

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

Investment, in its broadest sense, means the sacrifice of current currencies and resources for the sake of future currencies and resources. An investment is one of the decisions of finance function that involves the decision of capital to established commercial or industrial venture. In other words it involves commitment of funds into long-term assets that would yield benefits in coming future period. Two aspects of the investments decisions are:

1. The evaluation of the prospective profitability of the investment
2. The measurement and comparison of cut-off rate against that the prospective return of investment could be compared.

Investment is primary factor for economic development of any country. Investment refers to as using present money to get long benefit. Investment in its broadest sense means the sacrifice of current money for future money. Two different attributes are generally involved time and risk. The sacrifice takes place in the present and is certain. The reward or result of sacrifice comes later and the magnitude is generally uncertain. Time and risk are predominates for investment. Such as investment in government bonds time is predominates whereas in common stock time and risk both are important. (Sharpe, et.al: 2000:1)

Investment also refers to the expenditure of funds for capital goods such as factories, farm, equipment, livestock and machinery. Capital goods are used to produce other goods or services.

The main source of investment is saving. A distinction is often made between investment and saving. Saving is defined as forgone consumption; investment is restricted to real to investment of the sort that increases national output in the future. This defined classified investment as real and financial investment. Real investments generally involve some kind of tangible assets such as land, machinery, or factories. Financial investment involves contracts written on pieces of paper, such as common

stock and bonds. By and large, two forms of investments are complementary, not competitive.

Bank plays a very important role in investment by collecting saving from individual and providing loans to individuals and industries for economic activities. Bank itself invests in different securities of the company and industries. It helps to mobilize the idle saving financial activities. Banking has played a very important part in the economic development of all the nations of the world therefore it is termed as the life blood of modern commerce. The study mainly focuses on the investment analysis of the commercial banks by comparing six main commercial banks of Nepal.

The term bank or banking or banking can be referred to any person, firm or company accepting deposit of money subject to withdrawal by Cheque, draft or order.

While talking about investment we cannot forget that saving is primary factor for investment. If there been no saving none of the investment can be expected. So saving is the backbone of investment. Saving is needed to finance capital investment to increase and maintain the productive capacity of the country. It is commonly known fact that an investment is possible when there is adequate savings. If all the income and saving are consumed for basic needs; then there is no saving, neither existence of investment. Therefore, saving and investment are interrelated.

Financial institutions play an important role to develop the business activities by collecting from the public money. Financial institutions involve commercial banks, saving and loan associations, credit unions pension fund and insurance companies. Especially commercial banks play significant role for development of financial activities. They render various services to their customers facilitating their economic and social life. They not only collect idle money from public but also provide loan to investors, who are in need of fund. In addition they invest money in different securities.

### **1.1.1 Features of a sound lending and Investment policy**

Sound lending and Investment policy is not only prerequisite for banks profitability, but also crucially significant for the promotion of commercial savings of an under development country like Nepal.

There are basically five features

1. Liquidity
2. Profitability
3. Suitability
4. Safety and Security
5. Diversification

**1. Liquidity:** liquidity refers to that state of position of bank that shows its capacity to meet all of its obligations. In other words, it refers to the capacity of bank to pay cash against deposits. In simple sense, liquidity refers to the cash or any assets that can be converted into cash immediately. People deposit their money at the banks in different accounts with confidence that the bank will repay their money when they needed. Once the confidence is lost in depositor's eye, they may withdraw all their money (deposit) within a short period without giving any chance to the bank to manage. To maintain such confidence of the depositors, the bank must keep this point in mind while investing in different securities or at the time of lending. Hence, the liquidity position of bank is such an important factor that it must be able to meet its cash requirement either by its cash in vault or by the help of converting its assets into cash in case of demand for such from its customers. There is no sense of the banks has adequate but not liquid.

**2. Profitability:** Commercial banks can maximize its wealth through maximization of return on their investment and lending. Therefore these types of banks should invest their funds where they earn maximum profit. Generally the profit of commercial banks depends upon the interest rate of the bank, volume of loan provided, time period of loan and nature of investment on different securities. A good bank is one who invests most of its funds in different earning asset standing safely from the

problem of liquidity i.e. keeping cash reserves to meet day to day requirements of the depositors.

**3. Suitability:** Bank should always try to know that why a customer needs loan because if the borrower misuse the loan granted by bank he will never be able to repay loan. In order to avoid such circumstances, advanced should be allowed to select the suitable borrowers.

**4. Safety and Security:** The bank must take care while investing funds. It should never invest its funds in those sectors, which are subject to too much fluctuations because a little difference may cause a great loss. Similarly, the businessman who is bankrupt at once or earns million in a minute should not be financed at all. Banks should accept that type of securities, which are commercial, durable, marketable and high market prices. For this purpose “MAST” should be applied for the investment.

Where

M- Marketability

A- Ascertain ability

S- Stability

T- Transferability

Bank must take care of the belonging of public while investing and providing loan received in the form of deposits. The risk and return involved must be analyzed thoroughly so that depositor's money is advanced safety where the risk of loss does not exit.

**5. Diversification:** This thing should always be kept in mind while granting loan that the investment is made not only in one sector. The bank must not invest the funds in one specific sector but the various sectors so that when something goes wrong in one particular sector, other will recover. To minimize risk and maximize wealth, banks must diversify its investment in different sectors. Capital market also plays a very important role in investment. The shares issues by the company to raise capital for investment are traded in capital market. Since future is uncertain and investment decision involves risk, benefits of investment are difficult to measure and cannot be predicted with certainty. But capital market provides a means for distributing risk

among various parties. It provides and allocates funds to firms with profitable investment opportunities and offers an avenue of liquidity for individuals to invest current income or borrow against future income. Capital market brings together those who have surplus funds to lend and those who desire to borrow to finance the investment in industrial or commercial venture. Development of financial market and investment move in similar cyclical patterns.

### **1.1.2 Concept of Commercial Banks**

Commercial banks are those banks, which pool together the saving of the community and arrange them for the productive use. They accept deposits from the public and provide same deposits to the public as loan and advances. In fact, they circulate the money and create credit. The concept of the commercial banks made the economy strong. And now it's playing important role to make country economically strong. According to the Black's law Dictionary "commercial bank" means a bank authorized to receive both demand and time deposits, to engage in trust services, to issue letter of credit, to rent time-deposit boxes, and to provide similar services. Like wise section 2(a) of the commercial bank act 2031 has defined that commercial bank means a bank which operates currency, exchanges transactions, accepts deposits, provides loan perform, dealings, relating to commerce except the banks which have been specified for the co-operative agricultural, industry of similar other specific object. ( Bhandari, 2003; 37)

Hence, the term commercial bank is used taking meaning of all banking habits. That's why joint stock banks, member banks, and credit banks are frequently used interchangeably with the term commercial banks. But it is different that central bank. Central bank can not be interchangeable with other banks. In this way, a commercial bank is different from a central bank. While the primary objective of a commercial bank is the maximization of profit the central bank is primarily concerned with the effects of its operations on the functioning of the economy. Moreover, while there may certainly be many competing commercial banks, there exists only one central bank in a country. While the commercial banks compete against each other, the central bank comes out if any, ordinary banking business for the general public,

incomplete if confines itself mainly to controlling the operations of the banking system in country.

### **1.1.3 History of Banking in Nepal**

Similar to other countries goldsmith and landlords were the ancient bankers in Nepal. Tejarath Adda established during the tenure of then Prime Minister Rannodip Singh was the first step towards the institutional development of banking in Nepal though all the banking activities were carried out by it. Tejarath Adda did not collect deposits from the public but provided loans government employees and public against bullions.

Banking in true sense terms started with the inception in Nepal Bank Limited on 30th Kartik 1994 B.S. right from inception, it carried out functions of a commercial bank. Nepal Bank Limited had a Herculean responsibility of attraction people towards banking sectors from predominant non institutional transactions as well as introducing other banking services. Being a commercial bank, it is the one of government to look into neglected sector too.

This is the main reason of establishing Nepal Rastra Bank as a central bank of Nepal in 2013B.S. Since then it has been functioning as a government bank it has its own limitations and reluctances of NBL to go the unprofitable sectors. To cope with these difficulties, government set up Rastriya Banijya Bank in 2033 B.S. as a fully government owned commercial bank. Gradually, Agricultural Bank and Industrial bank came into existence. Despite all these efforts of the government, financial sector was found sluggish. Banking service to the satisfaction of the customer's was a far cry.

However, the inception of Nepal Arab Bank Limited in 2041B.S. as a first joint venture bank proved to be a milestone in the history of banking.

With evolution of globalization and liberal economic policies, Nepalese financial sector is also able to attract foreign investors as well as private investors within the country.

The following is to-date list of major commercial banks operating in Nepal.

**List of Commercial Banks**

<b>S.N.</b>	<b>Name of the Commercial Banks</b>
1	Nepal Bank Limited
2	Rastriya Banijya Bank
3	Agriculture Development Bank
4	Nabil Bank Ltd.
5	Nepal Investment Bank
6	Standard Chartered Bank
7	Himalayan Bank Ltd.
8	Nepal SBI Bank Ltd.
9	Nepal Bangladesh Bank Ltd.
10	Everest Bank Ltd.
11	Bank of Kathmandu Ltd.
12	Nepal Credit and Commercial Bank Ltd.
13	Nepal Industrial and Commercial Bank Ltd.
14	Lumbini Bank Ltd.
15	Macchapuchhre Bank Ltd.
16	Kumari Bank Ltd.
17	Laxmi Bank Ltd.
18	Siddhartha Bank Ltd.
19	Global Bank Ltd.
20	Citizen Bank International Ltd.
21	DCBL Bank Ltd.
22	Prime Bank Ltd.
23	Bank of Asia Ltd.
24	Sun Rise Bank Ltd.
25	Kist Bank
26	NMB Bank Ltd.

(Source: Banking and Financial Statistic)

## **1.2 Focus of the study**

The establishment of the joint venture (commercial) banks has given a new impetus to the financial sector of Nepal. The study is mainly focused on the investment policy of a joint venture bank namely Nepal investment bank, Himalayan bank, Nepal SBI bank, Everest bank and bank of Kathmandu in the five year period from 1959/60 to 1963/64.

### **1. Nepal Investment Bank Limited:**

Nepal investment bank was established in 1992, under the company act. It was a foreign joint venture bank and the foreign partner is Banquet Indosuez of France, Paris, 50% of the Bank's share was, of Indosuez bank, 15% is of Rastriya banijya Bank, 15% of Rastriya Bima sansthaan and remaining 20% is to the public the bank has 16 branches in the operation. Nepal government gives the bank specific rights to manage for the 15 years. NIBL has been awarded the prestigious "Bank of the year 2005" by the London-based financial times group's. the banker making it the first Nepali bank to win the award two times in three years. NIBL had also won the "Bank of the Year 2003" award. Bank was selected for this honor amongst the Nepali banks by meeting the stringent benchmark criteria set by the banker. The award is based on the growth and performance in terms of capital, assets, and return on equity and management quality. Authorized capital and paid-up capital of Nepal Investment Bank Limited are Rs. 1000,000,000 and Rs. 801,400,000. Its market value per share is Rs. 1729 and book value per share is Rs. 234.37 EPS is Rs. 62.57.

### **2. Himalayan Bank Limited**

HBL was established in 1992, under the company act. It is also a foreigner joint venture bank and the foreigner partner is Habib Bank Limited of Pakistan. This is the first joint venture bank managed by Nepalese Chief Executives. There are 16 branches of HBL in operation. Authorized capital and paid-up capital are Rs. 1000,000,000 and Rs 810, 810, 000.its market value per share is Rs. 1740 and book value per share is Rs. 264.74 currently its EPS is Rs. 60.66.



### **3. Nepal SBI Bank Limited**

Nepal SBI Bank Limited was established in 1993, under the company Act. It is also a foreign joint venture bank and the foreign partner is State Bank of India, holding the 50% of equity share of NEPAL SBI Bank Limited, is managing the Bank under joint venture and technical services agreement signed between it and Nepalese promoters. There are 16 branches of Nepal SBI Bank Limited in operation, Authorized capital and paid-up capital of Nepal SBI Bank Limited is Rs. 1000,000,000 and Rs, 647,800,000 respectively. Its market value per share Rs. 1160 and book value per share Rs. 178.04 currently it's earning per share is Rs. 39.35.

### **4. Everest Bank Limited**

Everest Bank Limited was established in 1992, under the company Act. It also foreign joint venture bank and the partner was United Bank of India and managed from very beginning till November 1996. Later on it handed over the management to the Punjab National Bank Ltd, India that holds 20% equity on the banks share capital. Altogether 21 branches of Everest Bank are in operation. Authorized capital and paid-up capital of Everest Bank Limited are Rs. 10, 00,000,000 and Rs. 51,80,00000 respectively. Its market value per share Rs. 2430 and book value is Rs. 292.95. EPS is Rs. 78.60.

### **5. Bank of Kathmandu Limited**

Bank of Kathmandu Limited was established in 2050 B.S. in collaboration with the Siam commercial Bank PLC, Thailand under the company Act. The Siam commercial Bank has diluted and reduced its equity to 25% by selling 25% of Nepalese citizen in 1998 of its initial holding. The bank has 16 branches in operation. Authorized capital and paid-up capital of Bank of Kathmandu Limited are Rs. 100,000,000 and Rs. 603,141,300 respectively. Its market value per share is Rs.1375 and book value per share is Rs. 162.81. EPS is Rs. 43.50.

The present study will make a modest attempt to analyzed Investment policy of Commercial Banks.

### **1.3 Statement of problem**

The main economic goal of developing countries is to accelerate the growth rate. Although most of the developing countries are predominantly agricultural, Industrial development is crying need of these countries for their economic development and investment is the dominant factor for industrial development. But rate of investment in Nepal is very low. The main cause behind it is political instability, low investor confidences, lack of knowledge on investment management, lack of improved prospectus to investors, restriction on foreign portfolio investment on Nepal, lack of efficient capital market and slow privatization process.

Investment greatly depends on saving behaviour of citizens but the saving rate of Nepalese is very low because most of the citizens are below poverty level. They don't have enough income for daily consumption. Some people hardly save some money but they want to save for future. Only few people invest in industries. People must be motivated to use their saving and mobilize their excess fund in economic activities.

Due to tough competition and lack of peace and political instability, Nepalese banks are facing problem to invest their funds in different sectors. So the banks have facing low liquidity transaction. In other side the demand of loan is very low.

Nepal is considered much liberal banks and finance institution are open for foreign investment for quite a long time. As a result, the country now has 19 commercial banks which is a lot of improvement in the banking sector.

Most of the commercial banks in Nepal are joint with a foreign bank. But some of the new banks were opened during last 7/8 years without foreign collaboration and some foreign banks have withdrawn their investment from Nepal. According to some analysis the withdrawal of foreigners as a result of some anomalies in the Nepali banking sector irrespective of what the withdrawing foreign bank would say officially to the Nepali authorities of the general public.

With some 19 commercial banks, 38 development banks and 74 financial institution operating in Nepal, the market seems over crowded and the banks are now finding a

tough competition among themselves. Since the entry barriers are not so high due to the government liberal policy, this competition is expected to be more intense in the near future, as there is always the possibility of a new player entering this sector.

Nepalese commercial banks have not formulated their investment policy in an organized manner. They mainly rely upon the instruction and guidelines of Nepal Rastra Bank. They don't have clear view towards investments policy. There is a lack of sound investment policy of commercial bank. Furthermore, the implementation of policy is not in an effective way.

Commercial banks have to face tough competition due to limited and narrow capital market and investment opportunities. They are even discouraging depositors by offering very low interest and minimum threshold balance. This will definitely make bad impact on economy of a country there is lack of knowledge on financial risk, interest rate risk, management risk, business risk, liquidity risk, default risk ,purchasing power risk etc.

Commercial banks don't seem to invest their funds in more profitable sector. They are found to be more interested investment in risky and highly liquid sector. i.e. treasury bills development bonds and other securities. They keep high liquid position and flow lower funds to the productive sectors, this result into lower profitability to commercial banks and ignorance to the national economic growth process. This is the main reason for crisis in the commercial banks and in the whole national economy as well.

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

Investment is necessary for economic development of the country. This study attempts to assess the role and impact of investment on economic development of the country.

The main objectives of this study are as follows:

1. To study and analyze percentage of Investment made by selected commercial banks in total investment made by commercial banks.
2. To analyze investment trend and their projection for next four years of selected commercial banks.

3. To identify investment sector of selected commercial banks.
4. To study the relationship between investment and Deposit of the banks.
5. To make the suggestion, recommendation of the study

### **1.5 Limitation of the study**

This study is done for partial fulfillment for masters of Business Studies (MBS). Time constraints financial problem and lack of research experience will be the primary limitations and other limitations are:

- 1 This study is confirmed to five commercial banks. These banks are of average in nature. They are expected to depict the true picture of banking in Nepal.
- 2 This study is mainly based on the secondary data available and NRB and concerned banks.
- 3 Validity of secondary data relies opens the source.

### **1.6 Organization of the study**

The whole study will be divided into five chapters.

#### **Chapter I: Introduction**

This chapter will deal with introduction. This includes background, statement of problem, objectives of the study, limitation of the study and organization of the study.

#### **Chapter II: Review of Literature**

This chapter deals with the review of available literature. It includes review of books, journals, previous thesis and web sites etc.

#### **Chapter III: Research Methodology**

This chapter explains the research methodology used in the study, which includes research design, source of data, population and samples, method of data analysis etc.

#### **Chapter IV: Presentation and Analysis of Data**

The fourth, which is the important chapter of the study, will include presentation and analysis of data.

#### **Chapter V: Summary, Conclusion and Recommendation**

The fifth chapter summarizes the main conclusion the flows the study and offered suggestions, recommendation for further improvement and conclusion of the study. A bibliography and appendices will be attached at the end of the study.

# **CHAPTER - TWO**

## **REVIEW OF LITERATURE**

### **2.1 Conceptual Framework**

Investment is a present sacrifice for the sake of future benefits. Therefore, investment always involves risk. Present decision about selecting the best alternatives should always take the future risk into consideration. The few alternatives of investment in the past have now expanded into hundreds. Hence, the complexity of investment has also been increasing day by day. To select the best alternative and to construct an efficient portfolio, a wise analysis and decision is required. Before making any decision on investment decision related with saving, capital formation, capital market, risk involve with it, return, inflation etc.

#### **2.1.1 Principle of Sound Investment Policy**

It is universally known fact that the most important problem in banking administration is that of investing its deposits and paid up capital in various forms of earning assets. This is also known as portfolio policy. The bank's portfolio being nothing but an arranged and digested scheme of its assets.

The funds of banks are generally invested either in those assets, which are non-profitable, or those, which are profitable. Non-profitable assets include cash reserve and the dead stock and profitable assets includes call money, investment, advances and load, cash credits, overdrafts, discounting of bills and acceptances etc.

The guiding principal of sound investment is as follows:

#### **1. Safety**

Safety would be the first guiding principal of a bank, so far as its advances and investment are concerned, because the very existence of a bank depends on the safety of its outstanding, which should never therefore be sacrifice to the profit earning capacity of its advances. This has led people to believe that a bank will never advance any loan, unless it is fully secured. Such is no doubt the ideal conception of banking, but as a result of its competition from other bands, every bank has to grant a certain

number of loans to its customers against their personal security. In such cases, the bank uses discretion and never lends a sum obviously beyond its customer's should be above suspicion. Scrupulous care should be taken that the funds lent out are not subject to any risk of being lost.

