From this, it can be concluded that Mr. Shrestha has made his entire conclusion absolutely and has not made any relative analysis of the pros and cons of the entire factor affecting his study.

A study conducted by Lila Prasad Ojha (2002) entitled “lending practices: A study on NABIL Bank Limited, Started Chartered Bank Limited and Himalayan Bank Limited” has find found out that the measurement of lending strength in relative term has revealed that the total assets to total liability of SCBNL has the highest ratio . However the performance of other two banks has not deviated for from the mean ratio of SCBNL and the combined average. SCBNL tendency to invest in government securities has resulted with the lowest ratio of loans and advances to total assets ratio. The steady and high volume of loans and advances throughout the years has resulted NABIL ratio to be the highest. The ratio of loans and advances and investment to deposit ratio has measured the portion of total deposit that is used to increase the income of the banks irrespective of the profiles of its application. NABIL has deployed the highest proportion of its total deposit in earning activities and this ratio is significantly above the ratio of other two banks. The combined ratio is highly deviated from the mean ratio of NABIL and SCBNL. This is the indicative of that in fund mobilizing activities NABIL is significantly better than SCBNL.

Similarly the absolute measures o lending strength has revealed that the mean volume of net assets and deposit is highest in SCBNL with moderate variation. The volume of net assets of HBL is the least sue to the low share capital, reserve and surplus in its capital mix. But the volume contributed by NABIL in the greatest in the study of period. NABIL has the best contribution in productive as well as industrial sector in economy.

He has further concluded that the overall liquidity strength of SCBNL can be considered the best among the banks. However the liquidity risk arising from interest rate in SCNNL is the most likely. Since the market is highly sensitive

towards the interest rate an SCBNL has generally been offering low interest rate as compare to the banks. The analysis of lending strength of HBL in loans and advances in the best however loans and advances, investments to deposit ratio have upgraded the performance of NABIL. If HBL strength succeeded in collecting the less chapter source of strength fund of HBL would push the performance of NABIL and SCBNL for behind in the coming future. Also the contributions made buy HBL in the productive sector of economy is highly appreciable and the best among these the commercial banks. The highest growth rate, proportionately high volume of loans and advances and the best contribution in agriculture and priority sector and the high level of deposit mobilization of HBL has put his level of deposit mobilization of HBL has put this bank in the top positive in the lending function as demand buy national priority , national development . However the better activity ratio of SCBNL has proved this bank then best in managing the lending portfolio according to the demand of profit-oriented business. The high volume of lending activities and high volume of productive sector loan of NABIL has put this bank best thin but in ratio of SCBNL has proved this bank best in managing the lending portfolio according to the demand of profit-oriented business. The high volume of lending activities and high volume of productive sector loan of NABIL has put this bank in the top position in absolute term.

On the basis of findings and conclusion he has recommended for the banks as the liquidity position of all these three banks was found to be high. He has recommended the banks to look upon the new area of lending and investment. The rural economy has always been realizing the credit needs and the dominance of non- organized money lender in this area has been prevailing. To compromise between the liquidity and credit need of rural economy these banks are highly recommended to expand their credit in this area. SCBNL is recommended to give extra priority on productive and priority sector loan. The increasing provision as loan loss and high volume of non-performing assets may have caused due to the

failure of industrial and agricultural sector. NABIL's increased non-performing, asset may have caused due to the accumulated bad debts that is kept behind the curtain to show the efficiency of management.

He has used different statistical tools like standard deviation, correlation, trend analysis and financial tools for the data analysis and presentation. In his study he has also taken sector wise loan- priority sector, productive sector etc, the different sector wise loan classification are presented and analyzed only secondary data has been used for the study, the overview of theoretical aspect of the lending practices of the banks has not been analyzed. He has taken five years data from 1997 to 2001 for study of lending practices of NABIL, SCBNL and HBL (Ojha, 2002:60-68).

**Sabitri Shrestha (2003)** in her study entitled " impact and implementation of NRB Guidelines ( Directive of Commercial Banks – A study of NABIL Bank limited and Nepal NSBI Bank have been fully implementation the NRB's directives. Capital adequacy Ratio of NABIL and Nepal NSBI are 13.40% and 12.86% respectively, which are more than 9%. Banks are following the directives but in some cases such like supplementary capital and balance of NRB there is shortfall. The excess amount of total deposit in balance of NRB there is shortfall. The banks have categorized the loan amount into four different categories as per NRB's directives. The increasing loan loss- providing amount decreased the profit of the banks. The change in the single borrower limit has brought down the limits of the fund based and non-fund based loans which have resulted to reduced loan exposure to banks.

In her thesis she has recommended that both NABIL and NSBI banks to increase its supplementary capital as it has shortfall in comparison with NRB guidelines and to meet the supplementary capital adequacy ratio even though it can be compensated

by the compensated by the excess amount of core capital . The supplementary capital needs to be increased by Rs. 122.74 million in NABIL Bank and Rs. 125.57 million in Nepal NSBI Bank. She says liquidity and profitability are like two wheels of one cart so banks cannot run in the absence of any one of them. One can be activated only at the cost of the other. Only liquid banks can attract loan core deposit, which help in reducing interest expanses and gibe loan to good customer at lower rate, which results in requirement of less provision and high net profit. So banks should increase their primary reserve now to maintain the liquidity risk due to scrap out the secondary reserve. On the basis of findings, NABIL Banks has a shortfall of Rs. 140.74 million thus NABIL has to increase its balance at NRB by such amount for better performance even after adding 1% excess amount of cash of total deposit.

Primary data has been used in order to get the view of banks on the directives issued by NRB. Question related to NRB directives 1.5 are used to collect for the study and implementation of directive by commercial bank. Secondary data are also used for the analysis this study the general directives issued in 2001 and 2002 are considered for the study. In issued directives of 2001 and 2002 there are 10 directives but only 5 directives i.e. (1-5) are highlighted and taken in the study.

**Ram Prasad Kafle (2005)** in his study entitled “Non- performing loans of Nepalese commercial banks. “The researcher’s mean objective of the study was to know the problems of the non-performing loans and its effect in the ROA and ROE of the Nepalese commercial banks and to find out whether the Nepalese commercial banks are following the NRB directives regarding loan loss provision for non-performing loan or hot.

Through the research he has found that the no banks have been following NRB’s directives regarding the loan loss provision. he also concluded that the return on

assets (ROA) and return on equity (ROE) of the bank deposited upon the NPL's should be controlled for this bank should provide necessary training regarding loan management to the manpower's. In order to remove, the NPL's banks should take enough collateral so that banks can recover its loan amount. For the loan loss provision as per the NRB directives and to reduce the NPL, The bank management should be effective and the NRB's monitoring and regulation is necessary.

A study conducted by **Rajan Subedi (2006)** entitled "A Comparative Study of Financial Performance between Himalaya Bank limited and Everest Bank limited" of the period from 2000 to 2005 has outlined his major finding and conclusion as follows.

"The mean and total loans and Advances to total saving deposit ratio of NSBI is greater than that of HBL and the coefficient of variation between the ratios of HBL is less than NSBI. It means that the ratio of HBL is less than NSBI is more uniform than NSBI. According to analysis, it found that NSBI is more employing its saving deposit in term of loans and advances than that of HBL. So, loans and advances to total saving deposit ratio appear better in NSBI than HBL.

The mean total investment to total deposit ratio of NSBI is significantly greater than that of HBL, but the coefficient of variation between the ratio of HBL, but the NSBI. it means that the variability of the ratios of HBL is more consistent than that of NSBI. According to analysis, it if found that NSBI is more successful in utilizing its resources an investment.

However, he failed to give his overall conclusion regarding the superiority of the financial performance of these two banks during the period of the study (1996-2000). He has also put several recommendations out of which few important recommendation are outlined here.

The liquidity of a bank many of affected by external as well as internal factors such as the interest ratio, supply and demand position of loans, saving to investment situation. Central bank requirements and the growth or slackening tending policies management capability. HBL has maintained the ratio of cash and bank balance to total deposit considerably lower than that of NSBI. So, NSBI is recommended to increase cash and balance to meet loan demand.

Mr. Subedi recommended that HBL should increase its cash and bank balance to meet loan demand does not sound logical since no where in his study he has conclude that HBL has failed to meet its demand loans. Being the low level of cash and bank balance as compare to another specific bank dies not necessary conclude the necessity of increasing this asset.

A study conducted by **Prem Krishna Shestha (2007)** in his thesis entitled “profitability Analysis of Standard Chartered Bank Nepal Limited and NABIL Bank Limited” found out the following:

- ) SCBNL had more consistent operating efficiency ratio than NABIL bank limited during the study period.
- ) Both of the banks data showed that more than 90% of their total liabilities paid interest. These banks showed that the smaller portion of their interest bearing liabilities paid as interest expenses.
- ) Both the banks weighted average cost of deposit ratio was found to be at decreasing rate.
- ) NABIL bank had lower EPS than SCBNL, which indicated that the performance of SCBNL was better than NABIL.
- ) SCBNL was paying more dividend than NABIL bank limited during the study period. The amount of dividend was almost double for SCBNL than NABIL . it meant that NABIL was in need of fund, so it was paying fewer dividends and adding more amounts under the head of retained earnings.

- ) Among the total income, more than 75% of the income came from interest sector. That indicated the main source of income was interest for both the banks.
- ) The operating expenses ratio over total expenses comprised of more than 40% for both the banks.
- ) NABIL had fluctuating return on total assets than SCBNL. SxBNL had higher return on equity than NABIL. Return on equity of NABIL was more fluctuating than that of SCBNL. SCBNL had higher return on equity ratio than that of NABIL.
- ) SCBNL had also higher interest earned to total asset ratio than NABIL.
- ) The total interest income to total earning assets ratio of both the banks were found decreasing over the years, which indicates a negative sign to the bank's performance.
- ) NABIL Bank's net profit margin ratio was higher than that of SCNNL. Similarly, net interest margin of NABIL was also higher than that of SCBNL (Shrestha, 2011:76-77).

## **2.4 Research Gap**

Financial scenario and effectiveness of the banks has been changed in due period of time because of increase of number of financial institution in Nepalese economy. And it is observed that it is essential to study effectiveness of loan management of commercial banks taking samples of two banks: Nepal Bangladesh Bank Limited and HBL Bank Limited to support in fulfilling research gap. The review of above relevant literature has contributed to enhance the fundamental understanding and knowledge, which is required to make study meaningful and purposive. There has been lots of article published on field of investment policy. Loans and advances of commercial banks .there are various research available on investment analysis and policy of commercial banks, impact and implementation of NRB guideline I commercial banks but there are not sufficient researches available on lending aspect of commercial banks. In addition to this, no one has

done a study on “loan management” with reference to Nepal Bangladesh Limited and HBL Bank Limited. Therefore the research attempts to study in this area. To know the loan management of these two banks will probably be the first study in this subject matter. So, this study will be fruitful to those interested person parties scholars, professor, students, businessman and government for academically as well as policy perspective.



## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

This chapter is related to research methodology in this study. Research methodology is a way to systematically solve the research problem. In other words, research methodology describes the methods and processes applied in the entire aspect of the study. It may be understood as a science of studying how research is done scientifically. It is necessary for the researcher to know not only the research methods but also the methodology (Kothari, 1984:10-13). This chapter includes the research design, population, and sample.

#### **3.1 Research Design**

Research design serves as a framework for the study, guiding the research instruments to be utilized, and the sampling plan to be followed. In other words, research design describes the general plan for collecting, analyzing, and evaluating data. Research design is the planned structure and strategy of investigation conceived to obtain answers to research objectives through analysis of data. The study is based on primary as well as secondary data. So the descriptive and analytical research designs have been used.

#### **3.2 Population and Sample**

A small portion chosen from the population for studying its properties is called a sample, and the number of units in the sample is known as the sample size. The method of selecting for study a small portion of the population to draw conclusions about characteristics of the population is known as sampling. Sampling may be defined as the selection of part of the population on the basis of which a judgment or inference about the universe is made. Here only 2 sample joint venture

commercial banks have been taken out of 32 commercial banks. All the commercial banks in Nepal are the population of the study. The sample taken from the commercial banks are as follows:

TOTAL BANKS	SAMPLE TAKEN
32 Commercial Banks	Himalayan Bank Ltd. Nepal Bangladesh Bank Limited

### **3.3 Nature and Sources of Data**

The research is based on secondary source of data for research purpose, published financial statements (i.e. Annual report) of concerned banks were collected. Similarly, financial statement of commercial banks and various markets related information were collected and tabulated in spreadsheet. Such secondary information was gathered from the share department of the concerned banks and Security Board of Nepal. In addition, an answer on certain queries made to staffs of concerned organization personal enquires and discussions were also being conducted for clarification and verification of collected data and for recommendation.