## **2. Liquidity**

While making advances and Investments, the bank must see that the money it is lending is not going to be locked up for a long time, which would make its loans and advances less liquid and more difficult to realize in cases of emergency. A bank can afford to lend funds only for a short period, as its liabilities are either payable on demand or at short notice. If it makes advances for long term there is no likelihood of it being able to recall such loans in time to meet the demands of its depositors.

## **3. Diversification of Risk**

It is also necessary to remember that a prudent bank must avoid investing all its funds in meeting the needs of any one industry or any one group of industries or any one group of industries for considerations of self-interest as well the larger public good. The imprudence on putting one's own eggs into one basket cannot be too often reiterated. Therefore bank should invest their funds in different field than investing in same field or sector.

## **4. Return**

Another important factor that will determine the decision of the bank whether or not to grant loan or to make an Investment will depend upon the answer to the question whether or not it will get a fair return on its Investment. A bank always aims at securing maximum profits for its share-holders. The difference between borrowings and lending rate constitutes the gross profit and no bank ordinarily will think of an advance without a satisfaction margin of profit.

## **6. Marketability**

The investments of the bank should be such as can be easily should and realized in cash readily. Loans given against commercial paper representing goods in transit or against stocks and shares of well-known companies are easily realizable while loans given against immovable property cannot be easily realized. The bank must make sure

that the securities, in which he invests his funds, are easily saleable without appreciable loss.

## **6. Stability of price**

The primary object of a bank in buying securities is not to gain by a possible rise in their prices, which is the aim of a speculating dabbler. Therefore the price of the securities should be liable to wide fluctuations.

## **7. Stock Exchange Securities**

This consists of government securities as well as securities of the joint stock companies. These securities are easily and quickly realizable. As they are quoted on the stock exchanges so their value can be easily ascertained. In case of need, a bank can either sell them or pledge them without any hesitation. But before accepting them, the bankers should see that the shares of the companies are not partly paid, that sufficient margin has been kept and they are negotiable. Speculative shares should not be accepted. (Mali, 1965; 68)

### **2.1.2 Some Important Terms**

The study in this section comprises of some important banking terms for which efforts have been made to clarify the meaning, which are frequently used in this study, which are given below:

#### **a. Loan and Advances**

Loan, advances and overdraft are the main source of income for a bank. Bank deposit can cross beyond a desired level but the level of loans, advances and overdraft will never cross it. The facilities of granting loan, advances and overdrafts are the main service in which customers of the bank can enjoy.

Funds borrowed from the banks are much cheaper than those borrowed from unorganized money lenders. The demand for loan has excessively increased due to cheaper interest rate. Further more, an increase in an economic and business activity always increases the demand for funds. Due to limited resources and increasing loans, there is some fear that commercial banks and other financial institutions too may take

more preferential collateral while granting loans causing unnecessary botheration to the general customers. Such loans from these institutions would be available on special request only and there is a chance of utilization of resources in economically less productive fields. There lies the undesirable effect, of low interest rate.

In addition to this, some portion of loan, advances and overdraft includes that among which is given to staff of the bank for house loan, vehicle loan, personal loan and others, in mobilization of commercial banks fund, loan, advances and overdrafts have occupied a large portion.

#### **b. Investment on Government Securities, Share and Debenture**

Though a commercial bank can earn some interest and dividend from the investment on government securities, share and debentures, it is not the major portion of income, but it is treated as a second source of banking business. A commercial bank may extend credit by purchasing government securities bond and share for several reasons.

Some of them are given as:

- It may want to space its maturate so that the inflow of cash coincide with expected withdrawals by depositors or large load demands of its customers.
- It may wish to have high-grade marketable securities to liquidate if its primary reserve becomes inadequate.
- It may also be forced to invest because the demand for loans has decreased or is not sufficient to absorb its excess reserves.

However, investment portfolio of commercial bank is established and maintained primarily with a view of nature of banks liabilities that is since depositors' may demand funds in great volume without previous notice to banks. The investment must be of a type that can be marketed quickly with little or no shrinkage in volume.

#### **c. Investment on Other Company's Share and Debenture**

Due to excess funds and least opportunity to invest these funds in much more profitable sector and to meet the requirement of Nepal Rastra Bank's directives many commercial banks have to utilize their funds to purchase shares and debentures of many other financial and non-financial companies. Nowadays most of the commercial



banks have purchased regional development bank's and other development bank's shares.

#### **d. Deposits**

For a commercial bank, deposit is the most important source of the liquidity. For bank's financial strength, it is treated as a barometer. In the word of Eugene, "a bank's deposits are the amount that it owes to its customers." Deposit is the lifeblood of the commercial bank. Though, they constitute the great bulk liabilities, the success of a bank greatly depends upon the extent to which it may attract more and more deposits, for accounting and analyzing purpose, deposits are categorized in three headings.

They are:

Current Deposit

Saving Deposit

Fixed Deposit

## **2.2 Review of Related Journals (Articles)**

Investment, in its broadest sense, means the sacrifice of current rupees (dollars) and resources to the sake of future rupees (dollars) and resources. In other words, it is a commitment of money and other resources that are expected to generate additional money and resources in the future. Such a commitment takes place in the present and is certain to occur but the reward comes in the future and always remains uncertain. Therefore, every investment entails some degree of risk.

Country's growth rate is largely depending on Investment and commercial banks are key for investing funds in productive works as they deal with money. They collect funds and utilize it in a good Investment, which is not an easy task for them. Therefore an Investment of funds may be the question of life and death for the bank. They must have effective and good investment, policy to exits in this world of competition.

In the artical of **Leading Operation of Commercial Bank of Nepal and its impact on GDP** Sunity Shrestha (1998) bank portfolio (loans and investments) of commercial banks has been influenced by the variable securities rates Investment

planning of commercial banks in Nepal is directly traced to fiscal policy of government and heavy regulatory procedure of NRB. So the investments are not made in professional manner. Investments planning of the commercial banks in are not made in professional manner. Investment planning of the commercial banks in Nepal has not been found satisfactory in terms of profitability, safety, liquidity, productivity and social responsibility. To overcome this problem, she has suggested, commercial banks should take their investment function with proper business altitude and should perform lending and Investment operation efficiently with proper analysis of the projects.

Total risk of security can be divided into systematic and unsystematic components. Systematic risk is risk that cannot be diversified away for it affect all securities in the market. Unsystematic risk is unique to the particular securities and can be eliminated with efficient diversification. If the assumption of the CAPM or APT factor model holds this risk dose not matter to investor. As a result, diversification of assets by a company in an effort to reduce volatility would not be a thing of value.

Investment is done usually to ret some return from it in future. There is no use of Investment if there is not return. Even the parents invest on their children education with a hope that their children will earn money in future with that education they received. Therefore, there must be return may be positive and negative.

Internal Rate of Return (IRR) and Net Present Value (NPV) are the only appropriate means by which to judge the economic contribution of Investment proposal. The important distinctions between the internal-rate of return method and the present-value method involve the implied internal rate of return.

Inflation is a major concern for investors. But and large, people have come to fear significant inflation, particulars when it is unpredictable. Capital rationing is likely to result in Investment because depreciation charges do not reflect replacement cost and firm's taxes grown at a faster rate than inflation. In estimating cash flows one should take account of anticipated inflation. Otherwise a bias arises in using an inflation-adjusted required return and non-inflation-adjusted cash flows and there is a tendency to reject some projects that should be accepted.

There is no completely satisfactory way to summarize the prices changes that have occurred over given time period for the large number of goods and services available. Nevertheless, the government has attempted to do so measuring the cost of a specific mix of major items at various points in time. The 'overall' price level computed for this representative combination of items is termed a cost-of-living index. The percentage changed in this index over a given time period can then be viewed as a measure of the inflation (or deflation) that took place from the beginning of the end period. This measure of inflation may not be relevant as the price of the goods might change according to the quality also.

The simplest view of investor's attitudes towards inflation is that they are concerned with real returns, not nominal returns and that a single price index is adequate to characterize the difference. Looking to the future, investors do not know what the rate of inflation will be, nor do they know what the nominal return on Investment will be, However in both cases they have expectation about what these figures will be which are denoted as EIR (Expected inflation rate) and ENR (Expected nominal returns), respectively. Thus the Fisher Model implies that ERR (Expected real return) on an Investment can be approximated by.

$$ERR=ENR-EIR$$

Or  $ENR=ERR+EIR$

If Investors concerned with real returns, their securities will be priced in the market place so that expected nominal returns incorporate the expected rate of inflation.

At the start of given Investment holding period nominal interest rate for securities having no risk of default should cover both a requisite, expected real return and the expected rate of inflation. At the end of the period, the real return actually received will be the difference between the nominal return and the rate of inflation actually experienced. Only when actual inflation equals expected inflation will be actual real return equal the expected real return on such securities. Although deviations of actual inflation from expected inflation may have relatively little effect on the real return on investments in general, they have a significant effect on specific Investment.

As given in, **the world Book Encyclopedia**, Most people store their money with bank, which keeps an account of how much money is costumer deposit. People gain access to their money through cash machine, counter transaction or by writing Cheque. Banks may provide interest when a certain amount of money is kept in the account, but will charge customers who borrow money. Banks also provide financial services, such as pensions and insurance policies.

In brief, bank is an institution, which accepts deposits in deposit in different accounts, provides loans of different types and creates credit.

In general, the term bank is used to mean commercial bank. The commercial bank is the oldest type of bank. The profit maximization is the main objective of this bank. The modern commercial banks collect deposits in current, saving and fixed account from general public and the institution. It provides loans to individuals and institution from the deposits. In this way bank mobilize saving for productive works and thus for industrial development. The modern commercial banks provide loan not only to traders but also to agriculture, industry and service. Although this bank concentrates itself on short-term loan, it has started to provide even medium and long-term loans to some extent. The difference between the rate of Investment on deposits and loan is the main source of its income. The function of a commercial bank is not unique in all countries.

The banks that collect deposits and advance loans are called commercial banks. According to these definition commercial banks accepts deposit and provide loans but other financial institutions also collect deposits. To differentiate commercial bank from other institution **Dr. Shyam Joshi** had defined it as a great institution that conducts the payment mechanism of a country. The individuals and institution make payment to each other through the mechanism of commercial bank. The commercial bank plays a leading role in the smooth operation of an economy

In **world book (2000)**, it states that Investment promotes economic growth and contributes to a nation's wealth. People deposit money in a saving account in bank. For example, the bank may invest by lending the fund of various business companies. These firms, in return, may invest the money in new factories and equipment to

increase their production. In addition to borrowing from the banks, most companies issue stocks and bonds that they sell to investors to raise capital needed for business expansion. Government also issue bonds to obtain funds to invest in such projects as the construction of dams, roads and schools. All such Investment by individuals, business and govt. Involves a present sacrifice of income to get an expected future benefits. As a result, Investment raises a nation's standard of living.

The above statement clearly specifies the importance of Investment and the role of banks for the development of the country. It the major financial need for the various developments. The banks can play the vital role for the financing activities in the business. The saving and Investment is most necessary for the developing country, which can be managed by banks. Capital accumulation also plays vital to accelerate the economic marginal propensity of consumption. As a result, such countries are badly in trapped into the vicious circle of poverty. Therefore the basis problem of the developing of the countries is to raise the level of saving and thus Investment and the problem can be solved through well-established banks.

In general, bank means an institution that accepts deposits in different accounts and provides loans of different types. Bank can be defined according to the functions of a bank or the service it provide such as commercial bank, central bank and industrial bank. In the words of leaf a bank is a person or corporation which holds it out to receive from the public, deposits payable on demand by Cheque.

In the journal **New Business Age**, **Mr. Sharma** on his article entitled, **banking the Future on competition** the commercial banks are establishing and operating mostly in urban areas. From his studies he found that:

- Commercial banks are establishing and providing their service in urban area only. They don't have interest to establish in rural areas. Only his branch of Nepal Bank Ltd and Rastriya Banijya Bank Ltd. are running in those sectors.
- They have maximum tax concession.
- They don't properly analyze the credit system.

He found that due to the lack of Investment avenues, banks are tempted to invest without proper credit appraisal and personal guarantee, whose negatives side effects would show colors only after four or five years.

In the journal **The Economic Journal of Nepal** (2002, Oct-Dec), Radheshyam Pradhan on his article entitled, **saving is income not consumed** It is one the important and perhaps the chief sources of Investment. In developing countries about 45% of the incremental saving is invested domestically, while in developed countries about 75% of the incremental saving is invested domestically. This suggests that capital is more mobile in developing countries than in developed countries. Saving are of great significance in a country's development. While saving results in high economic growth rate, rapid development leads in turn high savings. Nepal's saving rate is lower as to other developing countries, however, even to achieve 5 to 6 percent economic growth rate, more than 25 percent annual Investment of GDP is considered necessary. As the country's current domestic saving are about 14% the economic resources are short by nearly 11% in proportion of the GDP.

The situation is such that huge portion of Investment has still to be made with external resources. The amount of saving of a typical household in Nepal is small because of the people have limited opportunities for Investment. They prefer to spend saving on commodities rather than on financial assets. This restricts the process of financial intermediation, which might otherwise bring benefits such as reduction of Investment risk and increase in liquidity. When capital is highly mobile international, saving from abroad can also finance the investment needed at home. When capital is not mobile internationally, saving form abroad will limit Investment at home.

Wherever there is Investment there must be capital formation .The development of an economy requires expansion of productive activities, which in turn is the result of the capital formation, which is the capital stock of country. The change in the capital stock of the country is known as Investment. Therefore Capital formation is closely related to investment. Investment generally takes two forms:

1. Financial Investment and
2. Physical Investment

Physical Investment related to real Investment in the economy or industry, which is known as capital formation. Capital formation shows the change in gross fixed assets of production units of manufacturing industries.

Capital formation refers to the creation of physical productive facilities such as building tools, equipment and roads. The process of adding to the amount of stock of the real assets produces growth in the economy. It means increasing a country's stock of real capital. It implies additions to the existing supply of capital goods in a country. It represents an additional of new capital stock to existing stock after deducting depreciation, damage and other physical deterioration of the existing capital stock. Economic progress in country depends upon its rate of capital formation. Hence, a key factor in the development of an economy is the mobilization of domestic resources. In the process of capital formation, the capacity to save by certain classes of people and institution becomes quit important. These people have varied asset-preferences, which change from time to time. The need of entrepreneurs who actually use saving for productive purpose also varies over time.

In the journal of **Info Himalayan** (2003: 4) **Yadav pant**, a bank is a service-oriented institution, which provides many kinds of services for its customer, all of which are equally important. Moreover, the quality of service should be up to the mark to meet the customer's requirement. Customers are the key players for a service organization, without whom such organization can ever exist.

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

There are a lot of research have been performed on Investment policy of Commercial banks. The findings of some of the studies are presented below.

A Study done by **Shiba Raj Loudari** (2001), entitled with '**A study on investment policy of Nepal Indosuez Bank Ltd. in comparison to Nepal SBI Bank Ltd**' with the objective of:

- To examine the liquidity assets management and profitability position and investment policy of NIBL in comparison to Nepal SBI Bank Ltd.

- To study the growth ratios of loans and advances and investment to total deposit and net profit of NIBL in comparison to Nepal SBI Bank Ltd.
- To advances, net profit and outside assets of Nepal Indosuez Bank Ltd. in comparison to Nepal SBI Bank Ltd.

The study was conducted through secondary data.

The research findings of the study are as follows:

- Current ratios for both the Banks is satisfactory.
- Nepal SBI Bank Ltd. has increased investment in government securities where as Nepal Indosuez Bank Ltd. has decreased.
- The analysis of growth ratios shows that growth ratios of total deposits, loans and advances, total investment and net profit of Nepal Indosuez Bank Ltd. are less than that of Nepal SBI Bank Ltd.

A Study done by **Lila Prasad Ojha (2004), 'Lending Practices: A study on NABIL Bank Ltd., SCB Nepal ltd. and Himalayan Bank ltd.'** with the objectives of:

- To measure the bank's lending strength.
- To analyze the portfolio behavior of lending and measuring the ration and volume of loans and advances made in agriculture, priority and productive sector.
- To measure the lending performances in quality, efficiency and its contribution in total income.

The study was conducted on the basis of secondary data.

The research findings of the study are:

- The measurement of lending strength in relative terms has revealed that the total liability to total assets of SCBNL has the highest ratio. The high ratio is the result of high volume of shareholder equity in the liability mix. Himalayan Bank Ltd. has high volume of saving and fixed deposits as compared to current deposit resulting into low ratio of non-interest bearing deposits to total deposits ratio compared to the combined mean.



- The loan advances, and investment to deposit ratio has shown that NABIL Bank Ltd. has developed the highest proportion of its total deposits in earning activities. This is the indicative of that in fund mobilizing activities NABIL Bank Ltd. is significantly better.
- The ratio of investment to investment and loan and advances has measured the total portion of investment in total of investment and loans and advances. The ratio among the banks does not have deviated significantly.

A Study done by **Tilak Kumar Raya** (2008), entitled with '**Investment policy and Analysis of Commercial Banks in Nepal**' made a comparative study of SCBL With NIBL and NB Bank. His main objectives were as follows:

1. To discuss fund mobilization and Investment policy of SCBL in respect to its fee based off-balance sheet transaction and fund based on balance sheet transaction.
2. To evaluate the quality, efficiency and profitability and risk position.
3. To evaluate trend of deposit, Investment, loan and advances and projection for next years.

His main findings were as follows:

1. Mean current ratio of SCBL is slightly higher than that of SCBL and Nepal Investment bank.
2. Mean ratio of cash and bank balance to total deposit of SCBL is lower than NIBL and NBBL.
3. Liquidity position of SCBL is comparatively better than NIBL and NBBL. It has the lowest cash and bank balance to total deposit and cash and bank balance to current ratio. SCBL has a good deposit collection. It has made enough Investment on government securities but it has maintained low Investment policy on loan and advances.
4. SCBL is comparatively average successful in it's on balance sheet operation. But off balance sheet operation activities in compared to NIBL and NBBL has maintained the strong position.
5. There is significant relationship between deposit of loan and advances and between asset and met profit of SCBL.

He recommended the SCBL for effective portfolio management and for project oriented approach. He also suggested enhancing the Off Balance Sheet operation. D. Shrestha (2003) in her thesis, "Investment Analysis of Commercial Banks" a comparative study of HBL and Nepal SBI Bank said that only joint venture commercial banks are running in profit. And HBL is one of the successful commercial bank of Nepal. Nepal SBI is still in developing period. HBL has made a great achievement within last 10 years period. It has also invested in different sectors. These commercial banks should take favorable step for the development of rural parts of the country.

Banks plays a crucial role in sustainable development of least developed countries. Because of bottlenecks inherent in the economic of least developed countries are either unemployed or under-employed or only seasonally employed. It can absorb the population in gainful employment activities. Thus, they can play an important role in poverty alleviation in the country. The major sources for financial resources to industries in the lease developed countries are the commercial banks. They account almost 80 to 90% of the total lending to enterprise. This study is concerned with the Investment analysis of commercial banks of Nepal.