### **3.4 Analysis of Data**

To meet the objectives of the study, the sources of secondary data of commercial bank are analyzed by using financial tools such as ratio analysis. Simple descriptive analysis tools such as frequency, Mean, standard deviations are used. The ratio analysis involves comparison for a useful interpretation of financial statements. The quantities judgment regarding loan management of a firm can be done with the help of rate analysis. For the analysis of the data the financial and statistical tools relevant to the topic are used. They are as follows:

### **3.4.1 Financial Tools**

#### **Ratio Analysis**

A ratio analysis is simply the number expressed in terms of another and as such it expresses the quantities relationship between any two numbers. Ratio can be expressed in terms of percentage, proportion and as coefficient. The technique of ratio analysis is a part of the whole process of analysis of financial statements of any business of industrial concern especially to take output and credit decision. Through this technique a comparative study can be made between different statistics concerning varied facts of a business different statistics concerning varied facts of business units. Just as the blood pressure, pulse and temperatures are the measure of the health of an individual, so the ratio analysis measures the economic financial health of a business concern. Thus, the technique of ratio analysis is of a considerable significance in studying the financial stability, liquidity profitability and the quality of the business and industrial concerns (Kothari, 1994:169).

For the study period following ratios are analyzed.

- 1) Current Ratio
- 2) Liquid fund to Total liabilities Ratio
- 3) Liquid funds to Total Deposit Ratio
- 4) Total Assets to Total liability Ratio
- 5) Loans and Advances to Total Assets Ratio
- 6) Loans and Advances and Investment to Total Deposit Ratio
- 7) Loans and Advances to Shareholders Equity
- 8) Interest Income to Total Income Ratio
- 9) Interest Expenses to Total Deposit Ratio
- 10) Interest Income to Interest Expenses Ratio
- 11) Growth Ratio of Total Deposit
- 12) Growth Ratio of Loans and Advances
- 13) Growth Ratio of Total Investment
- 14) Growth Ratio of Net Profit

**1) Current Ratio:** It establishes the relationship between current assets and current liabilities. It is

Computed by dividing current assets by current liabilities. It is calculated as follows :

$$\text{current ratio} \times \frac{\text{current asset}}{\text{current liabilities}}$$

**2)Liquid fund to Total liabilities Ratio:** It establishes the relationship between liquid fund and current liabilities. It is computing by dividing liquid fund to total liabilities. It's formula is :

$$\text{Liquid fund to Total liabilities Ratio} \times \frac{\text{Liquid fund}}{\text{Total liabilities}}$$

**3) Liquid funds to Total Deposit Ratio:** it measures the position of the liquid fund on total deposit which is calculated by dividing to total deposit. Its formula is as follows:

**4) Total Assets to Total liability Ratio:** this ratio measures the relationship between total asset and total liabilities. It is computed by dividing total assets to total liabilities. Its formula is as follows:

$$\text{Total assets to total liability ratio} \times \frac{\text{Total assets}}{\text{Total liabilities}}$$

**5) Loans and Advances to Total Assets Ratio:** this ratio judge the position of loan and advances o0n total assets. It is calculated by dividing loan and advances by total assets. Its formula is as follows:

$$\text{Loans and Advances to Total Assets Ratio} = \frac{\text{Loans and Advances}}{\text{Total assets}}$$

**6) Loans and Advances and Investment to Total Deposit Ratio:** This ratio measures the position of loan and advances and investment on total deposit. It is computed by dividing loan and advances and investment by total deposit. it is calculated as:

$$\text{Loans and Advances and Investment to Total Deposit Ratio} = \frac{\text{Loans \& Advances \& Investment}}{\text{Total deposit}}$$

**7) Loans and Advances to Shareholders Equity:** it is calculated by dividing loans and advances to shareholders equity. Its formula is as follows:

$$\text{Loans and Advances to Shareholders Equity} = \frac{\text{Loans and Advances}}{\text{Shareholders Equity}}$$

**8) Interest Income to Total Income Ratio:** it is measured by dividing Interest Income to Total Income. Its formula is as follows:

$$\text{Loans and Advances to Shareholders Equity} = \frac{\text{Interest income}}{\text{Total income}}$$

**9) Interest Expenses to Total Deposit Ratio:** it measures the position of the Interest expenses on total deposit. It is computed by dividing interest expenses to total deposit. Its formula is as.

$$\text{Interest Expenses to Total Deposit Ratio} = \frac{\text{Interest expenses}}{\text{Total Deposit}}$$

**10) Interest Income to Interest Expenses Ratio:** it measures the position of interest income on interest expenses, which is computed by dividing interest income to interest expenses. Its formula is as follows:

$$\text{Interest Income to Interest Expenses Ratio: } \frac{\text{Interest income}}{\text{Interest expenses}}$$

**11) Growth Ratio of Total Deposit:** it measures the growth ratio of the company or organization, which is compared by two years deposits i.e. current's year deposit and previous year's deposit. The calculation may show the increasing or decreasing rate of growth of the deposit. It is calculated by dividing current's year deposit by previous year's deposit. Its formula is as follows:

$$\text{Growth Ratio of Total Deposit: } = \frac{\text{current's year deposit}}{\text{Previous year deposit}}$$

**12) Growth Ratio of Loans and Advances:** it measures the growth rate of loan and advances comparative by current's year and last year's. It is calculated by dividing current year's loan and advances by last year's loans and advances. Its formula is as follows:

$$\text{growth ratio of loans and advances: } = \frac{\text{current years loan and deposit}}{\text{Previous years loan and advances}}$$

**13) Growth Ratio of Total Investment :** it usually measures the growth rate of total investment, which is computed by dividing current year's total investment and last year's investment. Its formula is as follows:

$$\text{Growth Ratio of Total Investment : } = \frac{\text{current years total investment}}{\text{Previous years total investment}}$$

**14)Growth Ratio of Net Profit:** it usually measures the growth rate of net profit, which is computed by dividing current year's net profit by previous year's net profit. Its formula is as follows:

$$\text{Growth Ratio of Net Profit} := \frac{\text{current years net profit}}{\text{Previous years net profit}}$$

### 3.4.2 Correlation Coefficient Analysis

The analysis identifies and interprets the relationship between the two or more variables. Karl-Person's Correlation Coefficient has been used to find out relationship between the variables in order to know the effect in one variable may have effect in the correlated variable. In our study relationship between the various variables. It is calculated by:

$$r = \frac{n \sum xy - \sum x \cdot \sum y}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

Where,

r = Correlation coefficient

n = Number of years

$\sum x$  = Sum of X series

$\sum y$  = Sum of Y series

$\sum xy$  = Sum of X and Y series

$\sum x^2$  = Sum of square of X series

$\sum y^2$  = Sum of square of Y series

x & y = Financial Variable of joint venture banks.

Correlation analysis describes the relationship between variables i.e. positive or negative. It helps to determine the following:

- ) A positive or negative relationship exists.
- ) The relationship is significant or insignificant.
- ) Establish cause and effect relation if any.

The statistical tool- correlation analysis is used in the study to measure the relationship between variables in determining whether the relationship is significant or not. For the purpose of decision making, interpretations are based on the following terms.

1. When,  $r = 1$ , then is perfect positive correlation.
2. When  $r = -1$ , then is perfect negative correlation.
3. When  $r = 0$ , then is no correlation.
4. When, 'r' lies between 0.7 to 0.999 (-0.7 to -0.999), then is high degree of positive (negative) correlation.
5. When 'r' lies between 0.5 to 0.6999 there is moderate degree of correlation.
6. When, 'r' is less than 0.5. There is low degree of correlation.

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



### **3.4.3 Trend Analysis**

Trend analysis is the analysis of a firm's financial ratio over time used to estimate the likelihood of improvement or deterioration in its financial condition. It is important to analyze trend in ratios as well as their absolute level, for trends give clues as to whether a firm's financial condition is likely to improve or to deteriorate.

## CHAPTER 4

### DATA PRESENTATION AND ANALYSIS

This chapter is related to presentation and analysis of data collected from various primary and secondary sources. The chapter has been divided into main three sections. The first part of the chapter involves the analysis of secondary data while the second part includes the analysis of primary data and the last part of the chapter includes the major findings of the study.

#### 4.1.1 Current Ratio

This is the crude measurement of liquidity ratio. It measures the ratio between total current assets and total current liabilities. The current asset include cash and band balance with cheque in hand, balance with NRB, money at call and short notices, investment in government securities, bills purchased and discovered loans, and advances and other current assets, similarly, current liability includes borrowing from other banks, deposit, bills payable, and the current assets.

**Table 4.1**  
**Status of Current Ratio**

Banks	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	1.0406	1.0359	1.0895	1.0850	1.0761	1.0654
NBBL	1.0128	1.0298	1.0275	1.0099	1.0126	1.01852

Source: Annual Report of HBL and Nepal Bangladesh Bank limited.

The combined mean ratio is 1.04196, if we measure the performance of these banks based in this mean, the performance of HBL is weak and the NBBL has maintained good liquid assets. The mean current ratio of HBL is 1.0654 and NBBL is 1.01852 which is highest than HBL. NBBL implies a high liquidity ratio.

Table measures the current ratio of two banks of five consecutive years. HBL has highest ratio in 2008/09 i.e.1.0895 and lowest ratio in 2007/08i.e. 1.0359.Similarly NBBL has highest ratio in 2007/08 i.e.1.0298and lowest ratio in 2009/10 i.e. 1.0099. The ratio is in fluctuating trend in both banks. The ratio has been ranged from 1.0359 to 1.0895 HBL. Table explains that the current ratio of NRB is 1.0099 to 1.0298 .The overall trend of current of the two based ratio is slightly changed.

#### 4.1.2. Liquid Fund to Current Liability Ratio

Since the current ratio gives only the short and crude idea of liquidity position of a firm, measuring its liquidity ratio depending on liquid fund is more significant. Liquid fund comprises of those assets, which can be converted into cash within a short period without decline in their value. Cash in hand, balance wit NRB, balance with other banks and money at cell included in calculating the liquid fund. The ratio measures a bank ability to discharge its current liability in an adverse condition without undergoing its liquidity risk.

**Table 4.2**  
**Liquid Fund to Current Liability Ratio**

Banks	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	0.00869	0.1713	0.0977	0.1536	0.0707	0.100398
NBBL	0.09297	0.1097	0.1685	0.079	0.01057	0.92148
Combined mean						0.096273

Source: Annual Report of HBL and NBBL.

Table 4.2 explains that the ratio has been ranged from 0.00869 to 0.1713of HBL and 0.01057 to 0.1685 of NBBL. The ratio of HBL of first two years has increasing trend; it is decreasing in 2008/09 year and then again increasing in

2009/10. The ratios of NBBL first three years have in increasing trend but it has fallen in 2009/10 and then again it has increased in FY 2010/11. Unlike current ratio, the liquid fund to current liability ratio has been declined. This declined in two banks has caused due to high degree of increase in investment and decreased or lower level of increase in placement.

#### 4.1.3 Liquid Fund to total Deposit Ratio

The deposit constitutes the major part of the banks liability. Flow of these liabilities is always uncertain in the bank's fund management. Hence, the ratio of liquid fund to total deposit indicates the banks' strength to meet uncertain flow of deposit.

**Table: 4.3**

**Loan Fund to Total Deposit Ratio**

Banks	Fiscal Year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	0.09112	0.1825	0.1267	0.1702	0.0783	0.1297
NBBL	0.09112	0.1193	0.1849	0.0841	0.1122	0.118324
						0.124012

Source: Annual Report of HBL and NBBL.

Above table explains that the ratio has ranged from 0.0783 to 0.1825 of HBL and 0.0841 to 0.01849 of NBBL .The trend of this ratio of HBL and NBBL seems similar in nature in 2007/08 and increased in the first two years as compared to previous year and has started to decline from FY 2008/09. The trend of this ratio has not deviated from liquid fund to current liability ratio and the up and down in this ratio has caused by the some reason. The combined mean ratio of these two banks is 0.1248.The mean ratio of HBL is 0.1297 and NBBL is 0.124012 and this is lowest ratio then HBL.

## 4.2 Measurement of Lending Strength

The lending strength of these two banks is measured in relative measures in this section. The relationship between various assets and liabilities of the balance sheet has been established to show the active strength of lending comparatively. An attempt is made to determine the lending strength in absolute figure of each bank, since these two banks are comparable in volume of deposit loans and advances and other variables also.

### 4.2.1 Total Assets to Total Liabilities Ratio

The ratio of total assets to total liabilities measures the volume of total liability in total assets of the firm. Then banking organization creates credit by way of lending activities and multiplies their assets many items, than their liability permits. Thus, this ratio measures the banks ability to multiply its liability into assets. It is always recommended to have higher ratio of total assets to total liabilities ratio. Since, it signifies overall increase of credit and overall development of the organization, Higher the ratio, higher the productivity and higher the s\assets conversion and vice versa.

**Table 4.4**

#### **Total Assets to Total Liabilities Ratio**

Banks	Fiscal Year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	1.0632	1.0645	1.0628	1.0623	1.0595	1.0625
NBBL	1.0571	1.0635	1.05980	1.0607	1.0483	1.0579
Combined Mean						1.0602

Source: Annual Report of HBL and NBBL.

Table 4.4 explains the ratio of liabilities and assets of concerned bank in respective years. All these banks have high degree of ratio. The overall trend of HBL is decreasing. The ratio has been ranging from 1.0654 to 1.0595 of HBL and 1.0635 to 1.0483 NBBL.

The combined mean ratio of these two banks over the period is 1.0602. The mean ratio of HBL is 1.0625 which is higher than the mean ratio of NBBL (1.0579). Taking the standard of mean ratio the performance of HBL is best and the ratio of NBBL is below the average. However, the ratio of these two banks represents a poor performance. The ratio should not be below 2 times in the developing country like Nepal. This represents that these two banks have not successfully converted their liability into asset. Table 4.4 explain that the ratio of two banks is decreasing in some extent. Looking this fact, it can be concluded that these banks are not utilizing their fund efficiently and effectively to extent, their liability permits them. As comparing between the banks the performance HBL can be regarded the best.

#### **4.2.2 Loans and Advances to Total Deposit Ratio**

Loan and advances are the major area of fund mobilization of commercial Banks. Loans and advances is the first type of application of funds, which has more risk. Loans and advances and total deposit ratio indicates the firm's fund mobilization power in gross. The main sources of bank's lending are its deposit. Thus, this ratio measures how well deposits have been mobilized. This ratio measures the ability of a bank generating income from bank's deposit liability.

**Table: 4.5**

**Loan and Advances to Total Deposit Ratio**

Banks	Fiscal Year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	0.7425	0.6571	0.7223	0.7331	0.7297	0.7169
NBBL	0.7139	0.8556	0.8022	0.6850	0.6753	0.7464
Combined Mean						0.7316

Source: Annual Report of HBL and NBBL.

Table 4.5 explains the relation between a unit of deposit with the value of loans and advances of concern banks in given years. The ratios have been ranged from 0.7425 to 0.6571 of HBL in FY 2006/07 and 2007/08 0.8555 and to 0.6753 of NBBL in FY 2007/08 and 2010/11. The combined mean ratio of these two banks is 0.7316. The overall performance of NBBL seems the best with mean ratio. From this analysis, NBBL can be concluded as the best performer in utilization its deposit irrespective the area of its utilization.

**4.2.3 Loans and Advances and investment to Total Deposit Ratio**

Loan and advances and investment are the major area of fund mobilization of commercial banks. Loans and Advances is the first type of application of funds. This has more risk as compare to investment and gives more returns. Investment is cushion against the liquidity risk and at the same time it gives return. Loans and advances and investment to total deposit ratio indicates the firm's fund mobilizing power in gross. The main sources of bank's lending and investment is its deposit. Thus, this ratio measures how will the deposits have been mobilized. This ratio measures the ability of a bank in generating income from bank's deposit liability.

Table 4.6 explains the relation between a unit of deposit with the tabulated value in loans and advances and investment of concerning banks in given years. The ratios have been ranged from 1.0038 of HBL in FY 2008/09 to 0.9342 of NBBL in FY 2007/08. HBL has the highest ratio for the whole period. NBBL has the lowest ratio throughout five years.

**Table: 4.6**  
**Loan and Advances and Investment to Total Deposit Ratio**

Banks	Fiscal Year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	0.8267	0.8369	1.0038	0.9720	1.0355	0.9349
NBBL	0.7825	0.9342	0.9042	0.8864	0.8830	0.8780
Combined Mean						0.9064

Source: Annual Report of HBL and NBBL.

This combined mean ratio of these two banks is 0.9064. The overall performance of HBL seems the best with mean ratio 0.9349. NBBL has the mean ratio of 0.8780. From this analysis HBL can be concluded as the best performs in utilizing its deposit irrespective of the area of its utilization.

#### **4.2.4 Loan and Advances to Shareholders Equity**

Shareholders equity is consisted of share capital, share premium, reserves and retained earnings. The ratio between loans and advances to shareholders equity provides the measures regarding how far the shareholders equity has been able to generate assets to multiply its wealth. The shareholders equity refers to the net shareholders in take in the business and their success in covering liabilities into assets.



**Table: 4.7**

**Loan and Advances to Shareholders Equity**

Banks	Fiscal Year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	11.1914	9.4106	10.1007	10.3810	10.8898	10.3947
NBBL	11.6419	12.3653	12.1828	10.5977	13.1726	11.9920
Combined Mean						11.1933

Source: Annual Report of HBL and NBBL.

Table 4.7 explains that the overall ratio of these two banks has ranged from 11.1914 of HBL in FY 2006/07 to 13.1726 of NBBL in 2010/11. The ratio of HBL has continuously increasing trend from FY 2006/07.

The combined mean ratio of these two banks 11.1933 and mean ratio of HBL is 10.3947 and mean ratio of NBBL is 11.9920 respectively. This indicates that NBBL having small volume of capital in business has been succeeded in generating proportionately higher volume of loan due to the entire business.

**4.3 Analysis of Lending Efficiency and Contribution in Total profitability**

Lending efficiency is one of the most important factors that have been developed to facilitate effective performance of bank management. Lending management is the formal expression of the commercial banks goals and objectives stated in financial term for specific future period of time. Lending is the very basic indicators for determining profit.

**Table: 4.8**

**Sector wise Loan Classification of HBL**

Ratio (in %)

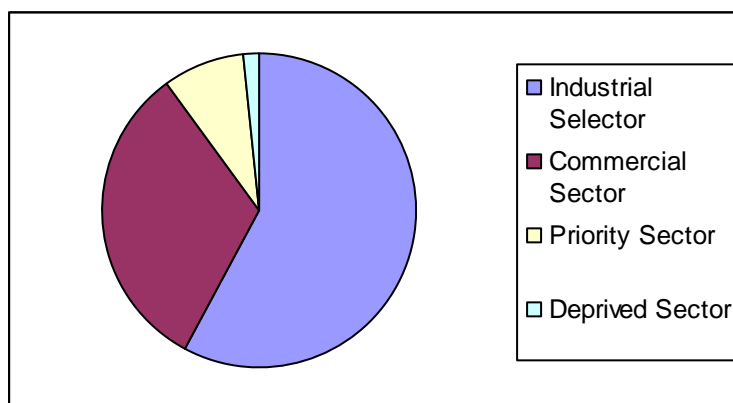
purpose	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
Industrial Selector	15.2026	11.2508	6.5053	4.0462	2.5326	7.9075
Commercial Sector	8.4636	7.3851	7.4330	2.3681	2.3259	5.5951
Priority Sector	2.1585	1.6578	1.3945	1.2636	1.2212	1.5391
Deprived Sector	0.4419	0.3780	0.3318	0.3521	0.3826	0.3772

Source: Annual Report of HBL and NBBL.

The above table explain HBL trend of lending for different purposes as percentage of total loans and advances. HBL has mostly used its funds in industry and commercial sector. In average, lending in industrial, commercial, priority and deprived sectors take the first, second, third and fourth place with mean ratios of 7.9075%, 5.5951%, 1.5391 and 0.3772 respectively in the lending portfolio of the bank. The highest portion of lending in industrial sector, Commercial sector, and priority sectors and deprived sector is 15.2026%, 8.4636%, 2.1585% and 0.4419 in the year 2006/07 respectively. Mean Ratios of Loans disbursed for different purposes to total loans and advances over the study period.

**Figure 4.1**

**Sector wise Loan Classification of HBL**



**Table: 4.9**

**Sector wise Loan Classification of NBBL**

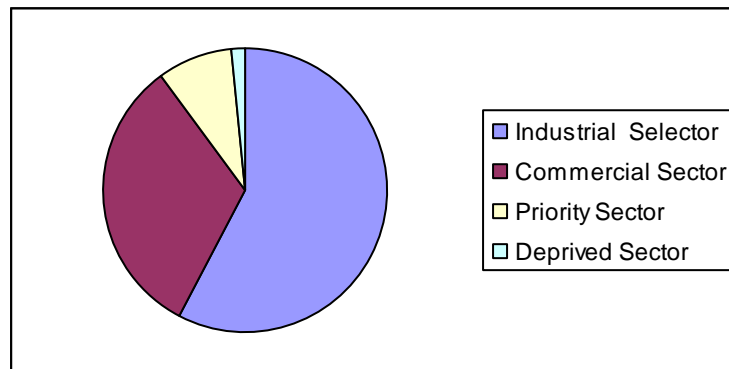
Purpose	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
Industrial Selector	15.2026	11.2508	6.5053	4.0462	2.5326	7.9075
Commercial Sector	8.4636	7.3851	7.4330	2.3681	2.3259	5.5951
Priority Sector	2.1585	1.6578	1.3945	1.2636	1.2212	1.5391
Deprived Sector	0.4419	0.3780	0.3318	0.3521	0.38026	0.3772

Source: Annual Report of NBBL.

The above table 4.9 explains NBBL's trend of lending for different purposes as percentage of total loans and advances. NBBL has mostly used its funds in industrial and commercial sector. In average, lending in industrial, commercial, priority and deprived sectors take the first, second, third and fourth place with mean ratios of 7.9075%, 5.5951%, 1.5391 and 0.3772 respectively in the lending portfolio of the bank. The highest portion of lending in industrial sector, commercial priority and deprived sector is 15.2026%, 8.4636, 2.1585% and 0.4419% in 2006/07 respectively.

**Figure: 4.2**

**Sector wise Loan Classification of NBBL**



In this section lending efficiency is measured in terms of quality and its turnover. A relationship between different variables related to lending efficiency is taken from balance sheet and profit and loss account.

#### 4.3.1 Interest Income to Total Income Ratio

Income is one of the most important parts of any business organization. Interest income occupies a greater portion of the total income in a banking business. This ratio measures the volume of interest income in total income. It helps to measure the bank's performance on other fee-based activities also. The high ratio indicates the high contribution made by lending and investment and high contribution by other based activities in total income. The ratio measures the volume of interest income in total income of the bank. This ratio helps to measure the bank's performance on how well they are mobilizing their fund for the purpose of income generation. This ratio also helps to measure the bank's performance on other fee-based activities, since after investing functions fee based activities are the major source of bank's income to total income.

**Table: 4.10**  
**Interest Income to Total Income Ratio (%)**

Banks	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	6.48	5.52	5.20	5.53	4.58	5.46
NBBL	4.37	4.07	12.93	14.17	41.39	15.38
Combined Mean						10.42

Source: Annual Report of HBL and NBBL.

The above table shows that NBBL has the highest ratio than that of HBL. The ratio of these two Banks has ranged from 6.48 of HBL in FY 2006/07 to 41.39% of NBBL in FY 2010/11.

The combined mean ratio of these two banks is 10.42. Mean ratio of HBL is 5.46 and mean ratio of NBBL is 15.38. NBBL has higher ratio which indicates that it is largely dependent on lending activities and low ratio indicates it has low dependency on lending activity and other fee based activities.

#### 4.3.2 Interest Expenses to Total Deposit Ratio

This ratio measures the cost to total deposit in relative term. The commercial banks performance depends upon its ability to generate cheaper funds. More the cheaper fund more will be the profitability in generating loans and advances and vice-versa. The high ratio indicates of costly fund and this adversely affects its lending performance.

**Table: 4.11**

#### Interest Expenses to Total Income Ratio

Banks	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	0.0582	0.05162	0.04702	0.0458	0.0389	0.0483
NBBL	0.0642	0.0599	0.0578	0.0561	0.0484	0.0573
Combined Mean						0.1056

Source: Annual Report of HBL and NBBL.

Above table shows that the ratio of HBL and NBBL are in decreasing trends. The ratio ranges from minimum of 0.0389 in FY 2010/11 to maximum of 0.0582 in FY 2007/08 of HBL. And ratio ranges from minimum of 0.484 in FY 2006/07 to maximum of 0.0642 on FY of NBBL.

The combined mean ratios of these two banks are 0.1056. The mean ratio of HBL is 0.0483 and mean ratio of NBBL is higher than that of HBL. The mean ratio of NBBL is higher than that of HBL. Due to lack of lending opportunities, the supply of the fund is exceeding the demand of the fund.

### 4.3.3 Interest Income to Interest Expenses Ratio

The ratio of interest income to interest expenses ratio measures the difference between interest rates offered and interest rate charged. The spread between the interest income and interest expenses is the main foundation for the commercial banks. The interest offered and the interest charged should not be more than five percent. The commercial banks are free to fix interest rate on deposit and loans. Interest rate on all types of deposits and loans should be published on local newspapers and communicated to Nepal Rastra Bank quarterly and immediately when revised. Deviation of 0.50 % from the published rate is allowed on all types of loans and deposit. However with the new Financial Ordinance 2063, it has again empowered NRB to intervene in rate fixation but it does not specify condition that would oblige NRB to do so.

**Table: 4.12**

#### **Interest Income to Interest Expenses Ratio**

Banks	Fiscal year					Mean
	2006/07	2007/08	2008/09	2009/10	2010/11	
HBL	0.6651	0.6133	0.5792	0.5890	0.4784	0.5850
NBBL	0.6811	0.6368	0.6467	0.5865	0.5668	0.6235
Combined Mean						0.6042

Source: Annual Report of HBL and NBBL.

From the above table it can be analyzed that the ratio of NBBL is higher than the ratio of HBL over the five years. The ratio ranged from 0.6651 of HBL in 2006/07 to 0.6811 of NBBL in 2006/07. The combined mean of these two banks is 0.6042. Mean ratio of HBL..

#### **4.4 Analysis of Growth Rate**

Growth analysis of the banks involves of growth in deposit, loans, investments and net profit. Growth analysis ascertains has much growth in deposit liability is supported by growth in assets. The analysis also concerns which asset portfolio has significant increment corresponding to the increment in deposit liability.

To examine and analyze the expansion and growth of the banking business, following growth ratios are calculated in this part of the study. The higher ratios represent the better performance of the bank. Growth ratios are directly related to the fund mobilization and investments decision of the bank. This ratio represents how well the commercial banks are maintaining their economic and financial position. These ratios can be calculated by dividing the last period figure by the first period figure then by referring to the compound interest tables. Under these topic four types of ratios namely growth ratios of total deposit, loans and advances, Total Investment, and net profit of HBL and NBBL for the study period have been analyzed.