## **2.4 Review of Legislative Provision**

Legislative environment has significant impact on the commercial banks established, their mobilization and utilization of resources. All the commercial banks have to conform to the legislative provision formulated to facilitate the smooth running of commercial banks.

### **Compulsory Cash Reserve Ratio (CRR) and Refinancing**

Under the provision in Nepal Rastra Bank, (NRB) Act 2002, the NRB has formulated and implemented five annual monetary policies so far. The focus of monetary policy has been to insure price. External and financial sector stability so as to create the environment supportive for high and sustainable economic growth.

NRB issues new monetary policy on July 23, 2007 for fiscal year 2007/08. The provision under this policy as follows:

1. The compulsory cash reserve ratio (CRR) has been kept unchanged at minimum 5 percent on account.
2. The bank rate has been kept unchanged at 6.25 percent. This rate has been used to impose penalty on the amount of shortfall if any commercial bank fails to maintain the CRR.
3. The refinance rate on export credit in Nepalese currency has been lowered by 1 percentage point to 2.5 percent from 3.5 percent. The refinance rate to rural development bank however has been kept unchanged at 3.5 percent.
4. The sick industries refinance rate has been kept unchanged at 1.5 percent.
5. The sick industry refinance facility of Rs. 2.0 billion has been continuing for 2007/08 as well. The sick industry refinance facility has been put in place since 2002/03.
6. NRB will continue the refinance facility of Rs. 500 million, similar to sick industry refinance, on the loans used by delinquent, indigenous, backward, madhesi, and marginalized group as defined by the NGO and on the loans used for foreign employment with objectives of providing relief to these sections of society and promoting foreign employment.
7. In the context of commercial banks providing substantial amount of short-term credit to the development banks and finance companies, the penal rate has been increased from 1.5 percent to 2 percent to check the misuse of standing liquidity facility (SLF).

(Source: Monetary Policy for Fiscal Year 2007/08 NRB, Central Office, Baluwatar, Kathmandu, )

### **Policy Guidelines on the Establishment of the Commercial banks**

Under the act of bank and financial institution 2063 NRB issue new policy to establishment of bank and financial institution on 2063/03/29 and timely changed on 2063/12/13 as follows:

1. Paid up Capital: To establish a commercial bank of national level the paid up capital must be at Rs. 2000 million.
2. Share Capital: In general, the share of commercial banks will be available for the promoters (70 percent) and general public (30 percent). To operation joint venture of the foreign banks and financial institution could have a maximum

of 85 percent to minimum 20 percent share investment on the commercial banks of national level. In order to provide adequate opportunity for investment to the Nepali promoters in national level banks, only 15 percent of total share capital will be made available to general public on the condition that the foreign bank and financial institutions are going to acquire more than 50 percent of the total share. Within 15 percent the bank and financial institution put off provision 5 percent for its staff.

3. Banks already in operation: Banks that is already in operation and those who have already acquired letter of intent before the enforcement of these provisions have to bring their capital level within seven years, i.e. by 30 Ashad 2070, as per the recently declared provision.
4. Legal procedure: Banks to be established with foreign promoter's participation have also to be registered fulfilling all the legal processes prescribed by the prevalent Nepal laws.
5. promoter's share payment procedures: Of the total committed sharer capital, the promoters has to deposit in NRB an amount equal to 5 percent along with the application and another 45 percent at the time of receiving the letter of intent on a interest fee basis. The bank should put into operation within one year of receiving the letter of intent. The promoters have to pay fully the remaining balance of committed total share capital before the bank comes into operation. Normally, within 4 months from the date of filling of the application, NRB should give its decision on the establishment of the bank whether it is in favor or against it. If it declines to issue license, it has to inform in writing with reasons to the concerned body.
6. promoters' qualification and experience: action on the application from promoters will not be initiated if it is proved that their collateral has been put on auction by bank and financial institution as a result of non-payment of loans in the past, who have not cleared such loans or those in the black list of the credit information Bureau and 3 years have not elapsed from the date of the removal of their name from such list. The application will be deemed automatically cancelled irrespective of it being on any stage of process for license issuance if the above events are proved. Of the total promoter, one-third should be at least a graduate of Tribhuvan University or recognized institution with major in economics or accountancy, finance, law, banking or

statistics. Likewise, one-fourth promoters should have the work experience of bank or financial institution or similar nature.

7. Promoters' share: Promoter Group's share can be disposed or transferred only on the condition that the bank has been brought in operation, the share allotted to the general public has been floated in the market and after completion of 3 years from the date it has been registered in the Stock Exchange. But before the disposal of such shares it is mandatory to get approval from NBR. The share allotted to general public has to be issued and sold within 3 years from the date the bank cannot issue bonus shares or declare and distribute dividends, shareholders of the promoters group and their family members cannot have access to loans or facilities from the same institution.
8. Disqualify from becoming director: An individual who is already serving as a director in one of the bank or financial institutions licensed by NRB cannot be considered eligible to become the director in other banks or financial institutions. Also, stock brokers, market makers and also an individual and institution involved as an auditor of the bank and institutions carrying on financial transactions cannot be director.
9. Investment: One person, family, firm, invest maximum 15 percent of a firm and 1 percent of another firm.
10. Promoter: No more than one promoter from one family in one firm.

(Source: Banking Khabar Patra 60, 2007 March-April pl)

While reviewing the books and articles and past studies, it is found that banks are not just the storehouse of the country's wealth but are reservoirs of resources necessary for economic development and employment generation. There are still different obstacles in the effective operation of the commercial banks in Nepal. Therefore these obstacles should be eradicated for the economic development of Nepal;

## **2.5 Research Gap**

The purpose of this study is to draw some ideas concerning to the maintain good investment policy and to see what new contribution can be made and to receive some ideas, knowledge and suggestion in relation to maintain good investment policies of sample companies.

The previous students cannot be ignored because they provide the foundation to the present study. In other words there has to be continuity research. This continuity research is ensured by linking the present study with the past research studies. It is clear that the reference of new research cannot be found on the exact topic that is "Investment Analysis of Commercial banks in Nepal". Therefore to complete this research many book, journals, articles and various published and unpublished dissertation and field opinion are followed as guideline to make the research easier and smooth though the reference materials. The researcher can find out the gaping from the past research that has to be fulfilled by the present research work. In this regard, here the researcher is going to analyze the different policy in this topic.

It is the new topic for the research work. It is expected to the uncovered areas of this research work will be studied. The gaping between old and new research work will be focused and filled up based on the given objectives and limitation in this research.

# **CHAPTER THREE**

## **RESEARCH METHODOLOGY**

### **3.1 Introduction**

Research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. Research methodology describes the methods and process applied in the entire subject of the study. This chapter attempts to have an insight into the Investment policy adopted by NBL, EBL, BOK and Nepal SBI Bank.

#### **3.1.1 Research Design**

A research is the arrangement of conditions for collection and analysis of data that aims to combine relevance to the research purpose. Research design is the plan, structure and strategy of investigations conceived so as to obtain answers to research questions and to control variances. (Kerlinker, F.N. (1996), Foundation of Behavioral Research)

According to Wolff and Pant (2003) by research design we mean an overall framework or plan for the collection and analysis of data.

(Wolff and Pant: 2003: 74, Social Science Research and Thesis Writing)

To achieve the objectives of this study, descriptive and analytical research design has and descriptive techniques have been adopted to evaluate Investment performance of HBL, EBL, BOK and Nepal SBI Bank.

#### **3.1.2 Sources of Data**

Mainly, the study is conducted on the basis of the secondary data. The data required for the analysis are directly obtained from the balance sheet and the P/L account of the concerned bank's annual reports. Supplementary data and information are collected from the number of institutions and regulating authorities like NRB, Economic survey and national planning commission etc. all the secondary data are compiled, processed and tabulated in the time series as per the need and objectives.

Formal and informal talks with the concerned authorities of the banks were also helpful to obtain the additional information of the related problem.

Likewise, various data and information are collected from the economic journals, periodical, bulletins, magazines and other published and unpublished reports and documents from various sources.

### **3.1.3 Population and Sample**

The limitation of time and unavailability of the relevant data has forced me to make research on the HBL, EBL BOK and Nepal SBI only even though there are 19 commercial banks established in Nepal which is selected from the population. As follows:

- i. Nepal Bank Ltd.
- ii. Banijya Bank.
- iii. Agricultural Development Bank
- iv. Nabil Bank Ltd.
- v. Nepal investment Bank Ltd.
- vi. Standard Charter Bank Ltd.
- vii. Himalayan Bank Ltd.
- viii. Nepal SBI Bank Ltd.
- ix. Nepal Bangladesh Bank Ltd.
- x. Everest Bank Ltd.
- xi. Bank of Kathmandu Ltd.
- xii. Nepal Credit and Commerce Bank Ltd.
- xiii. Nepal Industrial and Commercial Bank Ltd.
- xiv. Lumbini Bank Ltd.
- xv. Marchauchhre Bank Ltd.
- xvi. Kumari Bank Ltd.
- xvii. Laxmi Bank Ltd.
- xviii. Siddhartha Bank Ltd.
- xix. Global Bank Ltd.
- xx. Citizen Bank International Ltd.
- xxi. DCBL Bank Ltd.
- xxii. Prime Bank Ltd.



xxiii	Bank of Asia Ltd
xxv	Kist Bank
xxvi	NMB Bank Ltd.

(Source: Banking and Financial Statistics)

From these samples, Nepal Investment Bank, Himalayan Bank, Nepal SBI Bank, Everest Bank and Bank of Kathmandu have been selected and their investment performances are comparatively studies.

### **3.2 Methods of Data Analysis**

In the study, various financial, accounting and statistical tools have been used to achieve the objective of the study. The analysis of data will be done according to the patter of data available. Due to limited time and resources, simple analytical statistical tools such as percentage graph, Karl Pearson's Coefficient of correlation are used in the study.

Likewise, some financial tools such as ratio analysis and trend analysis have also been used for financial analysis.

The various tools applied in this study, have been briefly presented as under.

#### **3.2.1 Ratio of Commercial Banks Investment to Sample Bank Investment**

Total commercial banks Investment has cover by the sample bank Investment. It is derived by following equation.

Total commercial banks investment to Sample banks Investment ratio

$$= \frac{\text{Sample Bank Investment}}{\text{Total Com. Banks}}$$

#### **3.2.2 Segregation of Total Investment of Sample Banks.**

It is used to analyze how the sample banks have invested its collected funds. Banks generally Investment in government securities, share and debentures of other companies and NRB bond. An attempt is made to analyze how much percentage is invested by the banks in different sectors. The following equation is used for this purpose.

- i. Total Investment to govt. sec. Investment =  $\frac{\text{Investment on Gov. Sec}}{\text{Total Investment}}$
- ii. Total Investment to share & Debentures =  $\frac{\text{Investment on share \& Deb.}}{\text{Total Investment}}$
- iii. Total Investment to NRB bond =  $\frac{\text{Investment on NRB bond}}{\text{Total Investment}}$
- iv. Total Investment to Other =  $\frac{\text{Investment on other sector}}{\text{Total Investment}}$

### **3.3 Financial Tools**

Financial tools are used to examine the financial strength and weakness of bank. In this study financial tool like ration analysis and financial statement analysis have been used.

#### **3.3.1. Ratio Analysis**

Ratio analysis is a part of the whole process of analysis of financial statements of ant business or industrial concern especially to take output and credit decision. Thus ratio analysis is used to compare a firm's financial performance and status to that of other firm's or to it. The qualitative financial performance of a firm can be done with help of ration analysis. Even though, there are many ratios, only those ratios have been covered in this study, which are related to the Investment operation of the bank. This study contains following ratios.

##### **3.3.1.1. Asset Management Ratio**

Asset management ratio measures how efficiently the bank manages the resources at its command. The following ratios are used under this assets management ratio.

**a. Investment to Total Deposit Ratio**

Investment is one of the major forms of credit created to earn income. This implies the utilization of firm's deposit on Investment in government securities and shares debentures of other companies and bank. The ratio can be calculated by dividing total Investment by total deposit. It can be expressed as follows:

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

Total Investment consists of Investment on government securities, Investment on share and debentures, bond of other companies and other Investment.

**b. Investment Plus Loan and Advances to Total Deposit Ratio**

Loan and advances can also be regarded and Investment of banks. Investment as well as loan and advances both are done to generate income for the bank. Investment plus loan and advances to total deposit ratio is calculated out, how successfully the banks are utilizing their total deposits on loan and advances for profit generating purpose. Greater ratio implies the better utilizing of total deposits. This ratio can be obtained by dividing Investment plus loan and advances by Total deposits, which can be states as,

$$\text{Investment plus loan \& advances to total deposit ratio} = \frac{\text{Investment} + \text{Loan \& Adv}}{\text{Total Deposit}}$$

**c. Total Investment to Total Asset Ratio**

Investment is major component in the total working fund which indicates the ability of bank to channelize its deposit in the form of loan and investment to earn high return. Investment and loan and advances are the only income generating source of bank. This ratio can be computed by dividing total of Investment, Loan and advances by total Assets. This can be states as follows:

$$\text{Total Investment to Total Assets ratio} = \frac{\text{Total Investment}}{\text{Total Assets}}$$

Here, total Investment includes Investment on government securities, share and debentures of other company, other Investment and loan and advances. And total assets includes all assets of balance sheet, in other words, this includes current assets, net fixed assets, loans and development banks and other miscellaneous assets but exclude off balance sheet items like letter of credit, letter of guarantee etc.

**d. Investment on Government Securities to Total Assets Ratio**

Government securities are the safest place to invest the collected fund. Most of the commercial banks invest on securities issued by the government. Some banks do not invest sufficient funds in government securities. Other borrow frequently and thus lower the liquidity ratio.

Investment on government securities to total assets is calculated to find out the percentage of assets invested in government securities. This ratio is calculated by dividing Investment securities by Total assets.

This is presented as,

$$\text{Investment on government securities to total assets ratio} = \frac{\text{Investment on Gov. securities}}{\text{Total Assets}}$$

**e. Investment on Shares and Debentures to Total Assets Ratio**

Commercial banks hold shares of the other companies also. This ratio shows the banks investment in shares and debentures of the subsidiary and other companies. This ratio can be derived by dividing Investment on shares debentures by total Assets. It can expressed as,

$$\text{Investment on shares and debentures to Total Assets ratio} = \frac{\text{Investment on Sh. \& Deb.}}{\text{Total Assets}}$$

### **3.4 Statistical Tools**

Some important tools are used to achieve the objectives of his study. In this study statistical tools such as coefficient of correlation between different variable, trends analyses of important variables have been used which are as follows,

### 3.4.1. Multiple regression analysis:

Multiple Regression equation is the algebraic relationship between one dependent variable and two or more independent variables. This relationship is used to estimate the value of dependent variable for the given values of independent variables. In this regression one dependent variable and two independent variables  $x$  and  $x_1$  so that the multiple regression equation for the observed data is given by

$$Y = a + bx + b_1x_1 \dots \dots \dots \text{i}$$

Where  $a$  = point of intercept on  $Y$  –axis + the value of  $y$  when  $x = x_1 = 0$

$b$  = Slope of  $y$  with variable  $x$  holding variable  $x$  constant = Corresponding change in  $y$  for each unit change in  $x$  while  $x_1$  is held constant = the partial regression coefficient of  $y$  on  $x_1$  keeping  $x$  constant.

Where  $a$ ,  $b$ , and  $b_1$  are regression parameters whose values are to be determined. To find the values of  $a$ ,  $b$ , and  $b_1$  we have to solve the following normal equations.

$$\sum y = na + b \sum x + b_1 \sum x_1 \dots \dots \dots \text{ii}$$

$$\sum xy = a \sum x + b \sum x^2 + b_2 \sum xx_1 \dots \dots \dots \text{iii}$$

$$\sum x_1y = a \sum x_1 + b \sum xx_1 + b_1 \sum x_1^2 \dots \dots \dots \text{iv}$$

### 3. 4.2. Co-efficient of Correlation Analysis

The correlation coefficient determines the relationship between two properties. This analysis identifies and interprets the relationship between the two or more variables. In the case of highly correlated variables, the effect on one variable may have effect on other correlated variable. When two elements have zero correlation with other they are unrelated in anyway and have zero variance. Positive correlation implies positive covariance.

Symbolically,

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

Where,  $n$  = number of Observation in series  $X$  and  $Y$ .

$X$  = sum of observation in series X.

$Y$  = sum of observation in series Y.

$X_2$  = sum of square observation in series X.

$Y_2$  = sum of square observation in series Y.

$XY$  = sum of the product of observation in series X and Y.

The value of correlation of coefficient ( $r$ ) lies between -1 to 1 i.e.  $-1 \leq r \leq 1$ .

Karl-Person's co-efficient of correlation has used to find out the relationship between the deposit and loan and advances plus Investment made by the banks.

### **3.4.3. Coefficient of Determination ( $R^2$ ):**

The coefficient of determination is a measure of the degree of linear association or correlation between two variables one of which happens to be independent and other being dependent variable. In other words coefficient of determination measures the percentage total variable independent variables explained by independent variables. Zero to one is the ranging measurement of this coefficient of multiple determinations. If  $R^2$  is equal to 0.75, which indicates that total variation in the dependent variable. If the regression line is a perfect estimator  $R^2$  will be equal to +1, when there is no correlation the value of  $R^2$  is zero.

### **3.4.4. Probable Error of Coeff. Of Correlation:**

The probable error is a measure of as certainty the reliability of the value of the person's coeff. of correlation. If the probable error is added to and subtract from the coeff. of correlation, it would give two such limits within which we can reasonably accept the value of coeff. of coefficient to vary. The formula for finding out the probable error of the Karl Person's coeff. of correlation is:

Where,

$P.E(r)$  = probable error of coeff. of correlation

$r$  = Coefficient of correlation

$n$  = No. of pairs observation

If  $r < 6P.E(r)$  the value of 'r' is not significant no matter how high r value.

i.e. there is no evidence of correlation between the variables.

If  $r > 6 P.E(r)$  the value of  $r$  is significant, i.e. correlations is significant.

### 3.4.5. Trend Analysis (The Least-Square Method)

Trend analysis describes the average relationship between two series where the one series relates to time and other series to the value of a variable. It generally shows that the line of best-fit or straight line is obtained or not. The line of the best fit describes the change in a given series accompanying a unit change in time. In other words, it gives that best possible mean value of dependent variable for a given value of independent variable.

For the calculation of the “line of best fit” following equations should be kept in mind.

$$Y_c = a + bx$$

Where,  $Y_c$  = the estimated value of ‘Y’ for given value of  $x$  obtained from the line of regression of Y on  $x$ .

$a$  = “Y –intercept” or mean of ‘Y’ value.

$b$  = Slope of trend line or rate of change.

$X$  = the variable in times series analysis represents time.

There are two normal equations estimating for ‘a’ and ‘b’ are;

$$y = na + b \sum x \dots\dots\dots i$$

$$xy = a \sum x + b \sum x^2 \dots\dots\dots ii$$

Since  $\sum x = 0$

Then the above equation becomes,

$$a = Y/n$$

$$\text{and } b = \frac{\sum xy}{\sum x^2}$$

The term best fit interpreted in accordance with the principle of least square which consist in minimizing the sum of the square residual or errors of estimate i.e. the deviations between the given observed value of the variables and their corresponding estimated values as given by the line of best fit.

The trend value of investment of NIBL, HBL, NSBIBL, EBL and BOKL from FY 2060 to 2064 and makes the forecast for the next five years till FY 2069.

### **3.4.6. Arithmetic Mean**

Arithmetic mean is the sum of all observations divided by the number of observations. The arithmetic mean is denoted by  $(\bar{X})$ . It is computed as:

$$\text{Arithmetic Mean } (\bar{X}) = \frac{\sum f}{n}$$

Arithmetic Mean is calculated to find the mean of the financial ratio.

### **3.4.7. Standard Deviation**

Standard Deviation is calculated to measures dispersion. It is computed as:

$$\text{S.D. } (\dagger) = \frac{\sqrt{\sum (X - \bar{X})^2}}{N}$$

### **3.4.8. Co-Variance (C.V)**

Co-Variance is calculated to find variance from the mean. It is computed as:

$$\text{CV} = \frac{\dagger}{x}$$



## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF DATA

This chapter is concerned with financial analysis and statistical analysis is concerned about comparative analysis and interpretation of available data. Various financial and statistic tools have been used in this part. Necessary figures and tables are also presented in this part to describe about the investment mechanism of the banks.

#### 4.1. Presentation and Analysis of Secondary Data:

This section provides interpretation and analysis of secondary data. The main purpose of this chapter is to study, evaluate and analyze those major financial performances, which are mainly related to the investment management and fund mobilization. It is notable that all types of financial ratios are not studies under this chapter.

##### 4.1.1 Ratio of Commercial Banks Investment to Sample Banks Investment

###### 4.1.1.1. Ratio of NIBL Investment to Total Commercial Banks Investment

This ratio indicates the portion of Investment made by Nepal Investment Bank o total Investment made by commercial banks of Nepal. It shows how much NIBL is directly involved in Investment. And the ratio is derived by dividing Investment made by NIBL by Total Investment made by commercial banks.

**Table No.1**  
**Total Commercial Banks Investment to NIBL Investment Ratio**  
(Rs. in million)

year	Total Investment of commercial banks	NIBL Investment	Ratio (%)
2060	45386	1745	3.84
2061	49669	4172	8.40
2062	60181	4074	6.77
2063	82172	5673	6.90
2064	92581	6581	7.04
<b>Mean</b>			<b>6.59</b>
<b>S.D</b>			<b>1.49</b>
<b>C.V.</b>			<b>0.23</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows the Investment made by all commercial banks and by NIBL bank alone. From the above table it shows that portion of Investment made by NIBL is increasing every year. In the FY 2061 the ratio is almost 8.40%, which is optimum. The mean ratio is 6.59 during the study period.

#### 4.1.1.2. Ratio of HBL Investment to Total Commercial Banks Investment

This ratio indicates the portion of Investment made by Himalayan bank to total Investment made by commercial banks of Nepal. It shows how much Himalayan bank is directly involve in Investment. And the ratio is derived by dividing Investment made by HBL by Total investment made by commercial banks.

**Table No.2**  
**Total Commercial Banks Investment to HBL Investment Ratio**

(Rs. in million)

<b>year</b>	<b>Total Investment of commercial banks</b>	<b>NIBL Investment</b>	<b>Ratio (%)</b>
2060	45386	4014	8.84
2061	49669	2878	5.79
2062	60181	5510	9.16
2063	82172	10891	13.25
2064	92581	11822	12.77
<b>Mean</b>			<b>9.96</b>
<b>S.D</b>			<b>2.76</b>
<b>C.V.</b>			<b>0.28</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows the investment made by all commercial banks and by HBL bank alone. From the above table it shows that portion of investment made by HBL is increasing every year except in 2061. In the FY 2063 the ratio is almost 13.5%, which is optimum in comparison with total 19 commercial banks of the country. The mean ratio is 9.96 during the study period.

#### 4.1.1.3. Ratio of NSBI Investment to Total Commercial Banks Investment

This ratio indicates the portion of investment made by Nepal SBI bank to total investment made by commercial banks of Nepal. It shows how much Nepal SBI bank has invested. The ratio is derived by dividing investment made by Nepal SBI bank by Total Investment made by commercial banks.

**Table No 3**

#### **Total Commercial Banks Investment to NSBIBL Investment Ratio**

(Rs. in million)

<b>year</b>	<b>Total Investment of commercial banks</b>	<b>NIBL Investment</b>	<b>Ratio (%)</b>
2060	45386	1207	2.66
2061	49669	1890	3.80
2062	60181	2608	4.33
2063	82172	3700	4.50
2064	92581	2378	2.57
<b>Mean</b>			<b>3.57</b>
<b>S.D</b>			<b>0.81</b>
<b>C.V.</b>			<b>0.23</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows the total Investment of commercial banks and Nepal SBI bank alone. From the above table it shows that only few portion of Investment is cover by Nepal SBI bank in comparison to total Investment of commercial bank. In the FY 2064 only 2.57% is covers by Investment of Nepal SBI bank in total investment made by commercial banks. The mean ratio is 3.57 during the study period.

#### 4.1.1.4. Ratio of EBL Investment to Total Commercial Banks Investment

This ratio indicates the portion of Investment made by EBL to total investment made by commercial banks of Nepal. It shows how much EBL has invested. The ratio is derived by dividing Investment made by EBL by total investment made by commercial banks.

**Table NO. 4**

**Total Commercial Banks Investment to EBL Investment Ratio**

(Rs. in million)

<b>year</b>	<b>Total Investment of commercial banks</b>	<b>NIBL Investment</b>	<b>Ratio (%)</b>
2060	45386	1606	3.54
2061	49669	2483	5.00
2062	60181	2120	3.52
2063	82172	4201	5.11
2064	92581	4985	5.38
<b>Mean</b>			<b>4.51</b>
<b>S.D</b>			<b>0.81</b>
<b>C.V.</b>			<b>0.18</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows the investment made by all commercial banks and by EBL alone. From the above table it shows that portion of investment made by EBL is increasing every year except in 2062. The mean ratio is 4.51 during the study period.

**4.1.1.5 Ratio of BOKL Investment to Total Commercial Banks Investment**

This ratio indicates the portion of Investment made by BOKL to total investment made by commercial banks of Nepal. It shows how much BOKL has invested. The ratio is derived by dividing investment made by BOKL by Total investment made by commercial banks.

**Table No. 5**

**Total Commercial Banks Investment to BOKL Investment Ratio**

(Rs. in million)

year	Total Investment of commercial banks	NIBL Investment	Ratio (%)
2060	45386	1619	3.57
2061	49669	2395	4.82
2062	60181	2236	3.72
2063	82172	2748	3.34
2064	92581	2995	3.24
<b>Mean</b>			<b>3.74</b>
<b>S.D</b>			<b>0.57</b>
<b>C.V.</b>			<b>0.15</b>

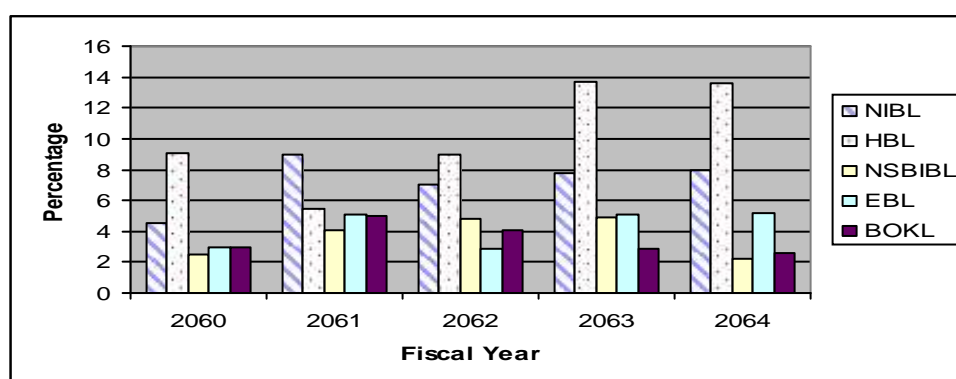
(Source: Banking and Financial Statistics, NRB)

The above table shows the investment made by all commercial banks and by BOKL alone. From the above table it shows that portion of investment made by BOKL is increasing every year except in 2062. The mean ratio is 3.74 during the study period.

**Figure No. 1:**

**Total Commercial Banks Investment to Total Investment Ratio**

(Rs. in million)



(Source: Banking and Financial Statistics, NRB)

The above Table No. 1 to 5 and Figure No. 1 shows that HBL covers more percentage than other 4 banks and NSBI bank covers less percentage than other banks on investment made by total commercial banks. Mean of the ratios of HBL Investment is

also higher than that of other banks. Similarly the standard deviation and coefficient of variation between the ratio of HBI investment to total commercial bank Investment is comparatively higher than that of other banks. It means there is more variability in investment in HBL than other. It is due to higher rate of increment of investment pattern in HBL.

## 4.1.2 Segregation of Investment

### 4.1.2.1. Segregation of Investment of NIBL Bank

NIBL invests collected funds in different sectors. Mostly commercial banks are found to invest in government securities, share and debentures of other companies and NRB bonds. Here an attempt is made to segregate the investment made by NIBL.

**Table No. 6**  
**Segregation of Investment of NIBL**

(Rs. in million)

Year	Investment	Gov. sec	%	Shares and Deben.	%	NRB Bond	%	Other	%
2060	1745	400	22.92	1345	77.08	-	-	-	-
2061	4172	2001	47.96	2171	52.04	-	-	-	-
2062	4074	1948	47.81	204	5.01	-	-	1922	47.18
2063	5673	2522	44.46	108	1.90	-	-	3043	53.64
2064	6518	3256	49.95	55	0.84	-	-	3207	49.20

(Source: Banking and Financial Statistics, NRB)

The above table shows the investment made by NIBL in different sectors. NIBL is found to invest its fund in Government securities, shares and debenture of other industries, NRB bond and others. From the FY 2060 to 2064 Investment in Government securities increases and investment in share and debenture of other companies decreasing but from the FY 2062 investment in other sector increasing.

#### 4.1.2.2. Segregation of Investment of HBL Bank

HBL invests collected funds in different sectors. Mostly commercial banks are found to invest in government securities, share and debentures of other companies and NRB bonds. Here an attempt is made to segregate the investment made by HBL.

**Table No. 7**  
**Segregation of Investment of HBL**

(Rs. in million)

Year	Investment	Gov. sec	%	Shares and Deben.	%	NRB Bond	%	Other	%
2060	4014	3980	99.15	34	0.85	-	-	-	-
2061	2878	2782	96.67	96	3.33	-	-	-	-
2062	5510	5470	99.27	40	0.73	-	-	-	-
2063	10891	5145	47.24	40	0.37	-	-	5706	52.39
2064	11822	6455	54.60	72	0.61	-	-	5295	44.79

(Source: Banking and Financial Statistics, NRB)

The above table show the investment made by HBL in different sector. HBL is found to invest its fund in Government securities, shares and debenture of other industries, NRB bond and others. From the FY 2060 to 2063 Investment in Government securities increases and investment in share and debenture of other companies decreasing but from the FY 2063 investment in other sector increasing.

#### 4.1.2.3. Segregation of Investment of NSBIBL

NSBI bank invests collected funds in different sectors. Mostly commercial banks are found to invest in government securities, share and debentures of other companies and NRB bonds. Here an attempt is made to segregate the investment made by NSBI bank.

**Table No.8****Segregation of Investment of NSBIBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Gov. sec</b>	<b>%</b>	<b>Shares and Deben.</b>	<b>%</b>	<b>NRB Bond</b>	<b>%</b>	<b>Other</b>	<b>%</b>
2060	1207	1189	98.51	18	1.49	-	-	-	-
2061	1890	1872	99.05	18	0.95	-	-	-	-
2062	2608	2588	99.23	20	0.77	-	-	-	-
2063	3700	3680	99.46	20	0.54	-	-	-	-
2064	2378	2346	98.65	20	1.35	-	-	-	-

(Source: Banking and Financial Statistics, NRB)

The above table show the investment made by NSBIBL in different sector. NSBIBL is found to invest its fund in Government securities, shares and debenture of other industries, NRB bond and others. The most of its fund investment in government securities and less in share debenture of other industries.

**4.1.2.4 Segregation of Investment of EBL Bank**

EBL invest collected funds in different sectors. Mostly commercial banks are found to invest in government securities, share and debentures of other companies and NRB bonds. Here an attempt is made to segregate the investment made by EBL.

**Table No. 9****Segregation of Investment of EBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Gov. sec</b>	<b>%</b>	<b>Shares and Deben.</b>	<b>%</b>	<b>NRB Bond</b>	<b>%</b>	<b>Other</b>	<b>%</b>
2060	1606	1599	99.56	17	0.44	-	-	-	-
2061	2483	2466	99.32	17	0.68	-	-	-	-
2062	2120	2100	99.06	20	0.94	-	-	-	-
2063	4201	3549	84.48	20	0.47	-	-	632	15.05
2064	4985	4705	94.38	20	0.40	-	-	260	5.22

(Source: Banking and Financial Statistics, NRB)



The above table show the investment made by EBL in different sector. EBL is found to invest its fund in Government securities, shares and debenture of other industries. The most of its fund investment in government securities and less in share debenture of other industries. From the F/Y 2063 it's invest in other sector.

#### 4.1.2.5. Segregation of Investment of BOKL

BOKL invests collected funds in different sectors. Mostly commercial banks are found to invest in government securities, share and debentures of other companies and NRB bonds. Here an attempt is made to segregate the investment made by BOKL.

**Table No. 10**  
**Segregation of Investment of BOKL** (Rs. in million)

Year	Investment	Gov. sec	%	Shares and Deben.	%	NRB Bond	%	Other	%
2060	1619	1511	93.33	108	6.67	-	-	-	-
2061	2395	2372	99.03	23	0.97	-	-	-	-
2062	2236	2147	96.02	19	3.98	-	-	-	-
2063	2748	2645	96.58	94	3.42	-	-	-	-
2064	2995	2332	77.86	663	22.14	-	-	-	-

(Source: Banking and Financial Statistics, NRB)

The above table show the investment made by BOKL in different sector. BOKL is found to invest its fund in Government securities, shares and debenture of other industries. The most of its fund investment in government securities and less in share debenture of other industries.

#### 4.1.3 Asset Management Ratio

A commercial bank must be able to manage its assets very well to earn high profit, to satisfy its customers and for its own existence. Assets management ratio measures how efficiently, the bank manages the resources at its commands.

#### 4.1.3.1 Ratio of Total Investment to Total Deposit

A commercial bank may finance its deposit fund to small industries building up of bank credit depends upon mutual connections and relationship between the banks and the customers. Banks needs to satisfy themselves regarding the technical knowledge and capacity for hard and sustained work on the part of borrows and the quality and marketability of the goods produced by them. Therefore commercial banks may mobilize its bank deposit by investing its fund in different securities issued by government and other financial or non-financial or companies. Now effort has made to measure the extent to which the banks are successful in mobilizing the total deposits on investment.

In the process of portfolio management of bank assets, various factors such as availability of fund, liquidity requirement, central bank's norms etc. are to be considered in general. A high ratio is the indicator of high success to mobilize the banking fund as investment and vice versa. This ratio is calculated by dividing total investment by total deposit.

**Table No.11**  
**Total Investment to Total Deposit Ratio of NIBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Deposit</b>	<b>Ratio (%)</b>
2060	1745	7923	22.02
2061	4172	11706	35.64
2062	4074	14255	28.58
2063	5673	18927	29.97
2064	6518	24489	26.62
<b>Mean</b>			<b>28.57</b>
<b>S.D.</b>			<b>4.44</b>
<b>C.V.</b>			<b>0.16</b>

(Source: Banking and Financial Statistics, NRB)

The table shows the investment and deposit ratio of NIBL. From the FY 2060 to 2064 the investment and deposit goes on increasing trend except in FY 2062 the investment decrease. The average ratio of total investment to total deposit is 28.57, standard deviation is 4.44 and co-efficient variation is 0.16 percent.

**Table No.12**  
**Total Investment to Total Deposit Ratio of HBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Deposit</b>	<b>Ratio (%)</b>
2060	4014	21003	19.11
2061	2878	22761	12.64
2062	5510	24831	22.19
2063	10891	26456	41.71
2064	11822	29906	39.53
<b>Mean</b>			<b>26.93</b>
<b>S.D.</b>			<b>11.40</b>
<b>C.V.</b>			<b>0.40s</b>

(Source: Banking and Financial Statistics, NRB)

The table shows the investment and deposit ratio of HBL. From the FY 2060 to 2064 the investment and deposit goes on increasing trend except in FY 2061 the investment decrease. The average ratio of total investment to total deposit is 26.39, standard deviation is 11.40 and co-efficient variation is 0.40 percent.

**Table No. 13****Total Investment to Total Deposit Ratio of NSBIBL (Rs. in million)**

<b>Year</b>	<b>Investment</b>	<b>Deposit</b>	<b>Ratio (%)</b>
2060	1207	6523	18.50
2061	1890	7232	26.13
2062	2608	8646	30.16
2063	3700	10853	34.09
2064	2378	11445	20.78
<b>Mean</b>			<b>25.93</b>
<b>S.D.</b>			<b>5.77</b>
<b>C.V.</b>			<b>0.22</b>

(Source: Banking and Financial Statistics, NRB)

The table shows the investment and deposit ratio of NSBIBL. From the FY 2060 to 2064 the investment and deposit goes on increasing trend except in FY 2064 the investment decrease. The average ratio of total investment to total deposit is 25.93, standard deviation is 5.77 and co-efficient variation is 0.22 percent.

**Table No. 14****Total Investment to Total Deposit Ratio of EBL (Rs. in million)**

<b>Year</b>	<b>Investment</b>	<b>Deposit</b>	<b>Ratio (%)</b>
2060	1606	6695	23.99
2061	2483	8064	30.79
2062	2120	10098	20.99
2063	4201	13802	30.44
2064	4985	19098	26.10
<b>Mean</b>			<b>26.46</b>
<b>S.D.</b>			<b>3.76</b>
<b>C.V.</b>			<b>0.14</b>

(Source: Banking and Financial Statistics, NRB)

The table shows the investment and deposit ratio of EBL. From the FY 2060 to 2064 the investment and deposit goes on increasing trend except in FY 2062 the investment decrease. The average ratio of total investment to total deposit is 26.46, standard deviation is 3.76 and co-efficient variation is 0.14 percent.