##### **4.4.1 Growth Ratio of Total Deposit**

Deposits are the main source of capital for the commercial banks. Banks utilize these funds in loans and advances and as investments.

**Table: 4.13**

**Growth Ratio of Total Deposit of HBL and NBBL**

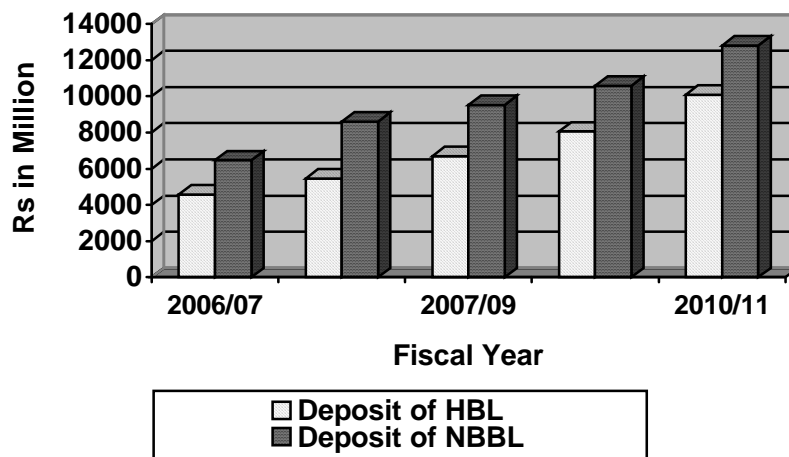
(Rs. In million)

Banks	Fiscal year				
	2006/07	2007/08	2008/09	2009/10	2010/11
HBL	4574.51	5466.60	6695.00	8063.90	10097.7
NBBL	6467.19	8600.81	9514.47	10580.65	12807.37

**Source: Annual Report of HBL and NBBL.**

**Figure: 4.3**

**Growth trend of Deposit**



The above table shows the growth of total deposit by analysis of five years period of HBL and NBBL. NBBL has the highest deposit of Rs. 12807.37 million and HBL has Rs10097.70.million which is lowest than that of NBBL. According to highest range of the total deposit, we can conclude that NBBL has good performance than HBL.



#### 4.4.2 Growth Ratio of Loans and Advances

Loans and advances is the major function of the commercial banking of those loans and advances determines the book performance.

**Table: 4.14**

**Growth Ratio of Loans and Advances of NSBI and NBBL**

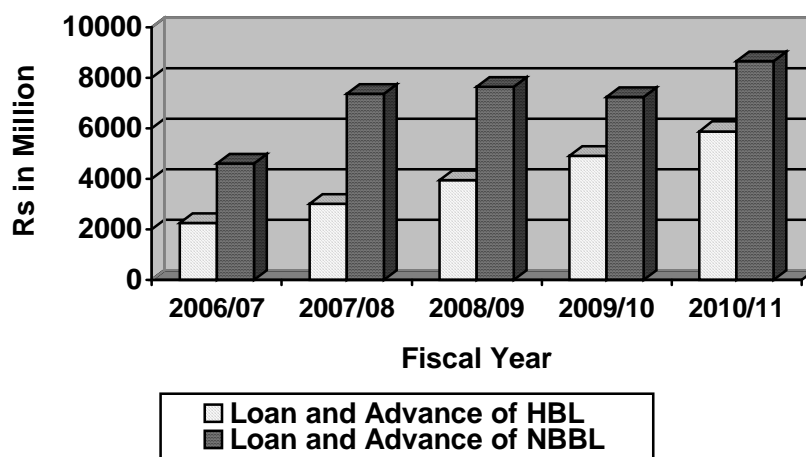
(Rs.In million)

Banks	Fiscal year				
	2006/07	2007/08	2008/09	2009/10	2010/11
HBL	2270.18	3005.76	3948.48	4908.46	5884.12
NBBL	4617.10	7358.84	7632.42	7247	8648.74

Source: Annual Report of HBL and NBBL.

**Figure: 4.4**

**Growth Ratio of Loans and Advances of HBL and NBBL**



The above table shows the growth of loans and advances of HBL and NBBL. There is increasing trend on loans and advances of HBL. Loans and Advances of NBBL is highest than that of HBL in five years during the study period. During the study period it has a significant growth of these two banks and explains its aggressiveness.

### 4.4.3 Growth Ratio of Investment

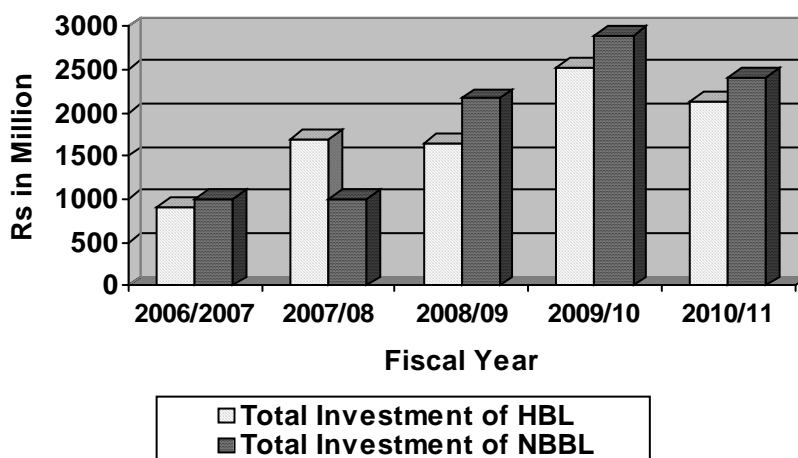
Investment is another important function of banking besides loans and advances. Investment determines the proper utilization of funds

**Table: 4.15**  
**Growth Ratio of Total Investment of HBL and NBBL**  
 (Rs.In million)

Banks	Fiscal year				
	2006/07	2007/08	2008/09	2009/10	2010/11
HBL	901.70	1693.00	1654.00	2535.70	2128.90
NBBL	1008.64	1008.64	2168.92	2699.16	2411.72

Source: Annual Report of NSBI and NBBL.

**Figure: 4.5: Growths Trend of Total Investment of HBL and NBBL**



The above table shows that there is an increasing trend over 2009/10 and then it is decreasing trend in FY 2010/11 in investment of HBL and NBBL. During the study period total investment of NBBL is height than that HBL.

### 4.4.4 Growth Ratio of Net Profit

A commercial banks performance measuring criteria is its net profit. The growth of net profit reveals the overall performance of the banks.

**Table: 4.16**  
**Growth Ratio of Net Profit of HBL and NBBL**

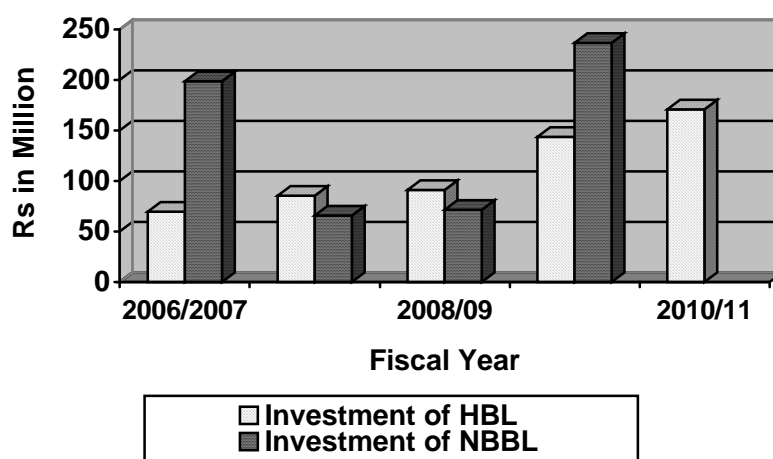
(Rs. in million)

Banks	Fiscal year				
	2006/07	2007/08	2008/09	2009/10	2010/11
HBL	69.70	85.30	91.20	143.60	170.80
NBBL	198.75	65.78	71.49	236.43	-

Source: Annual Report of HBL and NBBL.

**Figure: 4.6**

**Growth Trend of Net Profit of HBL and NBBL**



The above table describes the growth rate of net profit of HBL and NBBL of five years the study period. HBL has the highest profit of Rs.170.80 million in FY 2010/11 and NBBL has the highest profit of Rs. 198.75 million in FY 2006/07. It has increasing trend of profit of HBL But profit of NBBL has fluctuation over the study period.

#### **4.5 Relation between Deposit and Loans of HBL and NBBL**

Relationship between deposit and loans of HBL and NBBL can be determined by correlation coefficient between two. If the change in the value of one variable is accompanied by the change in the value of the other, the variables said to have relationship.

**Table: 4.17****Relationship Between Deposit and Loans**

(Rs.In million)

Banks	Correlation Coefficient	$r^2$	P.Er.	6 * P.Er.
HBL	0.1027	0.0105	0.2985	0.7910
NBBL	0.9538	0.9097	0.2744	1.6464

Source: Annual Report of HBL and NBBL.

The above table shows the Correlation Coefficient between deposit and loans and advances of HBL and NBBL is 0.9538 and 0.1027 respectively. There is high degree of positive relationship between deposit and loans and advances of NBBL. The deposit and loans and advances of NBBL have lower degree of relationship.

The value of (r) above explains that a percentage increase in deposit likely generate. Similarly, coefficient of determination ( $r^2$ ) was found to be 0.9097 which indicates that 90.97 % of total change in loans has been determined by deposit. Deposits have high influence on loans of the HBL, whereas deposits low influence on loans of the NBBL as it has very low i.e. 0.0105. There is an insignificant, as role of 'r' of HBL and NBBL is less than 6 times of P.Er.

**4.6 Relationship between Total Investment and Loans and Advances**

This correlation measures the degree of relationship between investment and loans and advances. This measures of correlation explain where the banks have a rigid policy to maintain a consistent relationship between two assets or other factor such as seasonal opportunity, economic demand, NRB directives etc. has impact on the volume of these two variables since the volume of investment and advance directly reduce or increases the level of ideal fund and this idleness of fund increases the investments.

Table 4.18 reveals the poor relationship between investment and loans and advance. There is high degree of negative relationship between these two variables of NSBI has the value of r is less than the value of P.Er. However NBBL has greater than 6 times P.Er. This implies that NBBL has maintained a steady ratio between investment and loans and advances as compared to NBBL. The value of r is NBBL suggests that it does not have rigid policy to maintain and fixed and consistent ratio between these assets and the volume of these assets in NBBL is highly of seasonal character than that is explained by the value of r is NBBL.

**Table: 4.18**

**Relationship between Total Investment and Loans and Advances**

Banks	Correlation coefficient	P.Er	6 x P.Er
NBBL	-0.6144	0.1163	0.6978
HBL	0.8394	0.0891	0.5346

Source: annual report of HBL and NBBL.

Through the above table, we can conclude that HBL has the good opportunity of lending and investment than NBBL, due to highest degree of positive correlation.

**4.7 Relationship between Total Income and Loans and Advances**

The correlation between total income and loans and advances measures the degree of relationship between these two variables. The value of r explains whether a percentage change in loans and advances it is independent variable and total income is dependent variable.

**Table: 4.19**

**Relationship between Total Income and Loans and Advances**

Banks	Correlation coefficient	P.Er	6 x P.Er
NBBL	0.3819	0.2926	1.7556
HBL	0.9810	0.1135	0.0681

Source: annual report of HBL and NBBL

Table 4.19 presented above has shown the tight degree of positive correlation of HBL. The value of r in HBL is significant as it is greater than six time of probable error. This explains that a percentage change in loans and advances is most likely to chance the same percentage of income, the lower degree of correlation of NBBL.

**4.8 Relationship between Interest Income and Net Profit**

The correlation between Interest Income and Net Profit measures the degree of relationship between these two variables. The interest income contributes a major portion of total volume of commercial banks income. In this analysis, interest income is independent variable and net profit is dependent variable.

**Table: 4.20**

**Relationship between Interest Income and Net Profit**

Banks	Correlation coefficient	P.Er	6 x P.Er
NBBL	-0.7676	0.1385	-0.1063
HBL	0.7318	0.1401	-0.1063

Source: annual report of HBL and NBBL

The table explains that the value of r HBL high degree of correlation, as the value of r of NBBL is negative correlation. There is a significant, as role of 'r' of HBL is more than 6 times P.Er. But there is not significant, as the value 'r' is less than 6 times of P.Er.

#### 4.9 Trend Analysis of Deposit Utilization

This analysis includes the trend of deposit utilization in terms of loans and advance and investment of HBL and NBBL under five years of study period. A commercial bank may grant loans advances and invest some of the funds in government securities and share and debenture of other companies to utilize its deposit.

##### 4.9.1 Trend Analysis of Loans and Advances and Total Deposit Ratio

The trend analysis of loans and advances to total deposit ratio of HBL and NBBL have five years study period and projection of trend for the next five years is calculated. The following table describes the trend value of loans and advances to total deposit of the bank for five years.

**Table: 4.21**

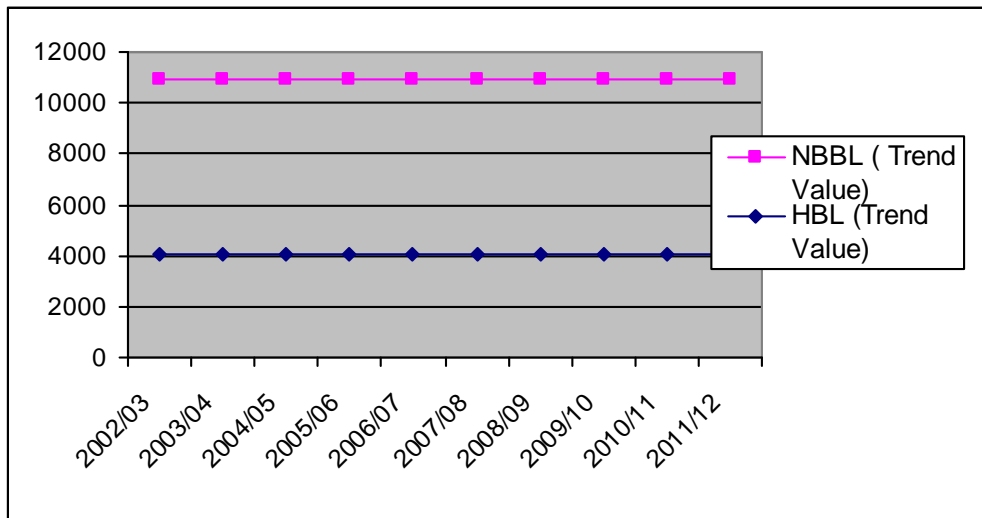
##### **Trend Analysis of Loans and Advances and Total Deposit Ratio of HBL and NBBL**

Fiscal Year (Mid Value)	HBL (Trend Value)	NBBL ( Trend Value)
2002/03	4044.82	6848.95
2003/04	4044.96	6847.10
2004/05	4045.11	6847.26
2005/06	4045.25	6847.42
2006/07	4045.40	6847.57
2007/08	4045.55	6847.73
2008/09	4045.69	6847.89
2009/10	4045.84	6847.85
2010/11	4045.98	6848.20
2011/12	4046.13	6848.35

Source: Appendix-14

**Figure: 4.7**

**Trend Analysis of Loans & Advances and Total Deposit**



The above table shows that the total loans and advances and deposit of HBL and NBBL is in increasing trend. HBL has the highest trend value of 4046.13 in the year 20011/12. The increasing trend of loans and advances and total deposit ratio of both books shows the good performance of the selected banks is providing loans and advances in deposit in profit earning sector.

**4.9.2 Trend Analysis of Investment and Total Deposit Ratio**

The trend analysis of investment and total deposit ratio of HBL and NBBL shows the trend values of five years. Over the study period the analysis makes projection for the next five years. The following table describes the trend values of total investment to total deposit ratio of the selected commercial banks.

**Table: 4.22**



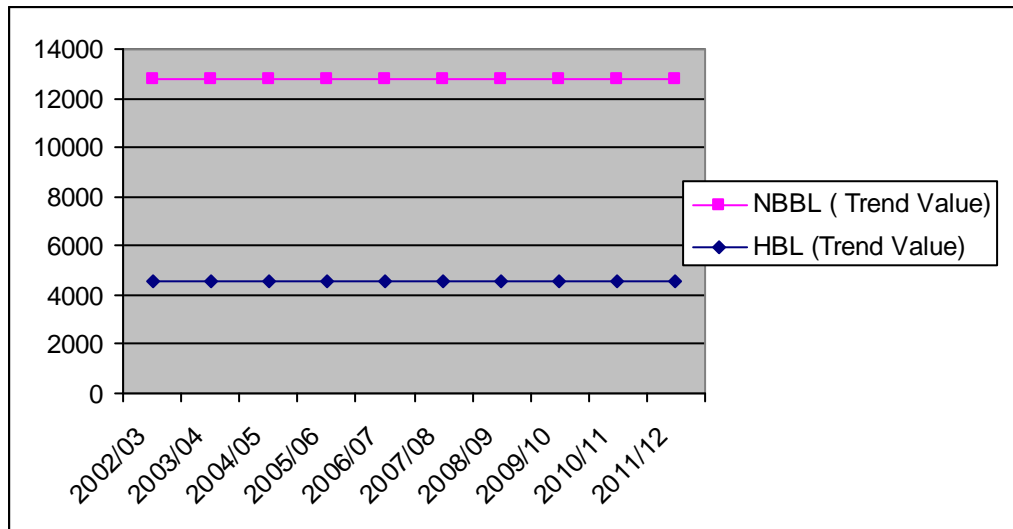
### Trend Analysis of Investment and Total Deposit Ratio HBL and NBBL

Fiscal Year (Mid Value)	HBL (Trend Value)	NBBL ( Trend Value)
2002/03	4583.90	8212.09
2003/04	4584.63	8213.09
2004/05	4586.37	8214.089
2005/06	4586.12	8215.10
2006/07	4586.85	8216.16
2007/08	4587.59	8217.11
2008/09	4588.33	8218.11
2009/10	4589.07	8219.12
2010/11	4589.80	8220.12
2011/12	4590.54	8221.13

Source: Appendix-13

**Figure: 4.8**

**Trend Analysis of Investment and Total Deposit Ratio HBL and NBBL**



The above table shows that the total investment and total deposit of HBL and NBBL is in increasing trend. HBL has the highest trend value of 4590.54 in the year 2001/12 and the NBBL has the highest trend value of 8221.13 in the year 20011/12. The increasing trend of investment and total deposit ratio of both banks shows the good performance of the selected bank on investing the deposit in profit earning sectors.

#### **4.10 Major Findings of the Study**

From the analysis of the data collected from various sources following findings have been made.

1. Current ratio of both banks showed slightly fluctuating trend. Both of the banks could not maintain the conventional standard of 2:1. However, the average of the ratios appeared higher in NSBI, which signifies that HBL is more capable of meeting immediate liabilities in contrast to NBBL. The ratio was found more consistent in HBL. Hypothesis test showed that the mean ratio of two banks did not differ significantly.
2. Liquid fund to current liability ratio of HBL and NBBL in fluctuating trend. After analyzing the ratio we can conclude that both the sample banks do not differ significant with respect to this ratio.
3. Liquid fund to total asset deposit ratio of banks. HBL and NBBL are in fluctuating trend. Mean ratio appeared marginally greater in NBBL, which means that NBBL has maintained loss consistency in NBBL. Hypothesis test showed that the mean ratio of two banks does not differ significantly.
4. Total assets to total liability ratio of NSBI is highest than that of HBL. The highest ratio of HBL and NBBL is 1.0632 and 1.0635 in year 2003/04 respectively. The mean ratio of HBL is greater than NBBL. The ratio remained

more consistency in NSBI. Hypothesis test showed that the mean ratio of the sample banks does not differ significantly.

5. Loans and advances to total deposit ratio of HBL and NBBL is in fluctuating trend. The mean ratio of NBBL is higher than that of HBL. The overall performance of NBBL seems the best with the higher mean ratio.
6. Loans and Advances and investment to total deposit ratio of appeared significantly higher in HBL. It indicates the better utilization of loans and advances and investment in HBL than NBBL. The ratio remained more uniform in HBL. As depicted by higher loans and advances and investment to total deposit in HBL. HBL seems more successful to utilize the despite fund in investment.
7. The ratio of loans and advances to shareholders equity has gained the significant importance in measuring the capital fund and contribution in loans and advances. The analysis explain that the ratio of NBBL the highest than HBL.
8. Interest income to total income ratio of NBBL is greater than HBL over the year 2006/07 to 2004/05 which reveals the NBBL invested the fund rose from more successfully to earn the interest.
9. Interest expenses to total deposit ratio, or an average lower in NSBI than NBBL which reveals that HBL, invested the fund remove from more successfully to earn the interest from total deposit.
10. Interest income to interest expenses ratio of HBL is lower than that of NBBL which signifies that HBL invested the find remove from more successfully to earn to interest rather than paying the interest for debt.

11. Growth ratio of total deposit of NBBL is higher than that of NSBI by analysis over the study period, so it seems better performance of NBBL in total deposit.
12. Growth ratio of loans and advances of NBBL is higher than that of HBL by analysis over the study period. It has a significant growth of NBBL than HBL and explains its aggressiveness.
13. Growth ratio of total investment of NBBL is higher than that of HBL. The highest value increase in total investment of NBBL explains its aggressiveness.
14. The growth ratio of net profit of HBL is in increasing trend. But the growth ratio of net profit of NBBL is in decreasing trend. So the increasing trend of net profit NSBI explains its aggressiveness.
15. Correlation coefficient between total deposit loans and advances were found positively correlated of HBL and NBBL. NBBL has high degree of positive correlation shows the significant relation between net deposit and loans and advances.
16. Correlation coefficient between investment and loans advances were found positively correlated of HBL and NBBL. NBBL has high degree positive correlation shows the significant relation between net deposit and loans and advances.
17. Correlation coefficient between investment and loans and advances were found positively correlated in NBBL and negatively correlated in HBL. The high degree positively correlation coefficient of NBBL shows significant relationship between investment and loans and advance. This shows that the bank has succeeded in contribution of significant proportion both investment and loans and advances. But the negative correlation coefficient of HBL shows poor relationship between those two variables. It shows that the bank could not

succeeded in contribution of significant proportion of total investment and loans and advances.

18. Correlation coefficient between interest income and net profit of HBL shows high degree of correlation. But NBBL has the negative correlation coefficient between these two variables. Due to high degree of positive correlation HBL shows significant relationship between interest income and net profit.
19. Trend analysis of loans and advances and total deposit ratio of NBBL is highly increasing trend. Then HBL shows increasing trend. The analysis concludes the good performance of NBBL in deposit utilization in relation to loans and advances.
20. Trend analysis of investment and total deposit of NBBL is highly increasing trend then NSBI. The analysis concludes the good performance of NBBL in deposit utilization in relation to investment.

## CHAPTER 5

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Summary

Loan management is the essence of commercial banking; consequently the formulation and implementation of lending policies are among the most important responsibilities of directors and management. Well conceived lending policies and careful lending practices are essential if a bank is to perform its credit. Loan management effects on the company's profitability and liquidity so it is one of the crucial decisions for the commercial banks.

The need of financial resources in a developing country like Nepal is essential for the economic development of country. All the sectors from industrial and commercial to agriculture and infrastructure are in need of finding. Although the growths of industrial loan has not been encouraged in the recent years. There is sizable growth in the commercial and other short term credits. Commercial banks are focusing loans on consumer loans like housing, vehicle, education loan etc. it is encouraging to explore new sector for loan management but it should also be considered that industrial loan should be given prime importance as the economy largely depends on this sector.

Lending policies are not systematic and no clear cut vision of policy is available on lending aspect. In Nepal it has been found that on approval and lending decisions are made flexible to favor to personnel networks also. A new customer finds that loan providing process being very complicated and sometimes the documents submitted for loan sanctioning being fraudulent and for formality purpose only. In this perspective the study deals with the issues: a) how effectively is the lending policy of selected sample bank is being followed? b) Whether the trend of the deposit and loans of the commercial banks are satisfactory? c) How the sample banks measures the liquidity position and impact

of deposit on liquidity? d) What is the portion of lending between consumer and industrial loan? And e) How the bank measure the lending performance in quality, efficiency and contribution of profitability?

The main objective of the study is to analyze the loan management policy adopted by the sample banks. However, the specific objectives are: a) to analyze the effectiveness of lending policy of the selected sample banks. b) To measure the performance in quality, efficiency and contribution of profitability. c) To examine the trend of deposit and loans of commercial bank. d) to study the liquidity position. The impact of deposit on liquidity and its effect on lending performance, and e) To provide suggestion and recommendation for the proper loan system.

Sampling may be defined as the selection of part of the population on the basis of which a judgment or inference about the universe is made. Here only 2 sample joint venture commercial banks have been taken out of 23 commercial banks. All the commercial banks in Nepal are the population of the study. The sample taken from the commercial banks are HBL and NBBL.

The research is based on secondary source of data. For research purpose published financial statement (i.e. Annual report) or concerned banks were collected. Similarly, financial statement of selected commercial banks and various markets related information were collected. The factors derived from previous research findings on related area are to support loan management. In addition, an answer on certain queries made to staffs of concerned for clarification personal requires and discussions were also being conducted for clarification and verification of collected data and for recommendation. The annual reports of the concerned banks are the major sources of the data for the study.

To meet the objectives of the study, the sources of secondary data of commercial bank are analyzed by using financial tools such as ratio analysis. Simple descriptive analysis tools such as frequency, mean, standard deviation are used. The ratio analysis involves comparison for a useful interpretation of financial statements. The quantities judgment regarding loan management of a firm can be done with the help of ratio analysis. For the analysis of the data the financial and statistical tools relevant to the topic are used. In this study, the financial tools ratio analysis viz. asset management ratios and profitability ratios are calculated to find out the lending strength of these commercial banks. Also growth ratios, statistical tools like mean correlation coefficient and trend analysis conducted for analysis and interpretation of the data. The data used in this research is mainly secondary nature and extracted from the annual reports of the concerned banks and website of Nepal Stock Exchange. The financial statements of five years (2006/07 to 2010/11) were selected for the study purpose.