**Table No. 15**  
**Total Investment to Total Deposit Ratio of BOKL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Deposit</b>	<b>Ratio (%)</b>
2060	1619	6170	26.24
2061	2395	7742	30.93
2062	2236	8943	25.00
2063	2748	10429	26.35
2064	2995	12359	24.23
<b>Mean</b>			<b>26.55</b>
<b>S.D.</b>			<b>2.33</b>
<b>C.V.</b>			<b>0.09</b>

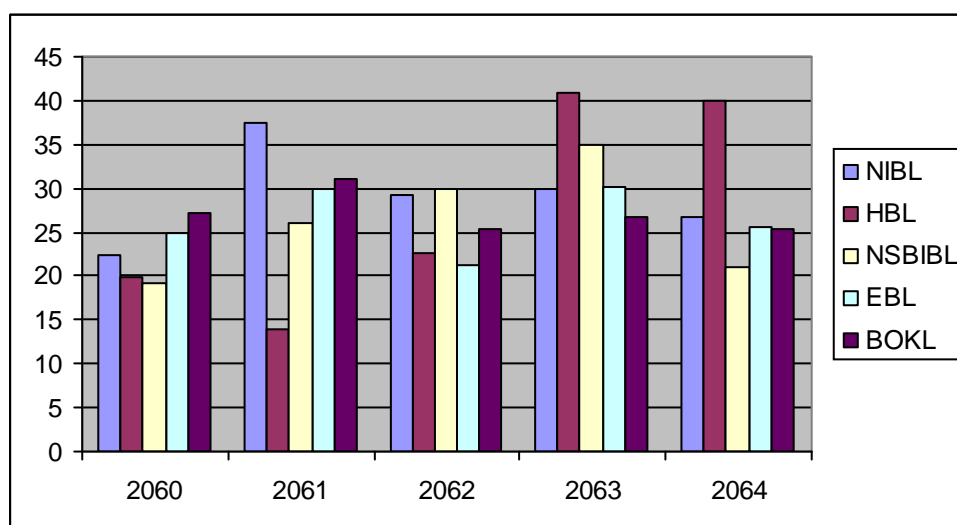
(Source: Banking and Financial Statistics, NRB)

The table shows the investment and deposit ratio of BOKL. From the FY 2060 to 2064 the investment and deposit goes on increasing trend except in FY 2062 the investment decrease. The average ratio of total investment to total deposit is 26.55, standard deviation is 2.33 and co-efficient variation is 0.09 percent.

**Figure No. 2:**

**Total Investment to Total Deposit Ratio**

**(in million)**



The above tables 11 to 15 and figure No. 2 Shows that HBL has lower investment to deposit ratio of FY 2056 and it has increased its ratio up to 49.18 percent in the FY 2059. Whereas Nepal SBI bank has lower ratio on FY 2057 and higher ratio on FY 2055.

Mean ratio of HBL is higher than that of Nepal SBI bank. Therefore, it is clear that HBL's capacity to mobilize its deposits on investment is better than that of Nepal SBI. On the other hand, observing the C.V. of ratios, we can further conclude that ratio of HBL less consistent then that of Nepal SBI because of its higher C.V. i.e.  $0.72 > 0.60$ . But in conclusion it can be said that HBL is successful in utilizing its resources on Investment than that of Nepal SBI.

#### **4.1.3.2 Ratio of Total Investment plus Loan and Advance with Deposits**

Loan and Advancement is also another type of investment of banks. Since the major functions of commercial banks are of deposits collection and lending, it is very important to have looked at the credit to deposit ration. Lending is a high risk Investment for a bank and the main income source of the bank is also the interest earned from loan and advances. This ratio actually measures the extent to which the banks are successful to mobilization the total deposits on investment plus loan and advances for the purpose of profit generation. A high ratio of investment plus loan and advancement indicates better mobilization of collected deposits and vise-versa. But it should be noted that too high ratio may not be better from its liquidity point view. This ratio is calculated by dividing total investment plus loan & advances by total deposits. The following table exhibits the ratio of total Investment plus loan and advancement to total deposits of HBL and Nepal SBI bank.

**Table No. 16**  
**Total Investment plus Loan and Advance to Deposits ratio of NIBL**

(Rs. in million)

<b>Year</b>	<b>Investment + Loan &amp; Advances</b>	<b>Deposits</b>	<b>Ratio (%)</b>
2060	7618	7923	96.15
2061	11347	11706	96.93
2062	14370	14255	100.8
2063	18680	18927	98.69
2064	24001	24489	98.00
<b>Mean</b>			<b>98.14</b>
<b>S.D.</b>			<b>1.60</b>
<b>C.V.</b>			<b>0.02</b>

(Source: Banking and Financial Statistics, NRB)

The table shows Investment plus Loan and Advance to Deposits ratio of NIBL. From the FY 2060 to 2064 the investment plus Loan and Advance to deposit goes on increasing trend. The average ratio of investment plus Loan and Advance to total deposit is 98.14, standard deviation is 1.60 and co-efficient variation is 0.02 percent.

**Table No. 17**  
**Total Investment plus Loan and Advance to Deposits ratio of HBL**

(Rs. in million)

<b>Year</b>	<b>Investment + Loan &amp; Advances</b>	<b>Deposits</b>	<b>Ratio (%)</b>
2060	14909	21003	70.99
2061	15960	22761	70.12
2062	18755	24831	75.53
2063	26406	26456	99.81
2064	29494	29906	90.62
<b>Mean</b>			<b>83.01</b>
<b>S.D.</b>			<b>13.36</b>
<b>C.V.</b>			<b>.016</b>

(Source: Banking and Financial Statistics, NRB)

The table shows Investment plus Loan and Advance to Deposits ratio of HBL. From the FY 2060 to 2064 the investment plus Loan and Advance to deposit goes on increasing trend. The average ratio of investment plus Loan and Advance to total deposit is 83.01, standard deviation is 13.36 and co-efficient variation is 0.016 percent.

**Table No. 18**  
**Total Investment plus Loan and Advance to Deposits ratio of NSBIBL**  
(Rs. in million)

<b>Year</b>	<b>Investment + Loan &amp; Advances</b>	<b>Deposits</b>	<b>Ratio (%)</b>
2060	5968	6523	91.49
2061	7380	7232	102.04
2062	9227	8646	106.72
2063	11760	10853	108.36
2064	12224	11445	106.81
<b>Mean</b>			<b>103.08</b>
<b>S.D.</b>			<b>6.17</b>
<b>C.V.</b>			<b>0.06</b>

(Source: Banking and Financial Statistics, NRB)

The table shows Investment plus Loan and Advance to Deposits ratio of NSBIBL. From the FY 2060 to 2064 the investment plus Loan and Advance to deposit goes on increasing trend. The average ratio of investment plus Loan and Advance to total deposit is 103.08, standard deviation is 6.17 and co-efficient variation is 0.06 percent.

**Table No. 19**  
**Total Investment plus Loan and Advance to Deposits ratio of EBL**

(Rs. in million)

<b>Year</b>	<b>Investment + Loan &amp; Advances</b>	<b>Deposits</b>	<b>Ratio (%)</b>
2060	6647	6695	99.28
2061	8600	8064	106.48
2062	10034	10098	99.36
2063	14326	13802	103.79
2064	19044	19098	99.72
<b>Mean</b>			<b>101.73</b>
<b>S.D.</b>			<b>2.91</b>
<b>C.V.</b>			<b>0.03</b>

(Source: Banking and Financial Statistics, NRB)



The table shows Investment plus Loan and Advance to Deposits ratio of EBL. From the FY 2060 to 2064 the investment plus Loan and Advance to deposit goes on increasing trend. The average ratio of investment plus Loan and Advance to total deposit is 101.73, standard deviation is 2.91 and co-efficient variation is 0.03 percent.

**Table No. 20**  
**Total Investment plus Loan and Advance to Deposits ratio of BOKL**  
(Rs. in million)

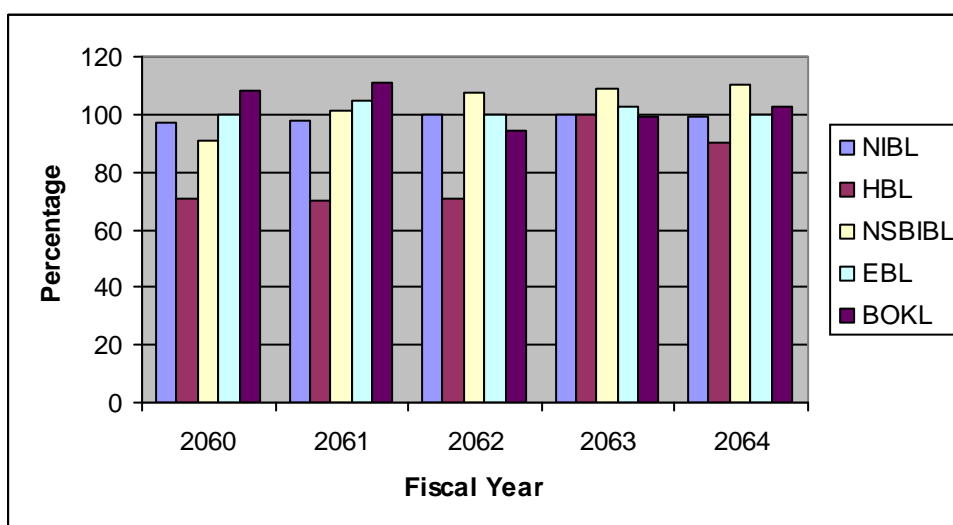
Year	Investment + Loan & Advances	Deposits	Ratio (%)
2060	6532	6170	105.86
2061	8444	7742	109.07
2062	8403	8943	93.96
2063	10274	10429	98.51
2064	12659	12359	102.43
<b>Mean</b>			<b>101.96</b>
<b>S.D.</b>			<b>5.39</b>
<b>C.V.</b>			<b>0.05</b>

(Source: Banking and Financial Statistics, NRB)

The table shows Investment plus Loan and Advance to Deposits ratio of HBL. From the FY 2060 to 2064 the investment plus Loan and Advance to deposit goes on increasing trend. Except in FY 2062 the investment plus Loan and Advance decrease. The average ratio of investment plus Loan and Advance to total deposit is 101.96, standard deviation is 5.39 and co-efficient variation is 0.05 percent.

**Figure No. 3:**

**Total Investment plus Loan and Advance to Deposits ratio**



The above table 15 to 20 and Figure No. 3 shows that the ratio of total investment plus loan and advances to deposit. NSBIBL is higher ratio than other banks likewise BOKL, EBL, HBL and NIBL have got less ratio. That means the liquidity of NSBIBL is too low than other banks likewise BOKL. EBL, HBL and NIBL. The average ratio of NSBIBL is 103.08, BOKL is 101.96, EBL is 101.73, HBL is 98.62 and NIBL is 98.14 percent. C.V. of HBL is higher than other banks which means that ratio of HBL is more variable than other banks.

#### 4.1.3.3. Ratio of Investment and Total Assets Ratio of NIBL

A commercial bank's working fund should play very active role in profit generation through fund mobilization. This ratio reflects the extent to which the banks are successful in mobilizing their total assets on Investment for the purpose of income generation. A high ratio indicates an better mobilization of fund as investment and vice-versa. This ratio is calculated by dividing total investment by total assets i.e. total working fund. The following table exhibits the ratio of investment to total assets of NIBL, HBL, EBL, and BOKL.

**Table No. 21**

#### **Total Investment to Total Assets Ratio of NIBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1745	9102	19.17
2061	4172	13565	30.75
2062	4074	16638	24.49
2063	5673	22007	25.78
2064	6518	28573	22.81
<b>Mean</b>			<b>24.6</b>
<b>S.D.</b>			<b>3.79</b>
<b>C.V.</b>			<b>0.15</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows total Investment to total Assets Ratio of NIBL. From the FY 2060 to 2064. Total Investment and Total Assets are goes on increasing trend. Except in FY 2062 the investment decrease. The average ratio of total Investment to total Assets is 24.6, standard deviation is 3.79 and co-efficient variation is 0.15 percent.

**Table No. 22**  
**Total Investment to Total Assets Ratio of HBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	4014	24721	16.24
2061	2878	26751	10.76
2062	5510	29103	18.93
2063	10091	31065	35.06
2064	11022	34646	34.12
<b>Mean</b>			<b>23.02</b>
<b>S.D.</b>			<b>9.81</b>
<b>C.V.</b>			<b>0.43</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows total Investment to total Assets Ratio of HBL. From the FY 2060 to 2064. Total Investment and Total Assets are goes on increasing trend, except in FY 2061 the investment decrease. The average ratio of total Investment to total Assets is 23.02, standard deviation is 9.81 and co-efficient variation is 0.43 percent

**Table No. 23**  
**Total Investment to Total Assets Ratio of NSBIBL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1207	8001	15.08
2061	1890	8933	21.15
2062	2608	10617	24.56
2063	3700	13736	26.94
2064	2378	15397	15.44
<b>Mean</b>			<b>20.63</b>
<b>S.D.</b>			<b>4.66</b>
<b>C.V.</b>			<b>0.23</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows total Investment to total Assets Ratio of NSBIBL, From the FY 2060 to 2064. Total Investment and Total Assets are goes on increasing trend, except in FY 2064 the investment decrease. The average ratio of total Investment to total Assets is 20.62, standard deviation is 4.66 and co-efficient variation is 0.23 percent

**Table No. 24**  
**Total Investment to Total Assets Ratio of EBL** (Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1606	8242	19.48
2061	2483	9953	24.95
2062	2120	15069	14.07
2063	4201	16715	25.13
2064	4985	23335	21.36
<b>Mean</b>			<b>20.99</b>
<b>S.D.</b>			<b>4.08</b>
<b>C.V.</b>			<b>0.19</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows total Investment to total Assets Ratio of EBL. From the FY 2060 to 2064. Total Investment and Total Assets are goes on increasing trend, except in FY 2062 the investment decrease. The average ratio of total Investment to total Assets is 20.99, standard deviation is 4.08 and co-efficient variation is 0.19 percent

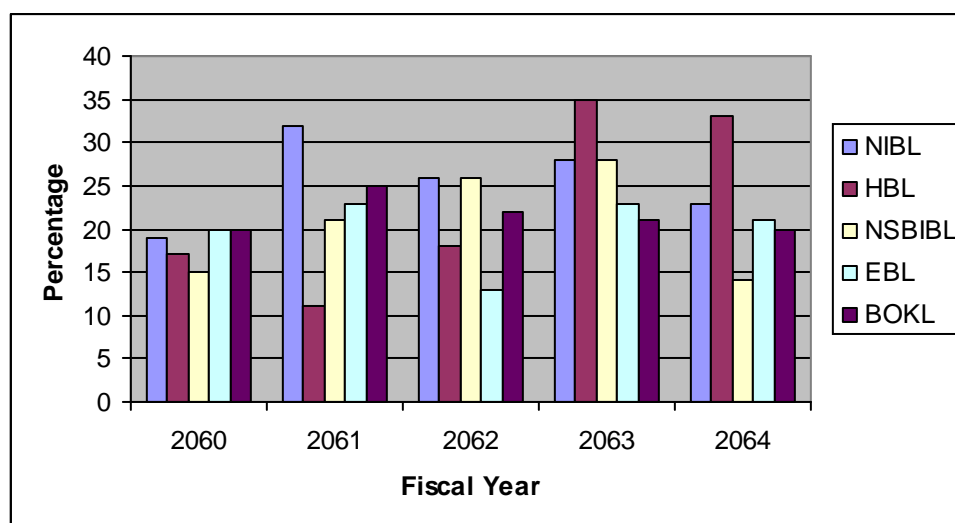
**Table No. 25****Total Investment to Total Assets Ratio of BOKL**

(Rs. in million)

<b>Year</b>	<b>Investment</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1619	7966	20.32
2061	2395	9963	24.04
2062	2236	10256	21.80
2063	2743	12661	21.70
2064	2995	14998	19.97
<b>Mean</b>			<b>17.77</b>
<b>S.D.</b>			<b>4.06</b>
<b>C.V.</b>			<b>0.23</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows total Investment to total Assets Ratio of BOKL, From the FY 2060 to 2064. Total Investment and Total Assets are goes on increasing trend, except in FY 2062 the investment decrease. The average ratio of total Investment to total Assets is 17.77, standard deviation is 4.06 and co-efficient variation is 0.23 percent.

**Figure No. 4****Total Investment to Total Assets Ratio**

The above tables 21 to 25 and Figure No.4 shows that the ratio of Total Investment to total assets. The average ratio of NIBL is higher than other banks likewise HBL, EBL, NSBIBL and BOKL. The average ratio of NIBL is 24.6, HBL is 23.02, EBL is 20.99, NSBIBL is 20.63 and BOKL is 17.77 percentages. It means NIBL has used more assets for investment and BOKL has used fewer assets for investment than other banks. C.V. of HBL ratio is higher and NIBL is lower than other banks which means that ratio of HBL is more variable than other banks. Similarly S.D of HBL's ratio is also greater than other banks which show that HBL is operation in higher risk than other banks.

#### **4.1.3.4 Investment on Government Securities to Total Assets Ratio**

The commercial banks mostly invest its funds collected in various government securities issued by government because they consider them most liquid, than is, they can realize cash at short notice and without must loss in capital invested. And also such securities would serve as the basis for loan from the central bank at the bank rate. The government securities are the safest place to invest the funds. They can be easily sold in the market or they can be converted into the cash in other ways. But they are not so much liquid as cash and bank balance.

Here an effort is made to examine the position of a bank's total assets that is invested on different government securities. This ratio is very important to know the extent of which the banks are successful in mobilizing their total working fund on different types of government securities to maximize the income. All the deposits of the bank should not be utilized in loan and advances and other credit from security and liquidity point of view. Therefore, to some extent, commercial banks seem to be interested to utilize their deposits by purchasing government securities. A high ratio indicates better mobilization of fund as Investment of government securities and vice-versa.

This ratio is calculated by dividing Investment on government securities by total assets. The following table shows the ratios of investment on government securities to total working fund of NIBL, HBL, NSBIBL, EBL, and BOKL.

**Table No. 26**  
**Investment on Government Securities to Total Assets Ratio of NIBL**  
(Rs. in million)

<b>Year</b>	<b>Investment on government securities</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	400	9102	4.39
2061	2001	13566	14.75
2062	1949	16638	11.75
2063	2522	22007	11.46
2064	3256	28573	11.39
<b>Mean</b>			<b>10.74</b>
<b>S.D.</b>			<b>3.41</b>
<b>C.V.</b>			<b>0.32</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Total Investment on Government Securities to Total Assets Ratio of NIBL. From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Total Investment on Government Securities also goes on increasing trend, except in FY 2062 the investment on government securities decrease. The average ratio of total Investment on Government Securities to total Assets 10.14, standard deviation is 3.41 and co-efficient variation is 0.32 percent.

**Table No. 27**  
**Investment on Government Securities to Total Assets Ratio of HBL**  
(Rs. in million)

<b>Year</b>	<b>Investment on government securities</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	3980	24721	16.09
2061	2782	26751	10.39
2062	5470	29103	18.79
2063	5144	31065	16.59
2064	6455	34646	18.63
<b>Mean</b>			<b>16.09</b>
<b>S.D.</b>			<b>3.05</b>
<b>C.V.</b>			<b>0.19</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Total Investment on Government Securities to Total Assets Ratio of HBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Total Investment on Government Securities also goes on increasing trend, except in FY 2061 and 2063 the investment on government securities decrease. The average ratio of total Investment on Government Securities to total Assets 16.09, standard deviation is 3.05 and co-efficient variation is 0.19 percent.

**Table No. 28**

**Investment on Government Securities to Total Assets Ratio of NSBIBL**

(Rs. in million)

<b>Year</b>	<b>Investment on government securities</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1189	8001	14.86
2061	1872	8933	20.96
2062	2588	10617	24.38
2063	3680	13736	26.38
2064	2346	15397	15.24
<b>Mean</b>			<b>20.45</b>
<b>S.D.</b>			<b>4.78</b>
<b>C.V.</b>			<b>0.23</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Total Investment on Government Securities to Total Assets Ratio of NSBIBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Total Investment on Government Securities also goes on increasing trend, except in FY 2064. The average ratio of total Investment on Government Securities to total Assets 20.45, standard deviation is 4.78 and co-efficient variation is 0.23 percent.



**Table No. 29****Investment on Government Securities to Total Assets Ratio of EBL**

(Rs. in million)

	<b>Investment on government securities</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1599	8242	19.40
2061	2466	9953	24.789
2062	2100	15069	13.93
2063	3549	16715	21.23
2064	4705	23335	20.16
<b>Mean</b>			<b>19.90</b>
<b>S.D.</b>			<b>3.51</b>
<b>C.V.</b>			<b>0.18</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Total Investment on Government Securities to Total Assets Ratio of EBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Total Investment on Government Securities also goes on increasing trend, except in FY 2062 the investment on government securities decrease. The average ratio of total Investment on Government Securities to total Assets 19.90, standard deviation is 3.51 and co-efficient variation is 0.18 percent.

**Table No. 30****Investment on Government Securities to Total Assets Ratio of BOKL**

(Rs. in million)

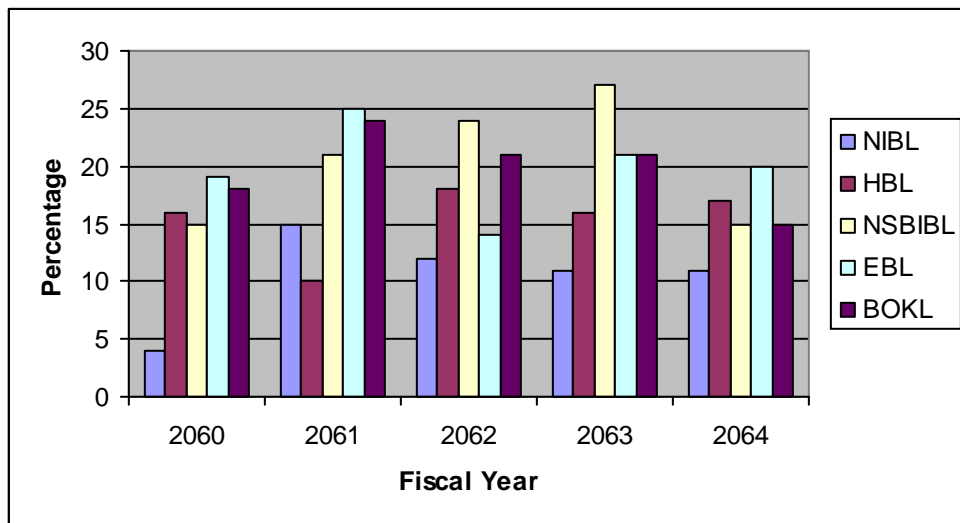
<b>Year</b>	<b>Investment on government securities</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1511	7966	18.97
2061	2372	9963	23.81
2062	2147	10256	20.93
2063	2655	12661	20.97
2064	2332	14998	15.55
<b>Mean</b>			<b>20.05</b>
<b>S.D.</b>			<b>2.73</b>
<b>C.V.</b>			<b>0.14</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Total Investment on Government Securities to Total Assets Ratio of BOKL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Total Investment on Government Securities also goes on increasing trend, except in FY 2062 and 2064 the investment on government securities decrease. The average ratio of total Investment on Government Securities to total Assets 19.90, standard deviation is 3.51 and co-efficient variation is 0.18 percent.

**Figure No. 5**

**Investment on Government Securities to Total Assets Ratio**



The above table 20 to 30 shows that the ratio of total investment on government securities to total assets. The average ratio of NSBIBL is higher ratio than other banks likewise BOKL, EBL, HBL and NIBL it means NSBIL has mobilized this assets as investment in government securities more than other banks C.V. of NIBL is higher than other banks likewise BOKL, EBL, HBL ,NIBL, and NSBIL it shows than NIBL ratio is more variable than other banks. BOKL ratio is less variable than other banks.

Therefore it can say that, NSBIBL has been able to mobilize its more assets by investing on government securities whereas NIBL has mobilized fewer assets on investing on government securities.

#### 4.1.3.5 Investment on Share and Debentures to Total Assets Ratio

To study the investment management of NIBL, NSBIBL, HBL and BOKL total investment has been separated into two parts i.e. investment on government securities and investment on shares and debentures. Nowadays, a commercial bank is interested to invest its fund not only on government securities but also in shares and debenture of other different types of companies. During the study period, most of the commercial banks of Nepal have found to purchase the share of other companies too.

Investment on shares and debentures to total assets ratio reflects the extent to which the banks are successful to mobilize their assets on purchase of shares and debentures of other companies to generate incomes and utilize their excess fund. A high ratio indicates more portion of Investment on shares and debentures out to total assets and vice-versa. This ratio is calculated by dividing investment on share and debenture by total assets.

The following table shows the ratios of Investment on shares and debentures to total assets ratio of NIBL, HBL, NSBIBL, EBL and BOKL.

**Table No. 31**

#### **Investment on Share and Debentures to Total Assets Ratio of NIBL**

(Rs. in million)

<b>Year</b>	<b>Investment on Share and Debentures</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	1345	9102	14.78
2061	2117	13566	16.00
2062	204	16638	1.23
2063	108	22007	0.49
2064	55	28573	0.19
<b>Mean</b>			<b>6.54</b>
<b>S.D.</b>			<b>7.25</b>
<b>C.V.</b>			<b>1.11</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Investment on Share and Debentures to Total Assets Ratio of NIBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Total Investment on Share and Debentures goes on decreasing trend, except in FY 2061 the investment on Share and Debentures increase. The average ratio of Investment on Share and Debentures to Total Assets 6.54, standard deviation is 7.25 and co-efficient variation is 1.11 percent.

**Table No. 32**

**Investment on Share and Debentures to Total Assets Ratio of HBL** (Rs. in million)

<b>Year</b>	<b>Investment on Share and Debentures</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	34	24721	0.14
2061	96	26751	0.36
2062	40	29103	0.14
2063	40	31065	0.13
2064	72	34646	0.21
<b>Mean</b>			<b>0.19</b>
<b>S.D.</b>			<b>0.08</b>
<b>C.V.</b>			<b>0.42</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Investment on Share and Debentures to Total Assets Ratio of HBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Investment on Share and Debentures goes on increasing trend, except in FY 2062 the average ratio of Investment on Share and Debentures to Total Assets 0.19, standard deviation is 0.08 and co-efficient variation is 0.42 percent.

**Table No. 33****Investment on Share and Debentures to Total Assets Ratio of NSBIBL**

(Rs. in million)

<b>Year</b>	<b>Investment on Share and Debentures</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	18	8001	0.22
2061	18	8933	0.20
2062	20	10617	0.19
2063	20	13736	0.14
2064	20	15397	0.21
<b>Mean</b>			<b>0.19</b>
<b>S.D.</b>			<b>0.03</b>
<b>C.V.</b>			<b>0.15</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Investment on Share and Debentures to Total Assets Ratio of NSBIBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Investment on Share and Debentures goes on increasing. The average ratio of Investment on Share and Debentures to Total Assets 0.19, standard deviation is 0.03 and co-efficient variation is 0.15 percent.

**Table No.34****Investment on Share and Debentures to Total Assets Ratio of EBL**

(Rs. in million)

<b>Year</b>	<b>Investment on Share and Debentures</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	17	8242	0.21
2061	17	9953	0.17
2062	20	15069	0.13
2063	20	16715	0.12
2064	20	23335	0.08
<b>Mean</b>			<b>0.14</b>
<b>S.D.</b>			<b>0.04</b>
<b>C.V.</b>			<b>0.28</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Investment on Share and Debentures to Total Assets Ratio of EBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Investment on Share and Debentures goes on increasing. The average ratio of Investment on Share and Debentures to Total Assets 0.14, standard deviation is 0.04 and co-efficient variation is 0.28 percent.

**Table No. 35**

**Investment on Share and Debentures to Total Assets Ratio of BOKL**

(Rs. in million)

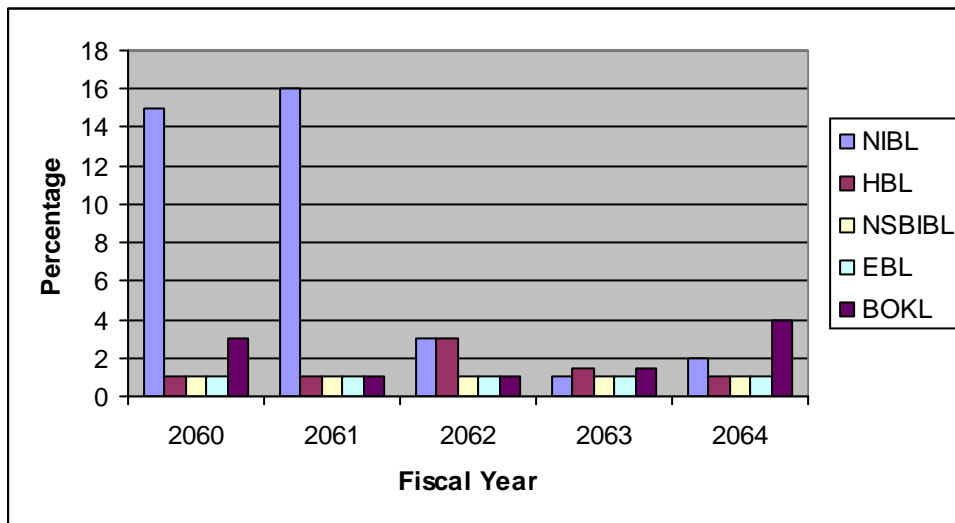
<b>Year</b>	<b>Investment on Share and Debentures</b>	<b>Total Assets</b>	<b>Ratio (%)</b>
2060	108	7966	1.3
2061	23	9963	0.23
2062	19	10256	0.18
2063	94	12661	0.74
2064	663	14998	4.42
<b>Mean</b>			<b>1.37</b>
<b>S.D.</b>			<b>1.58</b>
<b>C.V.</b>			<b>1.15</b>

(Source: Banking and Financial Statistics, NRB)

The above table shows Investment on Share and Debentures to Total Assets Ratio of EBL, From the FY 2060 to 2064. Total Assets are goes on increasing trend, and Investment on Share and Debentures goes on decreasing trend, except 2063 and 2064 Investment on Share and Debentures goes on increasing. The average ratio of Investment on Share and Debentures to Total Assets 1.37, standard deviation is 1.58 and co-efficient variation is 1.15 percent.

**Figure No. 6**

**Investment on Share and Debentures to Total Assets Ratio**



The above tables 31 to 35 and figure No. 6 shows that the ratio of Total Investment on share debenture to total assets. The average ratio of NIBL is higher than other banks likewise HBL, EBL, NSBIBL and BOKL. On the basis of mean ratios, it can be stated that NIBL has invested higher amount in shares and debentures in comparison other banks. But it shows that all banks invest fewer funds in share and debentures of other companies. Similarly C.V. of BOKL is also higher than that of other banks likewise NIBL, HBL, EBL and NSBIBL. It means that ratio of BOKL is more variable than other banks. BOKL is increasing its investment on share and debenture.

From the above it can be concluded that all the banks doesn't invest much on share and debenture of other company. It may be because of higher risk involved with it. But commercial bank should invest in other company's shares also to develop the industry and to develop the country.

#### **4.1.4 Growth Ratios**

Growth ratios represent how well the Commercial banks are maintaining their economic and financial position. Here those growth ratios are analyzed and interpreted which are directly related to the fund mobilization and investment management of a commercial bank. The high ratio generally indicated better performance of a bank and vice-versa.

#### 4.1.4.1 Growth Ratio of Total Investment

This ratio shows whether the sample bank had increased the total investment or decreased the investment. The following table shows the growth ratio of HBL and Nepal SBI banks.

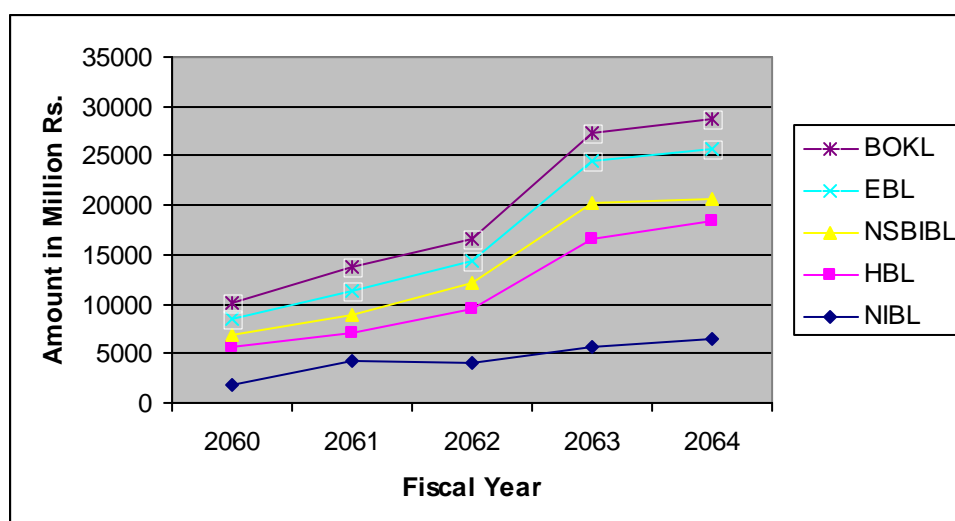
**Table No. 36**  
**Growth Ratio of Investment**

(Rs. in million)

Year	NIBL	HBL	NSBIBL	EBL	BOKL
2060	1745	4014	1207	1606	1619
2061	4172	2878	1890	2483	2395
2062	4072	5510	2608	2120	2236
2063	5673	10891	3700	4201	2748
2064	6518	11822	2378	4985	2995
<b>Growth Ratio %</b>	<b>39.66</b>	<b>31.05</b>	<b>18.47</b>	<b>32.73</b>	<b>16.62</b>

(Source: Banking and Financial Statistics, NRB)

**Figure No. 7**  
**Growth Ratio of Investment**



The above table and graph shows that the growth ratio of investment of sample bank. All banks are increasing their investment in different sectors. NIBL has higher growth



rate of investment than other banks. Likewise EBL, HBL, NSBIBL and BOKL. HBL has higher investment than other banks likewise NIBL, EBL, BOKL and NSBIBL. The calculation method of growth ratios is shown in appendix no.1.

#### 4.1.4.2 Growth Ratios of Deposits

The bank collects its deposits from public. The growth ratio of deposits represent whether the banks had been able to increase its deposit collection or not. The following table represents the growth ratios of deposits of NIBL, HBL, NSBIBL, EBL and BOKL.

**Table No.37**  
**Growth Ratio of Deposit**

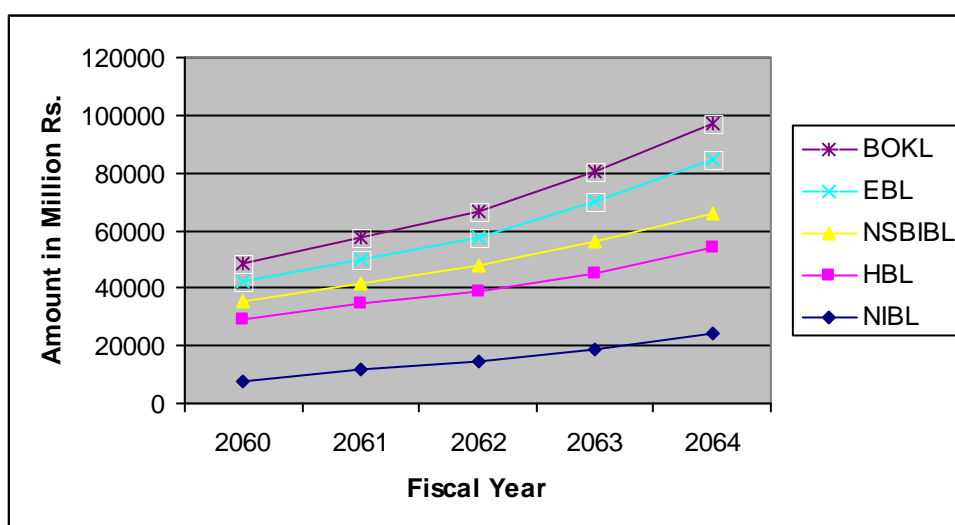
(Rs. in million)

Year	NIBL	HBL	NSBIBL	EBL	BOKL
2060	7923	21003	6523	6695	6170
2061	11706	22716	7232	8064	7742
2062	14255	24831	8646	10098	8943
2063	18929	26456	10853	13802	10429
2064	24489	29906	11445	19098	12359
<b>Growth Ratio %</b>	<b>32.59</b>	<b>9.24</b>	<b>15.09</b>	<b>29.96</b>	<b>18.97</b>

(Source: Banking and Financial Statistics, NRB)

**Figure No. 8**

**Growth Ratio of Deposit**



The above table and graph shows that the deposit collection of banks. All the banks are increasing their deposits. NIBL has higher growth rate of investment than other banks. Likewise EBL, HBL, NSBIBL and BOKL. HBL has collected higher deposit than other banks likewise NIBL, EBL, BOKL and NSBIBL. The calculation method of growth ratios is shown in appendix no.2.

#### 4.1.4.3 Growth Ratio of Loan and Advances

Loan and advances growth ratio shows whether the banks are increasing its loan and advances or decreasing. The following table shows the position of loan and advances of HBL and Nepal SBI bank.

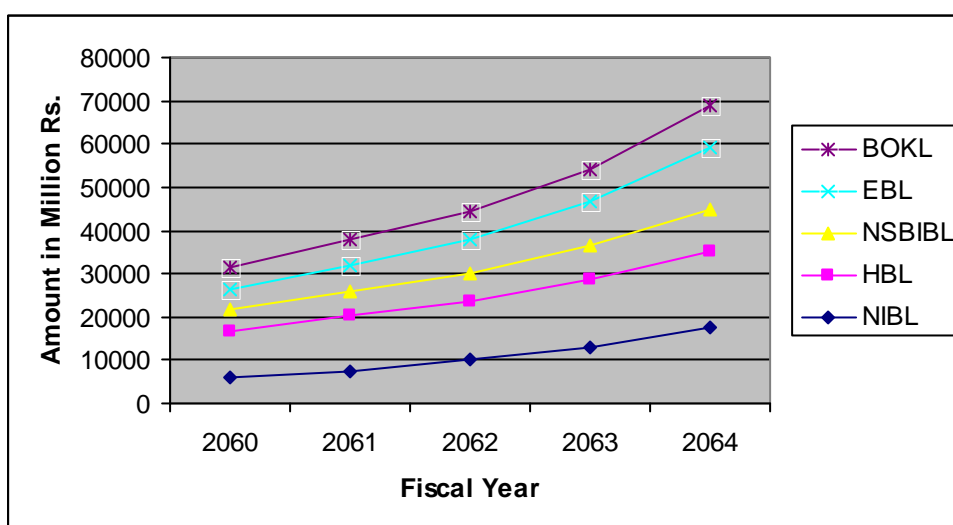
**Table No. 38**  
**Growth Ratio of loan and Advance** (Rs. in million)

Year	NIBL	HBL	NSBIBL	EBL	BOKL
2060	5873	10894	4761	5031	4913
2061	7174	13082	5491	6117	6050
2062	10295	13245	6619	7914	6167
2063	13007	15516	8060	10124	7225
2064	17482	17672	9848	14059	9664
<b>Growth Ratio %</b>	<b>31.35</b>	<b>12.86</b>	<b>19.93</b>	<b>29.29</b>	<b>18.43</b>

(Source: Banking and Financial Statistics, NRB)

**Figure No. 9**

**Growth Ratio of Loan and Advance**



The above table and graph shows growth ratio of loan and advances. All the banks are increasing its loan and advances. NIBL has higher growth ratio than other banks. Likewise EBL, HBL, NSBIBL and BOKL. HBL has higher loan and advance than other banks likewise NIBL, EBL, BOKL and NSBIBL. The calculation method of growth ratios is shown in appendix no.3.