Lending is one of the most important functions of a commercial bank and the composition of loans and advances directly affects the performance and profitability of the bank. There is intense competition in banking business with limited market and less investment opportunities as available. A study on the liquidity position loans and advances, profitability, deposit position of HBL and NBBL is analyzed and the banks lending strength lending efficiency and its contribution in total profitability has been measured.

## **5.2 Conclusions**

The mean of current ratio of those two banks over the five year period is 1.0694 and 1.222 respectively and it is consistent over the years. Although the current ratio of 2:1 is considered as standard, acceptability of the value 1:1 or above would be considered acceptable. Therefore the liquidity position of HBL and NBBL is normal. Mean of liquid fund to current liability ratio of these two banks over the five years period is 1.11604 and 0.1111 respectively and it is less



consistent analyzing this ratio we can conclude that both the sample banks do not differ significant with this ratio.

Mean of liquid fund to total deposit ratio of HBL and NBBL is 0.1209 and 0.12006 respectively and it is less consistent. The ratio measure how well the deposits are being mobilized. The ratios of these two banks are in fluctuating trend. Here, none of the ratios is above 1, which refers that some deposit is idle and there is not maximum utilization of the funds. The mean ratio of HBL and NBBL is 1.0626 and 1.0483 respectively and it is consistent over the years after analyzing the assets to total liabilities it can be conclude that these two banks are not utilizing their fund efficiently and affectively to extent their liability permits them. Mean ratio of loans and advances to total deposit HBL and NBBL is 0.7169 and 0.7464 respectively and it is less consistent. The ratio measures how well the deposit are being mobilized and in the income generating sector. The ratios are in fluctuating trend. Her one of the ratios is above1. Which refers that some deposit is idle and then it is not maximum utilization of the funds? But in the year 2009/10 the ratio of HBL is nearly equal to 1, which refers that there is very less deposit which is remained idle in utilization of funds.

Means ratio of loans and advances and investment to total deposit ratio of HBL and NBBL is 0.9349 and 0.8780 respectively and is less consistent. This ratio measures how well the deposit are being mobilized and in the income generating sector. There is fluctuating trend of ratio. Here the ratio of HBL has above 1 in year 2009/10 which refers that deposit is not idle and there is maximum utilization of the funds in this year. Loans and advances to shareholders equity ratio of HBL and NBBL ever the five year period has mean ratio of 10.3947 and 11.9920 respectively and is less consistent. The ratio shows how well the investment made by the investor. It also measures the success of converting liability into assets and measures size of the business. The higher ratio of NBBL in the year 2007/08, 2008/09 and 2010/11 shows that the bank has been

successful in generating proportionately higher volume of loans and advances in the year 2006/07 and 2009/10.

Interest income to total income ratio of NSBI over the study period is decreasing trend but the ratio of NBBL is in increasing trend. Lower ratio of HBL shows low contribution made by lending and investment and high contribution by other fee based activities in total income. But higher ratio of NBBL shows high contribution made by lending and investment and low contribution by other fee based activities in total income. Interest expenses to total deposit ratio of the banks over the study period are in decreasing trend with consistent values. This indicates the decrease in cost of fund. Interest income to interest expenses ratio of HBL and NBBL over the study period are in decreasing trend. This indicates the decrease in profit of the banks. The growth ratio HBL and total deposit of NBBL is in increasing trend. The growth ratio of loans and advances during the study period is found to be increasing trend in every year. The growth ratio of total investment of during the study period is found fluctuating. The growth ratio of Net profit of NSBI is increasing trend but the ratio of NBBL is in fluctuating trend.

The correlation analysis shows that the correlation coefficient 'r' between deposit and loans and advances of NBBL is high degree of positive correlation but HBL has low degree of positive correlation. The correlation of NBBL has significant relationship between deposit and loans and advances and the bank is mobilizing the deposit as loans and advance successfully. Similarly the analysis shows high degree positive correlation of NBBL between investments and loans and advances. But HBL has negative correlation coefficient between total income and loans and advances. The correlation coefficient between total income and loans and advances of NBBL is high degree of positive correlation shows good fund mobilization and there is low degree of positive correlation of NBBL between income and loans and advances the correlation coefficient between total income and loans and advances of NBBL shows positive correlation. So, the

value or 'r' is significant. But the correlation coefficient between total income and loans and advances of NBBL show negative correlation. From trend analysis of deposit utilization and its projection for next 5 years, HBL and NBBL have the increasing trend in loans and advances to total deposit and also increasing trend in total investment to total deposit.

The overall performance of NBBL is satisfactory then NSBI. The liquidity position of NBBL is better than that of HBL. As loans and advances of NBBL is increasing trend deposit is also increasing trend during the study period. There is increasing trend in profit of NBBL shows that improvement in performance and success of the firm. Purpose wise loan classification show that the NBBL and HBL banks have given priority to industrial and commercial sector lending, as well as priority and deprived sector lending. NBBL has higher lending portion in these sectors than NSBI. From the selected bank NBBL has performed well in increasing growth ratio of deposit, loans and advances, investment and profit.

NBBL has good lending procedure, preliminary screening is done of all the loan application, credit appraisal and financial position of the business and cash flows of the proposal is given high importance, which is essential criterion for loan approval. There is proper control mechanism like delegation of authority, follow up visits and books of accounts inspection of the client, which results in good performance of the bank. The banks follow NRB guidelines of loans classification and provisioning which makes strong financial position of the comparatively study of holding high volume of non-performing assets. After comparatively study of NBBL and NSBI banking performance, it can be concluded that NBBL has better performance than that of HBL.

### 5.3 Recommendations

Based on above findings and conclusion the following recommendations have been made.

1. As the liquidity position of these two banks is found to be high, they are recommended to look upon the new area of lending and investment. The rural economy has always been realizing the credit needs: the dominance of non-organized moneylender. In this area has been prevailing. To compromise between the liquidity and credit need of rural economy, these banks are highly fund in business and the same time contributes to the national economy also.
2. The ratio of loans and advances and investment to total deposit of NBBL is the lowest and this has result in the highest ratio of interest expenses to total deposit. At the same time total deposit to total fund utilized is below the average and there is high propensity of growth in deposit as compare to loans and advances. Hence these banks suggested reducing the interest rate. Consequently the volume of interest bearing deposit in its deposit mix reduces: increase the gap between consequent assets the liquidity arising from high prosperity of deposit.
3. HBL's contribution in loans and advances is the lowest and this has low degree of variation and low growth rate as compare to NBBL an NBBL since the entire economy is largely dependent on the proper execution of lending performance of all the banks in long run due to its paradox how level of lending constitutes the low level of lending constitutes the low level of investment, resulting in low level of productive and employment generation and this causes slack in economy .this slackness in economy adversely effects the funding as well as non- funding activities of banking

4. business. Thus, especially HBL is recommended to give more priority on productive and priority sector loan.
5. As examined by interest income to interest expenses ratio, the interest gap in NBBL and HBL is highly unfavorable for the national development since this gap as not existed due to credit creation power of these banks. As the total loans and advances to total deposit ratio is not even 1:1, this gap has its reason with high interest charged and low interest offering. This ratio has clearly indication that the bank has not followed that the NRB directives to maintain overall 5% gap in interest charged and interest offered. Thus bank is recommended to lower this gap by charging low interest in lending lowering this gap results in high volume of loans and advances and helps in increasing the sustainable lending practice.
6. The high volume of liquidity shows that the high degree of lending strength has been prevailing in all of these banks. The lack of reliable lending opportunities and fear of losing the principle in rural sector has been keeping these banks to less orient toward the lending function. Hence the government should take appropriate action to initiate these directives does not create long term healthy lending practices unless the commercial banks are not self motivated to flow credit in this sector, “But in view of the risk element in lending, the banker still prefers to have a negative outlook in handling proposals. This attitude requires to be changed among the bankers and any proposal coming to them should be processed to conform to banking norms so that it can be sanctioned for alignment for production or approved social objectives.

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## ANNEXES

### Annex 1

#### Analysis of Current Ratio

Year	Liquid fund		Current liabilities		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	3334.59	7034.51	3204.27	6945.64	1.04061	1.0128
2007/08	5049.85	9636.94	4874.79	9358.28	1.0359	1.0298
2008/09	6607.18	10727.83	6063.87	10441.04	1.0895	1.0275
2009/10	8052.20	11345.52	7420.73	1123.70	1.0761	1.0099
20010/11	9608.56	13758.05	8928.24	13586.40	1.0654	1.1438

### Annex 2

#### Analysis of Liquid fund to Current Liability Ratio

Year	Liquid fund		Current liabilities		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	278.60	645.75	3204.27	6945.64	0.0869	0.0930
2007/08	834.99	1025.82	4874.79	9358.28	0.1713	0.1096
2008/09	692.76	759.31	6063.87	10441.04	0.1142	0.1685
2009/10	1139.57	889.51	7420.73	11233.70	0.1536	0.0792
20010/11	631.81	1436.48	8928.24	13586.40	0.0708	0.1057

### Annex 3

#### Analysis of Liquid Fund to Total Deposit Ratio

Year	Liquid fund		Current liabilities		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	278.60	645.75	3204.27	6467.19	0.0911	0.0998
2007/08	35.79	1025.82	4874.79	8600.81	0.1825	0.1193
2008/09	692.76	759.31	6063.87	954.47	0.1267	0.1849
2009/10	1139.59	889.51	7420.73	10580.65	0.1702	0.841
20010/11	631.21	1436.48	8928.24	12807.37	0.0783	0.1122

### Annex 4

#### Analysis of Total Assets to Total Liabilities Ratio

Year	Liquid fund		Current liabilities		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	3334.59	7347.23	3208.86	6950.62	1.0632	1.0571
2007/08	5049.85	9962.69	4883.18	9367.57	1.0654	1.0635
2008/09	6607.18	11102.24	6216.27	10475.74	1.0628	1.0598
2009/10	8052.20	11932.60	7579.37	11248.69	1.0623	1.0607
20010/11	9608.56	14257.97	9068.24	13601.39	1.0595	1.0483

### Annex 5

#### Analysis of Loans and Advances to Total Deposit Ratio

Year	Loan and Advances		Total Deposit		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	2270.18	461710	3057.43	6467.43	0.7425	0.7139
2007/08	3005.76	7358.84	4574.51	8600.81	0.6571	0.8556
2008/09	3948.48	7632.42	5466.61	9514.47	0.7223	0.8022
2009/10	4908.46	7247.98	6694.95	10580.65	0.7331	0.6850
20010/11	5884.12	8648.74	8063.90	1287.37	0.7297	0.6753

### Annex 6

#### Analysis of Loans and Advances and Investment to Total Deposit

Year	Loan and Advances and Investment		Total Deposit		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	2527.79	5060.65	3057.43	6467.19	0.8267	0.7825
2007/08	3828.76	8034.92	4574.51	8600.81	0.8369	0.9342
2008/09	5487.38	8602.65	5466.61	9514.47	1.0038	0.9042
2009/10	6507.81	9378.49	6694.95	10580.65	0.9720	0.8864
20010/11	8350.55	11309.49	8063.90	12807.37	1.0355	0.8830

### Annex 7

#### Analysis of Loans and Advances to Share holders Equity

Year	Loan and Advances		Shareholders Equity		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	2270.18	461710	202.85	396.59	11.1914	11.6419
2007/08	3005.76	7358.84	319.40	595.12	9.1406	12.3653
2008/09	3948.48	7632.42	390.91	626.49	10.1007	12.1828
2009/10	4908.46	7247.98	472.83	683.92	10.3810	10.5977
20010/11	5884.12	8648.74	540.33	656.57	10.8898	13.1726

### Annex 8

#### Analysis of Interest Income to Total Income Ratio

Year	Interest Income		Total Income		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	267.44	609.27	41.27	139.53	6.48	4.37
2007/08	385.02	810.05	69.70	198.75	5.52	4.07
2008/09	443.82	850.53	85.33	65.78	5.20	12.93
2009/10	520.17	1013.71	74.17	71.51	5.52	14.17
20010/11	657.25	1095.50	143.57	265.0	4.58	41.34

## Annex 9

### Analysis of Interest Expenses to Total Deposit Ratio

Year	Interest Expenses		Total Deposit Ratio		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	177.89	414.99	3057.43	6467.19	0.0582	0.6811
2007/08	236.14	515.84	4574.51	8600.81	0.0516	0.6368
2008/09	257.05	550.06	5466.61	9514.47	0.04702	0.6467
2009/10	306.41	594.58	6694.95	10580.65	0.0458	0.5865
20010/11	314.44	620.94	8063.90	12807.37	0.0389	0.5668

## Annex 10

### Analysis of Interest Income to Interest Expenses Ratio

Year	Interest Income		Interest Expenses		Ratio	
	HBL	NBBL	HBL	NBBL	HBL	NBBL
2006/07	267.44	609.27	177.89	414.99	0.6651	0.6811
2007/08	385.02	810.05	236.14	515.84	0.6193	0.6368
2008/09	443.82	850.53	257.05	550.06	0.5792	0.6467
2009/10	520.17	1013.71	306.41	594.58	0.5890	0.5865
20010/11	657.25	1095.50	314.44	620.94	0.4784	0.5668

## Annex 11

### HBL Bank Limited

#### Correlation Coefficient between Deposit and Loans and Advances

Let, X be Deposit and Y be loans and advances respectively.