#### **4.1.5 Statistical Analysis**

Here, statistical tools such as co-efficient of correlation analysis between different variables, trend analysis of investment, loan and advances are used to achieve the objectives of the study.

##### **4.1.5.1 Testing of Hypothesis**

Hypothesis means the presumption as quantitative statement of the population parameter which may be true or false. In order to make proper decision about the quantitative statement of the population, testing hypothesis technique is used. The testing of hypothesis is carried out by using sample information. Hence in statistics, hypothesis is a statistical statement about the values of one or more parameters of the population. After setting the hypothesis, it is necessary to test the reliability of such statistical statements.

For this purpose, an experiment is conducted by using sample information and the hypothesis is rejected if the results obtained are improbable under this hypothesis. If the results are not improbable, the hypothesis is accepted. The procedure of drawing such conclusion based on sample information is known as testing of hypothesis.

In this topic, an effort has been made to test the significance regarding the parameter of the population on the basis of sample drawn form the population. The various steps in test of hypothesis can be used which are as follows:

Step1: Setting of hypothesis

- a. Null Hypothesis
- b. Alternative hypothesis

Step 2: Selecting suitable and proper test statistic

Step 3: Selecting the level of significance

Step 4: Finding the critical region

Step 5: Making decision

Test of Hypothesis on Investment plus Loan & Advance on Total Deposit Ratio of NIBL, HBL, NSBIBL, EBL and BOKL.

a. Test of significance difference between HBL and NIBL

NIBL	HBL
$\bar{x}_1 = 98.14$	$\bar{x}_2 = 83.1$
$s_1^2 = 12.82$	$s_2^2 = 706.73$

Null hypothesis ( $H_0$ ):  $\mu = \mu$  i.e there is no significant different between two mean ratios of loan and advances to total deposit of HBL and NIBL.

Alternative hypothesis ( $H_1$ ):  $\mu_1 \neq \mu_2$  (two tailed test) i.e. there is significant difference between two mean ratio of loan and advances to total deposit of HBL and NIBL.

we have

$$s^2_p = \frac{1}{n_1+n_2-2} (s_1^2 + s_2^2)$$

$S^2_p$  = an unbiased estimate of the common population variance

$$T = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s^2_p \left( \frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$\bar{x}_1$  = mean ratio of HBL

$\bar{x}_2$  = mean ratio of NABL

$S^2_p$  – an unbiased estimate of the common population variance  $\sigma^2$ . using actual mean method.

$$|t| = 2.522$$

$$\text{Degree of freedom (d.f)} = n_1 + n_2 - 2 = 5 + 5 - 2 = 8$$

Level of significance = 5%

Critical value: The tabulated value of t at  $\hat{y}$  5% for two tailed test of for 8 d.f is 2.306.

Decision: Since calculated value of t is more than tabulated value the null hypothesis.  $H_0$  is rejected and hence alternative hypothesis  $h_1$  is accepted. That is there is significant difference between mean ratios i.e. investment and deposit of HL and NIBL.

b. Test of significance difference between NSBIBL and EBL

NSIBL	EBL
$\bar{x}_1 = 104.08$	$\bar{x}_2 = 101.73$
$x_3^2 = 190.45$	$x_4^2 = 42.51$

Null hypothesis ( $H_0$ ):  $\mu = \mu$  i.e. there is no significant different between two mean ratios of loan and advances to total deposit of HBL and NIBL.

Alternative hypothesis ( $H_1$ ):  $\mu_1 \neq \mu_1$  (two tailed test) i.e. there is significant difference between two mean ratio of loan and advances to total deposit of HBL and NIBL.

we have

$$s^2p = \frac{1}{n_3+n_4-2} (x_3^2 + x_4^2)$$

$$= 29.1212$$

$S^2p$  = an unbiased estimate of the common population variance

$$T = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s^2p \left( \frac{1}{n_3} + \frac{1}{n_4} \right)}}$$

$$/t/ = 0.39$$

$$\text{Degree of freedom (d.f)} = n^1+n^2-2 = 5+5-2=8$$

Level of significance = 5%

Critical value: The tabulated value of t at  $\hat{y}$  5% for two tailed test of for 8 d.f is 2.306.

Decision: Since calculated value of t is more than tabulated value the null hypothesis.  $H_0$  is accepted. Therefore we conclude that there is no significant difference between mean ratios i.e. investment and deposit of HL and NIBL

c. Test of significance difference between EBL and BOKL

EBL	BOKL
$\bar{x}_1 = 107.73$	$\bar{x}_2 = 101.96$
$x_3^2 = 42.51$	$x_4^2 = 141.88$

Null hypothesis ( $H_0$ ):  $\mu = \mu$  i.e. there is no significant different between two mean ratios of loan and advances to total deposit of HBL and NIBL.

Alternative hypothesis ( $H_1$ ):  $\mu_1 \neq \mu_1$  (two tailed test) i.e. there is significant difference between two mean ratio of loan and advances to total deposit of HBL and NIBL.

We have

$$s^2_p = \frac{1}{n_3+n_4-2} (x_3^2 + x_4^2)$$

$$= 23.506$$

$S^2_p$  = an unbiased estimate of the common population variance

$$|t| = 22.1165$$

Degree of freedom (d.f) =  $n^1+n^2-2 = 5+5-2=8$

Level of significance = 5%

Critical value: The tabulated value of t at  $\hat{y}$  5% for two tailed test of for d.f is 2.306.

Decision: Since calculated value of t is more than tabulated value the null hypothesis. Ho is accepted. Therefore we conclude that there is no significant difference between mean ratios i.e. investment and deposit of HL and NIBL

#### **4.1.5.2 Multiple regression analysis:**

Multiple regression is defined as the statistical device which is used to estimate (or predict) the value of one dependent variable when the values of two or more independent variable are known or given. In multiple regression analysis, two or more independent variables are used to predict the value of a dependent variable. It is a statistical technique for investigating the relationship between one dependent variable and a set of two or more independent variables. Thus this multiple regression analysis is used to predict (or control) relationship between profit (dependent variable) with two independent variable (Investment plus loan and advance and deposit. In this analysis y, x, and  $x_1$  denote profit, investment plus and advance and deposit respectively. Clearly profit depends on investment plus loan and advance and deposit. So, the multiple regression equation y on x and  $x_1$  i.e.

$$y = a + bx + b_1x_1 \dots \dots \dots i$$

Where a, b, and  $b_1$  are regression parameters whose values are to be determined. To find the values of a, b, we have to solve the following normal equations.

#### **4.1.5.3. Co-efficient of Correlation Analysis between Investment and Deposit**

Under this topic, Karl Person's coefficient of correlation has been used to find out the relationship between investment plus loan and advances and deposit. It is already mentioned that investment is dependent upon saving i.e. deposit. Longer the duration of deposit, higher the banker's ability to acquire long term asset. In the other words banker can't invest more on long asset if duration of deposit is short. In this sense it can be said that investment is the function of deposit. Theoretically it is assumed that long-term asset yield higher return. It means longer the duration of deposit, higher would be the profitability of the bank. But investment may not be the function of deposit only. Sometimes investment is made from the funds raised from the sources. In such situation investment is not dependent upon deposit only co-efficient of correlation between these two variables. In this analysis deposits is independent variable (Y) and investment plus Loan and Advances is dependent variable (X).

The detail calculations in this regard are done in Appendix- 1 (a) and 1 (b) and the following table shows the value of  $r_{xy}$ ,  $r^2$  and P.E between those variables of HBL and Nepal SBI during the study period.

**Table No. 39**  
**Correlation between Investment and Deposits**

S.NO	Banks	r	$r^2$	P.E.	6 P.E.
1.	NIBL	0.9994	0.9988	0.0004	0.0022
2.	HBL	0.9582	0.9181	0.0247	0.1481
3.	NSBIBL	0.9954	0.9908	0.0028	0.0166
4.	EBL	0.9979	0.9958	0.0013	0.0076
5.	BOKL	0.9793	0.9590	0.0124	0.0742

From the above table, NIBL has higher co-efficient of relation than other banks. Similarly EBL, NSBIBL, BOKL and HBL. It shows positive relationship between these two variables. And the value of co-efficient of determination ( $r^2$ ) is also higher of NIBL, which means 99.88% of investment decision is dependent upon deposit and only 0.12% investment is depend upon other variables. Similarly probable Error (P.E.) is 0.004 and 6P.E. is 0.0022 which shows that 'r' is highly greater than 6P.E. Therefore it reveals that relationship between deposit and investment is significant.

Likewise in the case of HBL, coefficient of correlation between investment and deposit is 0.9582 which shows that there is a positive correlation between deposit and investment and the value of co- efficient of determination ( $r^2$ ) is 0.9181. Which means 91.81% investment is depend on deposit and 8.19% investment decision depends of other variables. And its probable Error (P.E) is 0.0247 and similarly 6P.E. is 0.1481 which is less than coefficient of correlation (r). It also significant though there is positive relation between them. Calculation of co-relation between investment and deposit is shown in appendix No. 5.



#### 4.1.5.4. Trend Analysis and Projection for Next Four Years

The objective of this topic is to analysis trend of investment of NIBL, HBL, NSBIBL, EBL and BOKL. To utilize investment of a commercial bank may grant loan and advances and invest in government securities, shares, and debentures of other companies. Under this topic an attempt is made to analyze trend of Investment of NIBL, HBL, NSBIBL, EBL and BOKL and also forecast their trend for next four years. The projections are based on the following assumptions:

- a. The main assumption is that other things will remain unchanged.
- b. The bank will run in present position.
- c. The economy will remain in the present stage.
- d. Nepal Rastra Bank will not change its guidelines to commercial banks

#### 4.1.5.2.1 Trend Analysis of Total Investment

Under this topic an attempt is made to analyze the trend of investment of NIBL, HBL, NSBIBL, EBL and BOKL and forecast the trend for next 5 years. Here, investment includes investment on government securities and investment in share and debenture of other companies plus loan and advances. Since loan and advances are also the investment of the bank, it is also included with total investment. The following table shows the trend values of 10 years from 2060B.S. to 2069B.S. of NIBL, HBL, NSBIBL, EBL and BOKL.

**Table No. 40**  
**Trend values of Investment**

<b>Year</b>	<b>NIBL</b>	<b>HBL</b>	<b>NSBIBL</b>	<b>EBL</b>	<b>BOKL</b>
2060	7618	14909	5968	6647	6532
2061	11347	15960	7380	8600	8444
2062	14370	18755	9227	10034	8403
2063	18680	26406	11760	14326	10274
2064	24001	29494	12224	19044	12659
2065	27233	32990	14379	20886	13488
2066	31343	36951	16069	23938	14896
2067	35253	40913	17758	2699	16304
2068	392263	44874	19447	30042	17713

From the above table it is found that investment trend of commercial banks is in increasing trend. Other things remaining the same, the investment of HBL will be higher than the other bank. Similarly NIBL, HBL, NSBIBL, EBL and BOKL. From the above investment trend it is clear that HBL run far ahead than other banks.

In conclusion, we can say that all the commercial banks have following the policy of maximizing the investment. Calculation of trend of investment is shown in appendix No.6.

## **4.2 Major Finding of the Study**

From the analysis of financial data, the main findings are as follows:

### **Findings from ratio of Sample banks to Total Commercial banks:**

Mean ratio of HBL Investment to total commercial banks investment is 9.96% which is extremely higher than that of other banks to total commercial banks. The portion of HBL investment is increasing every year in the total Investment of Commercial banks. The ratio of NSBIBL is 3.57% which is less than other banks.

### **Findings from the Investment pattern of Sample banks:**

NSBIBL had investment most of there fund in government securities than other bank. Likewise EBL, BOKL, HBL and NIBL. HBL, EBL and NIBL had started to invest in other sector from FY 2062. All the banks had invested fewer funds to share and capital of other company. The commercial banks mostly invest on government securities, NRB bond and debentures of other company.

### **Findings from Assets Management Ratios:**

The mean ratio of Investment of total deposit of NIBL is 28.57% which is higher than other banks. Likewise HBL, BOKL, EBL and NSBIBL. The ratio of NSBIBL is 25.93 which is less than other banks. Loan and advances is also another type of Investment of Commercial banks. Loan and advances is also another type of Investment of Commercial bank. The mean ratio of investment plus loan and advances to deposit ratio of NSBIBL is 103.08% which is higher than other banks, HBL has less than other banks. It shows that the bank uses most of its fund from deposit on Investment and loan and advances. The mean ratio of total investment to total assets ratio of NIBL is 24.6% which is greater than other banks. Similarly BOKL has fewer ratios

than other banks. The mean ratio of total of investment on government securities to total assets ratio of NSBIBL is 20.45% which is higher than other banks and NIBL has 10.74% which is less ratio than other banks. The mean ratio of investment on share and debenture to total asset ratio NIBL is 6.45% which is higher than other banks. NIBL has use its more fund on share and debenture of other companies than other banks. NIBIBL has 0.19% which is less ratio of investment on share and debenture.

### **Financial from Growth Ratio:**

Growth ratio of investment of NIBL is 39.06% which is higher than other banks. Likewise EBL, HBL, NSBIBL and BOKL. All the banks increasing their investment, BOKL has 16.62 which is less growth ratio than other banks.

Growth ratio of loan and advance of NIBL has 31.35% which is higher than that of other banks and HBL has 12.86% which is lower growth ratio of loan and advance. All the banks are increasing their loan and advance.

Growth ratio of deposits of BIBL is 32.59% which is higher than that other banks and HBL has 9.24% which is lower growth ratio of deposit. All the banks are increasing their deposits.

### **Findings from Statistical Analysis**

#### **1. Test of hypothesis**

Test of hypothesis reveals that

- Test of hypothesis on investment plus loan and advance to total deposit ratios of NIBL, HBL, NSBIBL, EBL and BOKL.
- There is significant difference between two mean i.e. investment plus loan and advance to total deposit of HBL and NIBL
- There is significant difference between two mean i.e. investment plus loan and advance to total deposit of EBL and BSIBL.
- There is significant difference between two mean i.e. investment plus loan and advance to total deposit of NIBL and BOKL

#### **2. Multiple regression analysis**

- In HBL, profit is highest when investment plus loan and advance is changed, deposit is constant. On the other hand the profit is lowest when investment plus loan and advance is constant, deposit is changed.
- In NIBL, profit is highest when investment plus loan and advance is changed, deposit is constant. On the other hand the profit is lowest when investment plus loan and advance is constant, deposit is changed.

- In EBL, profit is highest when investment plus loan and advance is changed, deposit is constant. On the other hand the profit is lowest when investment plus loan and advance is constant, deposit is changed.
- In BOKL, profit is highest when investment plus loan and advance is changed, deposit is constant. On the other hand the profit is lowest when investment plus loan and advance is constant, deposit is changed.
- In NSBIBL, profit is higher when investment plus loan and advance is constant, deposit is changed. On the other hand the profit is lowest when deposit is constant, investment plus loan and advance is changed.

### **3. Correlation Coefficient analysis**

Total investment and total deposit of all five banks has positive relation. And correlation of coefficient between deposit and investment of all five banks are significant and the value of coefficient of determination ( $r^2$ ) of EBL is 0.9979 which is higher than other banks it means 99.79% of investment decision is dependent upon deposit and only 0.21% investment is depend upon other variables. Similarly probable Error (P.E.) is 0.0013 and 6P.E. is 0.0076 which shows that  $\text{®}$  is highly greater than 6P.E. Therefore it reveals that relationship between deposit and investment is significant. In the case of HBL, coefficient of correlation between investment and deposit is 0.9582 which is less than other banks it shows that there is a positive correlation between deposit and investment and the value of coefficient of determination ( $r^2$ ) is 0.9181. Which mean only 91.81% investment is depend on deposit and 8.19% investment decision depends on other variables. And its probable error (P.E.) is 0.247 and similarly 6P.E. is 0.1418 which shows that  $\text{®}$  is higher than (6P.E.). It means correlation of coefficient between deposit and investment of HBL is significant through there is positive correlation between them.

Total investment of five banks is also in increasing trend. The estimated investment of HBL will be Rs. 48836 million which is higher than that of other banks and BOKL will be Rs. 19121 in the FY 2069 B.S. which is less than that of other banks.

## **CHAPTER FIVE**

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

The last chapter of this study is summary, conclusion and recommendation developed from the analysis of various aspects of the investment of commercial banks by using some financial as well as statistical tools. After completing the basic analysis required for the study the final and the most important task of the researcher is to be summarized the study and recommendation for the future importance.

#### **5.1 Summary**

Industrial development is very important for economic development of any country. And there must be Investment made on productive activities for Industrial development. Investment is one of the financial activities which involve the decision of capital to establish commercial or industrial venture. It involves uses of funds to long term assets that would yield benefits in the future.

The beginning and establishment of financial institution depends upon the level of economics activities and monetary transaction in the country. In Nepal history of modern financial institution begins with the establishment of NBL in 1937A.D. since then several financial institutions have come into existence. But Nepalese Industries have been facing challenges especially due to inadequacy of financial resources. Although numerous financial centers to extend credit facilities to the financially viable enterprise. But there still a big gap between demand for and supply of financial resources and gap seems ever widening over the year. Globalization and freeing up of the economy, decentralization, restructuring and downswing of large firms, worldwide communication networks and transfer and acquisition of state of the art, technology and other application, all have brought the challenges and opportunities to entrepreneur. Those who can respond to these challenges and mobilize necessary financial resources become successful and those who do not, fall victim in this matter. Commercial banks not only collect the scattered saving from individual by accepting deposits but also provides various types of loan. And it itself invest in various share and debentures of other companies. A healthy development of any band depends heavily upon its Investment policy. A sound and variable investment policy can be

effective one for the economy to attain the economic objectives directed towards the acceleration of the pace of development. A good Investment policy attracts both borrowers and lenders. This helps to increase the volume and quality of deposits, loan and Investment.

Establishment of commercial banks has continued in response to economic liberalization policies of the government. So, now in Nepal there are many commercial banks competition with each other in their business. These banks are mainly concentrated themselves on financing foreign trade commerce and industry.

The main objective of the study is to evaluate the Investment Analysis of Commercial Banks in Nepal. And to suggest measures to improve the investment policy of the banks. The study is based on secondary data from fiscal year 2060 to 2064. The data which were employed in this research are secondary in nature. They are obtained from annual report and financial statement, official records, periodicals, journals and bulletins, various published reports and relevant unpublished master degree thesis. Beside this personal contact with the banks personnel have also been made.