Year	X	Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$	xy
2006/07	4574.5	2959.44	-2405.03	-2104.39	5784169.30	4428457.27	5061121.08
2007/08	5466.61	3948.47	-1512.92	-1115.36	2288926.3	1244027.93	1687,450.45
2008/09	6694.96	4908.46	-284.57	-155.37	80980.08	24139.84	44213.64
2009/10	8063.9	5884.12	1084.37	820.29	1175858.30	672875.68	889497.87
2010/11	10097.69	7618.67	3118.16	2554.84	9722921.79	652707.43	7966399.89
N=5	X=34897.66	Y=25319.16			x2=19052856.37	y2=7022208.15	xy=15648682.74

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{X}{N} \\ &= \frac{34897.66}{5} \\ &= 6979.53 \end{aligned}$$

$$\begin{aligned} \text{Mean } (\bar{Y}) &= \frac{Y}{N} \\ &= \frac{25319.16}{5} \\ &= 5063.83 \end{aligned}$$

$$\begin{aligned} \text{Correlation coeff.}(r) &= \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}} = \frac{1610247.36}{\sqrt{1905286.37} \sqrt{12896698.13}} \\ &= \frac{1610247.36}{4364.95 \times 3591.19} \\ &= 0.1027 \end{aligned}$$

$$\begin{aligned} \text{P.Er} &= 0.6745 \times \frac{1 - r^2}{\sqrt{5}} \\ &= 0.6745 \times \frac{1 - (0.1027)^2}{2.24} \\ &= 0.2985 \end{aligned}$$

## Correlation Coefficient between Total Investment and Loans and Advances

Let, X be Total investment and Y be loans and Advances respectively.

Year	X	Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$	xy
2006/07	9017	2959.44	5611.28	-2104.39	31486463.24	4428457.27	-11808321.52
2007/08	1693.06	3948.47	-1712.66	1115.36	2933204.28	1244027.93	1910232.46
2008/09	1653.97	4908.46	-1751.75	-155.37	3068628.06	24139.84	272169.40
2009/10	2535.65	5884.12	-870.07	820.29	757021.80	672875.68	-713709.72
20010/11	2128.93	7618.67	-1276.79	2554.84	1630192.70	6527207.43	-3261994.16
N=5	X= 17028.61	Y= 25319.16			x= 39875510.07	y= 1228153.49	xy= -13600984.84

$$\text{Mean } (\bar{X}) = \frac{X}{N}$$

$$= \frac{17028.61}{5}$$

$$= 3405.72$$

$$\text{Mean } (\bar{Y}) = \frac{Y}{N}$$

$$= \frac{25319.16}{5}$$

$$= 5063.83$$

$$\text{Correlation coeff.}(r) = \frac{xy}{\frac{x^2}{N} \cdot \frac{y^2}{N}} = \frac{-13600984.84}{\frac{\sqrt{1905286.37}}{5} \cdot \frac{\sqrt{12896698.13}}{5}}$$

$$= \frac{1610247.36}{631.706 \times 3591.19}$$

$$= -0.6144$$

$$\text{P.Er} = 0.6745 \times \frac{1 - r^2}{\sqrt{5}}$$

$$= 0.6745 \times \frac{1 - (-0.6144)^2}{2.24}$$

$$= 0.1163$$

### Correlation Coefficient between Total income and Loans and Advances

Let, X be total income and Y be Loans and Advances respectively

Year	X	Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$	xy
2006/07	4655.1	2959.44	-1916.32	-2104.39	3672282.34	4428457.27	4032684.64
2007/08	5409	3947.47	-1162.42	-1115.36	47707.30	1244027.93	1296516.68
2008/09	6353	4908.46	-218.42	-155.37	1637324.98	24139.84	33935.92
2009/10	7851	5884.12	1279.58	820...29	4070629.06	672875.68	1049626.68
20010/11	8589	7618.67	2017.58	2554.84		6527207.43	5154594.09
N=5	X= 32857.1	Y=			x= 10779163.90	y= 12896708.13	xy= 11567358.07

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{X}{N} \\ &= \frac{32857.1}{5} \\ &= 6571.42 \end{aligned}$$

$$\begin{aligned} \text{Mean } (\bar{Y}) &= \frac{Y}{N} \\ &= \frac{25319.16}{5} \\ &= 5063.83 \end{aligned}$$

$$\begin{aligned} \text{Correlation coeff.}(r) &= \frac{xy}{\sqrt{x^2} \sqrt{y^2}} = \frac{11567358.07}{\sqrt{10779163.9} \sqrt{12896698.13}} \\ &= \frac{11567358.07}{3283.16 \times 3591.19} \\ &= 0.9810 \end{aligned}$$

$$\begin{aligned} \text{P.Er} &= 0.6745 \times \frac{1 - r^2}{\sqrt{5}} \\ &= 0.6745 \times \frac{1 - (0.9810)^2}{2.24} \\ &= 0.01135 \end{aligned}$$



## Correlation Coefficient between Interest Income and Net Profit

Let X be the Interest Income and Y be the Net Profit

Year	X	Y	$x=X-\bar{X}$	$y=Y-\bar{Y}$	$x^2$	$y^2$	xy
2006/07	267.44	697.06	-187.3	-296.50	35081.29	87912.25	55534.45
2007/08	385.02	853.47	-69.72	-140.09	4860.88	19625.21	9767.07
2008/09	443.82	273.30	-10.92	-720.26	119.25	518774.47	7865.24
2009/10	520.17	1436.00	65.43	442.44	4281.08	195753.15	28948.85
2010/11	657.25	1708.00	202.51	714.44	41010.30	510424.51	144681.24
N=5	$\frac{X=2273.7}{5}$	$\frac{Y=4967.83}{5}$			$\frac{x=85352.78}{5}$	$\frac{y=1332503.4}{5}$	$\frac{xy=246796.18}{5}$

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{X}{N} \\ &= \frac{2273.7}{5} \\ &= 454.74 \end{aligned}$$

$$\begin{aligned} \text{Mean } (\bar{Y}) &= \frac{Y}{N} \\ &= \frac{4967.83}{5} \\ &= 993.56 \end{aligned}$$

$$\begin{aligned} \text{Correlation coeff.}(r) &= \frac{xy}{\sqrt{x^2} \sqrt{y^2}} = \frac{246796.18}{\sqrt{85352.78} \sqrt{1332503.45}} \\ &= \frac{246796.18}{292.15 \times 1154.34} \\ &= 0.7318 \end{aligned}$$

$$\begin{aligned} \text{P.Er} &= 0.6745 \times \frac{1-r^2}{\sqrt{5}} \\ &= 0.6745 \times \frac{1-(0.7318)^2}{2.24} \\ &= 0.1401 \end{aligned}$$

## Annex 12

### Nepal Bangladesh Bank Limited

#### Correlation Coefficient between Deposit and Loans and Advances

Let, X be Deposit and Y be Loans and Advances respectively.

Year	X	Y	$x=X-\bar{X}$	$y=Y-\bar{Y}$	$x^2$	$y^2$	xy
2006/07	8600.81	7358.84	-2124.96	-1176.34	4515455.00	1383775.80	2499675.45
2007/08	9514.96	8083.97	-1210.81	-451.21	1466060.86	203590.46	546329.58
2008/09	10580.65	7961.51	-145.12	-573.67	21059.81	329097.27	83250.99
2009/10	12807.37	9644.69	2081.6	1109.51	433058.56	1231012.44	2309556.02
20010/11	12125.57	9626.91	1399.8	1091.73	1959440.04	1191874.39	1528203.65
N=5	X= 53628. 86	Y= 42675.92			$x^2$ = 1229285.32	$y^2$ = 4339350.34	xy= 6967241.28

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{X}{N} \\ &= \frac{53628.86}{5} \\ &= 10725.77 \end{aligned}$$

$$\begin{aligned} \text{Mean } (\bar{Y}) &= \frac{Y}{N} \\ &= \frac{42675.92}{5} \\ &= 8535.18 \end{aligned}$$

$$\begin{aligned} \text{Correlation coeff.}(r) &= \frac{xy}{\sqrt{x^2} \sqrt{y^2}} = \frac{6967241.28}{\sqrt{1229285.32} \sqrt{4339350.34}} \\ &= \frac{6967241.28}{3506.60 \times 2083.11} \\ &= 0.9538 \end{aligned}$$

$$\begin{aligned} \text{P.Er} &= 0.6745 \times \frac{1-r^2}{\sqrt{5}} \\ &= 0.6745 \times \frac{1-(0.9538)^2}{2.24} \\ &= 0.2744 \end{aligned}$$

### Correlation coefficient between Total Investment and Loans and Advances

Let, X be Total investment and Y be Loans and Advances respectively.

Year	X	Y	x=X- $\bar{X}$	y =Y- $\bar{Y}$	x <sup>2</sup>	y <sup>2</sup>	xy
2006/07	691.08	7358.84	-1104.82	-1176.34	1220627.23	1383775.80	1299643.96
2007/08	1008.64	8083.97	-787.26	-451.21	619778.31	203590.46	355219.58
2008/09	2168.16	7961.51	373.02	-573.67	139143.92	329097.24	-213990.38
2009/10	2699.16	9644.69	903.06	1109.51	815878.63	1231012.44	1002176.00
20010/11	2411.72	9626.91	615.82	1091.73	379234.27	1191874.39	672309.17
N=5	X = 8979.52	Y = 42675.92			x <sup>2</sup> = 3174662.34	y <sup>2</sup> = 4339350.34	xy = 3115358.31

$$\begin{aligned} \text{Mean } (\bar{X}) &= \frac{X}{N} \\ &= \frac{8979.52}{5} \\ &= 1795.90 \end{aligned}$$

$$\begin{aligned} \text{Mean } (\bar{Y}) &= \frac{Y}{N} \\ &= \frac{42675.92}{5} \\ &= 8535.18 \end{aligned}$$

$$\begin{aligned} \text{Correlation coeff.}(r) &= \frac{xy}{\sqrt{x^2} \sqrt{y^2}} = \frac{3115358.31}{\sqrt{3174662.34} \sqrt{4339350.34}} \\ &= \frac{3115358.31}{1781.75 \times 2083.11} \\ &= 0.8394 \end{aligned}$$

$$\begin{aligned} \text{P.Er} &= 0.6745 \times \frac{1-r^2}{\sqrt{5}} \\ &= 0.6745 \times \frac{1-(0.8394)^2}{2.24} \\ &= 0.0891 \end{aligned}$$

### Correlation Coefficient between Total Income and Loans and Advances

Let, X be Total income and Y Loan and advances respectively.

Year	X	Y	$x=X-\bar{X}$	$y=Y-\bar{Y}$	$x^2$	$y^2$	xy
2006/07	1080	7358.84	-82.19	-1176.34	6755.20	1383775.80	96683.38
2007/08	1076.8	8083.97	-85.38	-451.21	7289.74	203590.46	38524.31
	1						
2008/09	1243.8	7961.51	81.64	-573.67	6665.09	329097.27	-46834.42
	3						
2009/10	1327.1	9644.69	165	1109.51	27225.00	1231012.44	183069.15
	9						
20010/11	1083.1	9626.91	-79.03	1091.73	6245.74	1191874.39	-86279.42
	6						
N=5	X= 5810.9 9	Y= 42675.92			$x^2$ = 54180.76	$y^2$ = 4339350.34	xy= 185163

$$\text{Mean } (\bar{X}) = \frac{X}{N}$$

$$= \frac{5810.99}{5}$$

$$= 1162.19$$

$$\text{Mean } (\bar{Y}) = \frac{Y}{N}$$

$$= \frac{42675.92}{5}$$

$$= 8535.18$$

$$\begin{aligned} \text{Correlation coeff.}(r) &= \frac{xy}{\sqrt{x^2} \sqrt{y^2}} = \frac{185163}{\sqrt{54180.76} \sqrt{4339350.34}} \\ &= \frac{185163}{3115358.31} \\ &= \frac{185163}{232.76 \times 2083.11} \\ &= 0.3819 \end{aligned}$$

$$\begin{aligned} \text{P.Er} &= 0.6745 \times \frac{1-r^2}{\sqrt{5}} \\ &= 0.6745 \times \frac{1-(0.3819)^2}{2.24} \\ &= 0.2926 \end{aligned}$$

## Correlation Coefficient between Interest Income and Net Profit

Let, X be interest income and Y be Net profit respectively.

Year	X	Y	$x=X-\bar{X}$	$y=Y-\bar{Y}$	$x^2$	$y^2$	xy
2006/07	810.05	198.75	-132.4	108.14	17529.76	11694.26	-14317.74
2007/08	850.53	65.78	-91.92	-24.83	8449.29	616.53	2282.37
2008/09	1013.71	71.49	71.26	-19.12	5077.99	365.57	-1362.49
2009/10	1095.5	26.43	153.05	-64.18	23424.30	4119.07	-9822.75
20010/11	-	-	-	-	-	-	-
N=5	X= 3769.79	Y= 362.45			$x^2$ = 54481.32	$y^2$ = 16795.41	xy= -23220.60

$$\text{Mean } (\bar{X}) = \frac{X}{N}$$

$$= \frac{3769.79}{5}$$

$$= 942.45$$

$$\text{Mean } (\bar{Y}) = \frac{Y}{N}$$

$$= \frac{362.45}{5}$$

$$= 90.61$$

$$\text{Correlation coeff.}(r) = \frac{xy}{\sqrt{x^2} \sqrt{y^2}} = \frac{-23220.60}{\sqrt{54481.32} \sqrt{16795.41}}$$

$$= \frac{-23220.60}{30249.56}$$

$$= -0.7676 \quad 1-r^2$$

$$\text{P.Er} = 0.6745 \times \frac{1}{\sqrt{5}}$$

$$= 0.6745 \times \frac{1 - (-0.7676)^2}{2.24}$$

$$= 0.1385$$

**Annex 13**  
**Trend Analysis of Total Investment and Loans and Advances**

**HBL**

Year	X	Y	x=X- $\bar{X}$	y=Y- $\bar{Y}$	x <sup>2</sup>	y <sup>2</sup>	xy
2006/07	257.61	3057.43	-1079.45	-2514.05	1165212.30	6320447.40	2713791.27
2007/08	823.00	4574.51	-514.06	-996.97	264257.68	993949.18	512502.39
2008/09	1538.90	5466.61	201.84	-104.87	40739.38	10997.72	-21166.96
2009/10	1599.35	6694.95	262.29	1123.47	68796.04	1262184.84	294674.94
2010/11	2466.43	8063.90	1129.37	2492.42	1275476.59	6212157.46	28146864.37
N=5	X= 6685.29	Y= 27857.40			x <sup>2</sup> = 2814481.99	y <sup>2</sup> = 1479936.60	xy= 6314666.01

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

$$= \frac{6685.29}{5}$$

$$= 1337.06$$

$$\bar{Y} = \frac{Y}{N}$$

$$= \frac{27857.40}{5}$$

$$= 5571.48$$

y=a+bx.....(i)

y =Na +bx.....(ii)

xy = a x + b y.....(iii)

Substituting the value of x and y in equation (ii) and equation (iii) we get,

$$27857.40 = 5a + 6685.29 b.....(Iv)$$

$$6314666.10 = 6685.29a + 2814481.99 b.....(v)$$

Multiplying equation (iv) by 1337.058 and then subtracting equation (v) from it, we get,

$$37246959.53 = 6685.29a + 44693102.38b$$

$$6314666.01 = 6685a + 2814481.99b$$

$$-$$

---


$$30932293.52 = 41878620.39b$$

or, b = 30932293.52

$$\frac{30932293.52}{41878620.39}$$

... b = 0.7386

Now subtracting the value of b in equation (iv), we get

$$27857.40 = 5a + 6685.29b$$

$$\text{or, } 27857.40 = 5a + 6685.29 \times 0.7386$$

$$\text{or, } a = \frac{22919.52}{5} = 4583.90$$

$$\dots a = 4583.90, b = 0.7386$$

Year	Trend value
2002/03	$y = a + bx = 4583.52 + 0.7386 \times 0 = 4583.90$
2003/04	$y = a + bx_1 = 4583.52 + 0.7386 \times 1 = 4584.63$
2004/05	$y = a + bx_2 = 4583.52 + 0.7386 \times 2 = 4586.37$
2005/06	$y = a + bx_3 = 4583.52 + 0.7386 \times 3 = 4586.12$
2006/07	$y = a + bx_4 = 4583.52 + 0.7386 \times 4 = 4586.85$
2007/08	$y = a + bx_5 = 4583.52 + 0.7386 \times 5 = 4587.59$
2008/09	$y = a + bx_6 = 4583.52 + 0.7386 \times 6 = 4588.33$
2009/10	$y = a + bx_7 = 4583.52 + 0.7386 \times 7 = 4589.07$
2010/11	$y = a + bx_8 = 4583.52 + 0.7386 \times 8 = 4589.80$
2011/12	$y = a + bx_9 = 4583.52 + 0.7386 \times 9 = 4590.54$

**NBBL**

Year	X	Y	$x=X-\bar{X}$	$y=Y-\bar{Y}$	$x^2$	$y^2$	xy
2006/07	443.55	6467.19	-932.69	-3126.90	869918.09	977553.64	2916428.36
2007/08	676.08	8600.81	-700.16	-993.28	490229.62	986621.05	695454.92
2008/09	970.23	9514.47	-406.01	-79.262	164847.36	6340.61	32181.16
2009/10	2130.51	10580.65	754.26	986.552	568917.19	973284.84	744116.71
20010/11	2660.75	12807.37	1284.50	3213.72	1649955.66	10325116.95	4127447.88
N=5	X= 6881.12	Y = 47970.49			$x^2$ = 3743867.92	$y^2$ = 22068917.09	xy= 8515627.03

$$X = 6881.12$$

$$Y=47970.49$$

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

$$= 1376.224$$

$$\bar{Y} = \frac{Y}{N}$$

$$= 9594.098$$

$$y=a+bx.....(i)$$

$$y =Na +bx.....(ii)$$

$$xy = a x + b y.....(iii)$$

Substituting the value of x and y in equation (ii) and equation (iii) we get,

$$47970.49= 5a + 68812 b.....(Iv)$$

$$8515629.03 = 6881.12a + 3743867.92 b.....(v)$$

Multiplying equation (iv) by 1376.224 and then subtracting equation

(v) From it, we get,

$$66018139.63 = 688.12a +9469962.49b$$

$$8515629.03 =6881.12a +3743867.92b$$

$$-$$

---


$$5750210.60 = 5726094.57b$$



$$\text{or, } b = \frac{5750210.60}{5726094.57}$$

$$\dots \quad b = 1.0042$$

Now subtracting the value of b in equation (iv), we get

$$47970.49 = 5a + 6881.12 \times 0.1.0042$$

$$\text{or, } 47970.49 = 5a + 6910.02$$

$$\text{or, } 47970.49 - 6910.02 = 5a$$

$$\text{or, } a = \frac{4106046}{5} = 8212.09$$

$$\dots a = 8212.09, b = 0.1460$$

Year	Trend value	
2002/03	$y = a + bx =$	$8212.09 + 1.0042 \times 0 = 8212.09$
2003/04	$y = a + bx_1 =$	$8212.09 + 1.0042 \times 1 = 8213.09$
2004/05	$y = a + bx_2 =$	$8212.09 + 1.0042 \times 2 = 8214.09$
2005/06	$y = a + bx_3 =$	$8212.09 + 1.0042 \times 3 = 8215.10$
2006/07	$y = a + bx_4 =$	$8212.09 + 1.0042 \times 4 = 8216.16$
2007/08	$y = a + bx_5 =$	$8212.09 + 1.0042 \times 5 = 8217.11$
2008/09	$y = a + bx_6 =$	$8212.09 + 0.1460 \times 6 = 4045.69$
2009/10	$y = a + bx_7 =$	$8212.09 + 1.0042 \times 7 = 8219.12$
2010/11	$y = a + bx_8 =$	$8212.09 + 1.0042 \times 8 = 8220.12$
2011/12	$y = a + bx_9 =$	$8212.09 + 1.0042 \times 9 = 8221.13$

## Annex 14

### Trend Analysis of Loans and Advances and Total Deposit Ratio

#### HBL

Year	X	Y	$x = X - \bar{X}$	$y = Y - \bar{Y}$	$x^2$	$y^2$	xy
2006/07	4574.5	2959.44	-2405.03	-2104.39	5784169.30	4428457.27	5061121.08
2007/08	5466.61	3948.47	-1512.92	-1115.36	2288926...93	1244027.93	44213.64
2008/09	6694.96	4908.46	-284.57	-155.37	80980.08	24139.84	889497.87
2009/10	8063.9	5884.12	1084.37	820.29	1175858.30	672875.68	7966399
20010/11	10097.69	7618.67	3118.16	2554.84	9722921.79	652707.43	
N=5	X=34897.66	Y=25319.16			$x^2=$ 19052856.37	$y^2=$ 12896698.13	xy= 1610247.36

$$\begin{aligned}
 X &= 34897.66 & Y &= 25319.16 \\
 x^2 &= 12896698.13 \\
 xy &= 610247.36 \\
 y &= a + bx \dots\dots\dots(i) \\
 y &= Na + bx \dots\dots\dots(ii) \\
 xy &= a \quad x + b \quad y \dots\dots\dots(iii)
 \end{aligned}$$

Substituting the value of x and y in equation (ii) and equation (iii) we get,

$$\begin{aligned}
 25319.16 &= 5a + 34897.66 b \dots\dots\dots(Iv) \\
 1610247.36 &= 34897.66a + 19052866.37 b \dots\dots\dots(v)
 \end{aligned}$$

Multiplying equation (iv) by 1072.772 and then subtracting equation (v) from it, we get,

$$\begin{aligned}
 176715887.40 &= 34897.66a + 1217846673b \\
 1610247.36 &= 34897.66a + 19052866.37b \\
 - & \quad - \quad -
 \end{aligned}$$

---


$$17510247.36 = 11987938.07b$$

or,  $b = \frac{17510247.36}{11987938.07}$

...  $b = 0.1460$

Now subtracting the value of b in equation (iv), we get

$$\begin{aligned}
 25319.16 &= 5a + 34897.66 \times 0.1460 \\
 \text{or, } 25319.16 &= 5a + 5095.05
 \end{aligned}$$

$$\text{or, } 25319.16 - 5095.05 = 5a$$

$$\text{or, } a = \frac{20224.10}{5} = 4044.82$$

$$\dots a = 4044.82, b = 0.1460$$

Year	Trend value
2002/03	$y = a + bx = 4033.82 + 0.1460 * 0 = 4044.82$
2003/04	$y = a + bx_1 = 4044.82 + 0.1460 * 1 = 4044.96$
2004/05	$y = a + bx_2 = 4044.82 + 0.1460 * 2 = 4045.11$
2005/06	$y = a + bx_3 = 4044.82 + 0.1460 * 3 = 4045.25$
2006/07	$y = a + bx_4 = 4044.82 + 0.1460 * 4 = 4045.40$
2007/08	$y = a + bx_5 = 4044.82 + 0.1460 * 5 = 4045.55$
2008/09	$y = a + bx_6 = 4044.82 + 0.1460 * 6 = 4045.69$
2009/10	$y = a + bx_7 = 4044.82 + 0.1460 * 7 = 4045.84$
2010/11	$y = a + bx_8 = 4044.82 + 0.1460 * 8 = 4045.98$
2011/12	$y = a + bx_9 = 4044.82 + 0.1460 * 9 = 4046.13$

**NBBL**

Year	X	Y	$x=X-\bar{X}$	$y=Y-\bar{Y}$	$x^2$	$y^2$	xy
2006/0	8600.81	7358.8	-2124.96	-1176.34	4515455.00	1383775.80	2499675.45
2007/08	9514.96	8083.97	-1210.81	-451.21	1466060.86	203590.46	546329.58
2008/09	10580.65	7961.51	-145.12	-573.67	21059.81	329097.27	83250.99
2009/10	12807.37	9644.69	2081.6	1109.51	433058.56	1231012.44	2309556.02
20010/11	12125.57	9626.91	1399.8	1091.73	1959440.04	1191874.39	1528203.65
N=5	X= 53628.86	Y= 42675.9 2			$x^2$ = 1229285.32	$y^2$ = 4339350.34	xy= 6967241.28

$$X = 53628.86$$

$$Y=42675.92$$

$$x^2 = 1229285.32$$

$$xy = 6967241.28$$

$$y=a+bx.....(i)$$

$$y =Na +bx.....(ii)$$

$$xy = a \quad x + b \quad y.....(iii)$$

Substituting the value of x and y in equation (ii) and equation (iii) we get,

$$42675.92 = 5a + 53628.86 b.....(Iv)$$

$$6967241.28 = 53628.86a + 12296285.32 b.....(v)$$

Multiplying equation (iv) by 1072.772 and then subtracting equation (v) from it, we get,

$$42675.92 = 5a + 53628.86 b$$

$$6967241.28 = 53628.86a + 12296285.32 b$$

-----

$$450764946.50 = 286375834b$$

$$\text{or, } b = 450764946.50$$

$$\frac{450764946.50}{2863759340}$$

$$\dots b = 0.1574$$

Now subtracting the value of b in equation (iv), we get

$$42675.92 = 5a + 53628.86 \times 0.1574$$

$$\text{or, } 25319.16 = 5a + 8441.18$$

$$\text{or, } 25319.16 - 8441.18 = 5a$$

$$\text{or, } a = \frac{34234.74}{5} = 6846.95$$

$$5$$

$$\dots a = 6846.95, b = 0.1574$$

Year	Trend value
2002/03	$y = a+bx = 6846.95+0.1574*0 = 6848.95$
2003/04	$y = a+bx_1 = 6846.95+0.1574*1 = 6847.10$
2004/05	$y = a+bx_2 = 6846.95+0.1574*2 = 6847.26$
2005/06	$y = a+bx_3 = 6846.95+0.1574*3 = 6847.42$
2006/07	$y = a+bx_4 = 6846.95+0.1574*4 = 6847.57$
2007/08	$y = a+bx_5 = 6846.95+0.1574*5 = 6847.73$
2008/09	$y = a+bx_6 = 6846.95+0.1574*6 = 6847.89$
2009/10	$y = a+bx_7 = 6846.95+0.1574*7 = 6847.85$
2010/11	$y = a+bx_8 = 6846.95+0.1574*8 = 6848.20$
2011/12	$y = a+bx_9 = 6846.95+0.1574*9 = 6848.35$