Financial as well as statistical tools have been developed in order to analyze and interpret the data information, under financial analysis, various financial ratio, assets management ratio and growth ration have been analyzed and interpreted. Under statistical tools like percentage, mean, standard deviation, coefficient of variation, coefficient of correlation, trend analysis and interpretation of the data. This analysis gives clean picture of the performance of the bank with regard to investment operation.

## **5.2 Conclusion**

After study and analysis of given data we conclude that banking is one of sector business. All the banks are running in profit. They invest different sector. NIBL is oldest bank of given bank. It is running successfully and the growth rate of deposit, investment and loan and advance is higher than that of other banks. It means NIBL collected more deposit and invested in different sector, from the analysis of data HBL is also running successfully. It has collected more deposit and investment than that of

other banks. EBL is also running successfully, its growth rate of deposit, investment and loan and advance is increasing. NSBIBL and BOKL are also increasing their deposit, investment, loan, and advance.

From above data we can say that HBL has collected deposit and invest more fund and loan and advance than after NIBL, EBL, NSBIBL and BOKL.

### **5.3 Recommendation**

On the basis of analysis finding of study, the following recommendation and suggestion are forwarded;

- The average ratio of investment plus loan and advance to total deposit ratio of NSBIBL is higher than that of other banks, it means it has invested more than deposit so that its liquidity position is not good. So, it decreases its investment.
- NSBIBL has invested its more funds only in government securities so it is recommended that it should invest in other different sector.
- Growth ratio of deposit of HBL is too less than that of other banks so it is recommended that it should increased its deposit collection.
- Growth ratio of loan and advance of HBL is lower than that of other banks so it is recommended that it should increased its loan and advance.
- Investment plus loan & advance of HBL, NIBL, EBL and BOKL seem very high so it is recommended that it should be increased its deposit collection like NSBIBL.
- All that of banks invested fewer founds in share and debenture of other companies except NIBL, so it is recommended that they should increase their investment in share and debenture.

- NSBIBL and BOKL have invested their funds only in government securities and share and debentures of other companies so it is recommended that they should invest other sector also.
- The commercial banks have been established gradually after the commercial banks act 2031 B.S. with the passage of time so many commercial banks, as a joint venture, have been established gradually because of the liberal and marked friendly economic policy of government of Nepal .but banks should provide some social response by expanding their operation in rural areas rather than urban areas. And banks can give response to poor and disadvantage groups. By establishing the branches in rural areas, minimum amount for opening accounts and interest rate should be reduced for creditors.
- In the light of growth competition in the banking sectors, the business of the banks should be customer oriented. It should focus not only towards big clients but also towards small clients.
- Majority of commercial banks have been found to be profit oriented ignoring their social responsibility, which is not a proper strategy to sustain in long run. So all the banks are suggested to render their serves even in the rural areas providing special loans to the deprived and priority sectors, which might further intensify the goodwill of the banks in future.
- The Economic Liberalization policy adopted by Nepal government has created and environment of strict competition even in the banking sectors. In the context, all the banks are suggested to formulate and implement some sound and attractive financial and non financial strategies to meet required level of profitability as well as the social responsibility.



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## APPENDIX – I

### Sample Calculation of Growth Rate of total Investment

Growth rate is calculated from

$$D_n = D_0 (1+g)^n$$

$$D_n = \text{Total Investment of } n\text{th year}$$

$$D_0 = \text{Total Investment of Initial year}$$

$$G = \text{Growth Rate}$$

$$N = \text{Number Rate}$$

$$N = \text{Number of year}$$

#### **NIBL**

Here,

$$D_{64} = 6518$$

$$D_{60} = 1745$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 6518 = 1745 (1+g)^{5-1}$$

$$\text{Or, } 3.74 = (1+g)^4$$

$$\text{Or, } (3.74)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.3906$$

$$\text{Or, } g = 1.3906-1$$

$$\text{Or, } g = 0.3906$$

$$\therefore g = 39.06\%$$

#### **HBL**

Here,

$$D_{64} = 11822$$

$$D_{60} = 4014$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 11822 = 4014 (1+g)^{5-1}$$

$$\text{Or, } 2.95 = (1+g)^4$$

$$\text{Or, } (2.95)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.3105$$

$$\text{Or, } g = 1.3105-1$$

$$\text{Or, } g = 31.05$$

$$\therefore g = 31.05\%$$

**NSBIL**

Here,

$$D_{64} = 2378$$

$$D_{60} = 1207$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 2378 = 1207 (1+g)^{5-1}$$

$$\text{Or, } 1.97 = (1+g)^4$$

$$\text{Or, } (1.97)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.1847$$

$$\text{Or, } g = 1.1847 - 1$$

$$\text{Or, } g = 0.1847$$

$$\therefore g = 18.47\%$$

**EBL**

Here,

$$D_{64} = 4985$$

$$D_{60} = 1606$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 4985 = 1606 (1+g)^{5-1}$$

$$\text{Or, } 3.1040 = (1+g)^4$$

$$\text{Or, } (3.1040)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.3273$$

$$\text{Or, } g = 1.3273 - 1$$

$$\text{Or, } g = 0.3273$$

$$\therefore g = 32.73\%$$

**BOKL**

Here,

$$D_{64} = 2995$$

$$D_{60} = 1619$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 2995 = 1619 (1+g)^{5-1}$$

$$\text{Or, } 1.8499 = (1+g)^4$$

$$\text{Or, } (1.8499)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.1662$$

$$\text{Or, } g = 1.1662 - 1$$

$$\text{Or, } g = 0.1662$$

$$\therefore g = 16.62\%$$

**APPENDIX – 2**  
**Sample Calculation of Growth Rate of Deposit**

**NIBL**

Here,

$$D_{64} = 24489$$

$$D_{60} = 7923$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 24489 = 7923 (1+g)^{5-1}$$

$$\text{Or, } 3.0909 = (1+g)^4$$

$$\text{Or, } (3.0909)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.33259$$

$$\text{Or, } g = 1.33259 - 1$$

$$\text{Or, } g = 0.33259$$

$$\therefore g = 33.259\%$$

**HBL**

Here,

$$D_{64} = 29906$$

$$D_{60} = 21003$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 29906 = 21003(1+g)^{5-1}$$

$$\text{Or, } 1.4239 = (1+g)^4$$

$$\text{Or, } (1.4239)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.0924$$

$$\text{Or, } g = 1.0924 - 1$$

$$\text{Or, } g = 0.0924$$

$$\therefore g = 9.24\%$$

**NSBIL**

Here,

$$D_{64} = 11445$$

$$D_{60} = 6523$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 11445 = 6523(1+g)^{5-1}$$

$$\text{Or, } 1.7546 = (1+g)^4$$

$$\text{Or, } (1.7546)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.1509$$

$$\text{Or, } g = 1.1509 - 1$$

$$\text{Or, } g = 0.1509$$

$$\therefore g = 15.09\%$$

**EBL**

Here,

$$D_{64} = 19098$$

$$D_{60} = 6695$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 19098 = 6695 (1+g)^{5-1}$$

$$\text{Or, } 2.8526 = (1+g)^4$$

$$\text{Or, } (2.8526)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.2996$$

$$\text{Or, } g = 1.2996 - 1$$

$$\text{Or, } g = 0.2996$$

$$\therefore g = 29.96\%$$

**BOKL**

Here,

$$D_{64} = 12359$$

$$D_{60} = 6170$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 12359 = 6170(1+g)^{5-1}$$

$$\text{Or, } 2.0031 = (1+g)^4$$

$$\text{Or, } (2.0031)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.1897$$

$$\text{Or, } g = 1.1897 - 1$$

$$\text{Or, } g = 0.1897$$

$$\therefore g = 18.97\%$$



### APPENDIX – 3

#### Sample Calculation of Growth Rate of Loan and Advances

##### **NIBL**

Here,

$$D_{64} = 17482$$

$$D_{60} = 5873$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 17482 = 5873 (1+g)^{5-1}$$

$$\text{Or, } 2.9767 = (1+g)^4$$

$$\text{Or, } (2.9767)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.3135$$

$$\text{Or, } g = 1.3135-1$$

$$\text{Or, } g = 0.3135$$

$$\therefore g = 31.35\%$$

##### **HBL**

Here,

$$D_{64} = 17672$$

$$D_{60} = 10894$$

$$N = 5\text{yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 17672 = 10894 (1+g)^{5-1}$$

$$\text{Or, } 1.6222 = (1+g)^4$$

$$\text{Or, } (1.6222)^{1/4} = 1 + g$$

$$\text{Or, } 1 + g = 1.1286$$

$$\text{Or, } g = 1.1286-1$$

$$\text{Or, } g = 0.1286$$

$$\therefore g = 12.86\%$$

**NSBIL**

Here,

$$D_{64} = 9848$$

$$D_{60} = 4761$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 9848 = 4761 (1+g)^{5-1}$$

$$\text{Or, } 2.0685 = (1+g)^4$$

$$\text{Or, } (2.0685)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.1993$$

$$\text{Or, } g = 1.1993 - 1$$

$$\text{Or, } g = 0.1993$$

$$\therefore g = 19.93\%$$

**EBL**

Here,

$$D_{64} = 14059$$

$$D_{60} = 5031$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 14059 = 5031 (1+g)^{5-1}$$

$$\text{Or, } 2.7945 = (1+g)^4$$

$$\text{Or, } (2.7945)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.2929$$

$$\text{Or, } g = 1.2929 - 1$$

$$\text{Or, } g = 0.2929$$

$$\therefore g = 29.29\%$$

**BOKL**

Here,

$$D_{64} = 9664$$

$$D_{60} = 4913$$

$$N = 5 \text{ yr}$$

$$D_{64} = D_{60} (1+g)^{n-1}$$

$$\text{Or, } 9664 = 4913 (1+g)^{5-1}$$

$$\text{Or, } 1.9670 = (1+g)^4$$

$$\text{Or, } (1.9670)^{\frac{1}{4}} = 1 + g$$

$$\text{Or, } 1 + g = 1.1843$$

$$\text{Or, } g = 1.1843 - 1$$

$$\text{Or, } g = 0.1843$$

$$\therefore g = 18.437\%$$

**APPENDIX – 4**

**Calculation the required values of HBL**

<b>HBL</b>								<b>Rs in 10 billion</b>
<b>Year</b>	<b>Profit (Y)</b>	<b>Investment+Loan &amp; Advance (X)</b>	<b>Deposit (X<sub>1</sub>)</b>	<b>XY</b>	<b>X<sup>2</sup></b>	<b>XX<sub>1</sub></b>	<b>X<sub>1</sub>Y</b>	<b>X<sub>1</sub><sup>2</sup></b>
2060	2	149	210	298	22201	31290	420	44100
2061	2	159	227	318	25281	36093	454	51529
2062	3	187	248	561	34969	46376	744	61504
2063	4	264	264	1056	69696	69696	1056	69696
2064	4	294	299	1176	86436	87906	1196	89401
	<b>15</b>	<b>1053</b>	<b>1248</b>	<b>3409</b>	<b>238583</b>	<b>271361</b>	<b>3870</b>	<b>316230</b>

Substituting the sum values in the above equations.

$$15 = 5a + 1053b + 1248b_1 \dots\dots\dots v$$

$$3409 = 1053a + 238583b + 271361b_1 \dots\dots\dots vi$$

$$3870 = 1248a + 271361b + 31623b_1 \dots\dots\dots vii$$

Multiplying equation v by 1053 and equation vi by 5 and subtracting equation vi from v.

$$15795 = 5265a + 1108809b + 1314144b_1 \dots\dots\dots \times 1053$$

$$17045 = 5265a + 1192915b + 1356805b_1 \dots\dots\dots \times 5$$

$$\underline{\hspace{1cm} - \hspace{1cm} - \hspace{1cm} - \hspace{1cm} - \hspace{1cm}}$$

$$-1250 = -84106b - 42661b_1$$

$$-(1250 = 84106b + 42661b_1) \dots\dots\dots viii$$

Multiplying equation v by 1248 and equation vii by 5 and subtracting equation vii from v.

$$18720 = 6240a + 1314144b + 1557504b_1 \dots\dots\dots \times 1248$$

$$19350 = 6240a + 1356805b + 1581150b_1 \dots\dots\dots \times 5$$

$$\underline{\hspace{1cm} - \hspace{1cm} - \hspace{1cm} - \hspace{1cm} - \hspace{1cm}}$$

$$-630 = -42661b - 23643b_1$$

$$-(630 = -42661b - 23643b_1) \dots\dots\dots ix$$

Again Multiplying equation viii by 23646 and equation ix by 42661 and subtracting equation ix from viii.

$$29557500 = 1988770476b + 1008762006b_1 \dots\dots\dots \times 23646$$

$$26876430 = 1819960921b + 1008762006b_1 \dots \times 42661$$

$$\begin{array}{r} - & - & - & - \\ \hline 2681070 = 168809555b \end{array}$$

$$b = \frac{2681070}{168809555} = 0.016$$

Substituting the value of b in equation viii we get

$$1250 = 84106b + 42661b_1$$

$$1250 = 84106 \times 0.016 + 42661b_1$$

$$b_1 = \frac{-95.696}{42661} = -0.002$$

Again the substituting the value of b and b<sub>1</sub> in equation v

$$15 = 5a + 1053b + 1248b_1$$

$$15 = 5a + 1053 \times 0.016 + 1248 \times -0.002$$

$$15 = 5a + 14.35$$

$$5a = 0.65$$

$$a = \frac{0.65}{5} = 0.13$$

Substituting the value of a, b and b<sub>1</sub>

$$Y = 0.13 + 0.016x - 0.002x_1$$

To find out the profit in future, let's assume x and x<sub>1</sub> as 300 Then,

$$Y = a + bx + b_1 x_1$$

$$= 0.13 + 0.016 \times 300 + -0.002 \times 300$$

$$= 4.33$$

The profit is  $4.33 \times 100000000 = 433000000$

Keeping the value of x as constant and changing the value of x<sub>1</sub> as 350.

$$Y = a + bx + b_1 x_1$$

$$= 0.13 + 0.016 \times 300 + -0.002 \times 350$$

$$= 4.23$$

The profit is  $4.23 \times 100000000 = 423000000$

Again Keeping the value of x<sub>1</sub> is as constant and changing the value of x as

350.

$$Y = a + bx + b_1 x_1$$

$$= 0.13 + 0.016 \times 350 + -0.002 \times 300$$

$$= 4.43$$

The profit is  $4.43 \times 100000000 = 443000000$

**Interpretation :**

When we assume the investment plus loan & advance and deposit is 300 each, the profit is Rs423000000. In next step investment plus loan & advance is constant and deposit is changed by 50, the profit is 423000000. Similarly investment plus loan & advance is changed and deposit is constant, that time profit is 443000000 which is more profit than other.

**Calculation the required values of NIBL**

NIBL								Rs in 10 billion
Year	Profit (Y)	Investment+Loan & Advance (X)	Deposit (X <sub>1</sub> )	XY	X <sup>2</sup>	XX <sub>1</sub>	X <sub>1</sub> Y	X <sub>1</sub> <sup>2</sup>
2060	2	76	79	152	5776	6004	158	6241
2061	2	113	117	226	12769	13221	234	13689
2062	3	143	114	429	20449	16302	342	12996
2063	4	186	189	744	34596	35154	12756	35721
2064	5	240	244	1200	57600	58560	1220	59536
	<b>15</b>	<b>758</b>	<b>743</b>	<b>2751</b>	<b>131190</b>	<b>129241</b>	<b>2710</b>	<b>128183</b>

Substituting the sum values in the above equations.

$$15 = 5a + 758b + 743b_1 \dots\dots\dots v$$

$$2751 = 758a + 131190b + 129241b_1 \dots\dots\dots vi$$

$$2710 = 743a + 129241b + 128183b_1 \dots\dots\dots vii$$

Multiplying equation v by 578 and equation vi by 5 and subtracting equation vi from v.

$$11370 = 3790a + 874564b + 563194b_1 \dots\dots\dots \times 758$$

$$13755 = 3790a + 1655950b + 646205b_1 \dots\dots\dots \times 5$$

$$\underline{\hspace{1cm} - \hspace{1cm} - \hspace{1cm} - \hspace{1cm} - \hspace{1cm}}$$

$$-2385 = -81386b - 83011b_1$$

$$-(2385 = -81386b - 83011b_1) \dots\dots\dots viii$$

Multiplying equation v by 743 and equation vii by 5 and subtracting equation vii from v.

$$11145 = 3745a + 563194b + 552049b_1 \dots\dots\dots \times 743$$

$$\begin{array}{r}
13550 = 3715a + 646205b + 640915b_1 \dots\dots\dots \times 5 \\
\hline
-2405 = -83011b - 88866b_1 \\
-(2405 = -83011b - 88866b_1) \dots\dots\dots \times 83011 \dots\dots\dots \text{ix}
\end{array}$$

Again multiplying equation viii by 88866 and equation ix by 83011 and subtracting equation ix from viii.

$$\begin{array}{r}
211945410 = 7232448276b + 737655552b_1 \dots\dots\dots \times 88866 \\
199641455 = 6890826121b + 737655552b_1 \dots\dots\dots \times 83011 \\
\hline
12303955 = 341622155b \\
b = \frac{12303955}{341622155} = 0.036
\end{array}$$

Substituting the value of b in equation viii we get

$$\begin{array}{l}
2385 = 81386b + 83011b_1 \\
2385 = 81386 \times 0.036 + 42661b_1 \\
b_1 = -0.006
\end{array}$$

Again the substituting the value of b and b<sub>1</sub> in equation v

$$\begin{array}{l}
15 = 5a + 758b + 743b_1 \\
15 = 5a + 758 \times 0.036 + 743 \times -0.006 \\
15 = 5a + 758 \times 0.0036 - 4.458 \\
A = -1.566
\end{array}$$

Substituting the value of a, b and b<sub>1</sub>

$$\begin{array}{l}
Y = -1.566 + 0.036b - 0.006b_1 \quad 0 \\
\text{To find out the profit in future, let's assume } x \text{ and } x_1 \text{ as } 300 \text{ Then,} \\
Y = a + bx + b_1 x_1 \\
= -1.566 + 0.036 \times 300 + -0.006 \times 300 \\
= 7.434
\end{array}$$

$$\text{The profit is } 7.434 \times 100000000 = 743400000$$

Keeping the value of x as constant and changing the value of x<sub>1</sub> as 350.

$$\begin{array}{l}
Y = a + bx + b_1 x_1 \\
= -1.566 + 0.036 \times 300 + -0.006 \times 350 \\
= 7.134
\end{array}$$

$$\text{The profit is } 7.134 \times 100000000 = 71.3400000$$

Again Keeping the value of  $x_1$  is as constant and changing the value of  $x$  as 350.

$$\begin{aligned}
 Y &= a + bx + b_1x_1 \\
 &= -1.566 + 0.036 \times 350 + -0.006 \times 300 \\
 &= 9.234
 \end{aligned}$$

The profit is  $9.234 \times 100000000 = 923400000$

**Interpretation :**

When we assume the investment plus loan & advance and deposit is 300 each, the profit is Rs 743400000. In next step investment plus loan & advance is constant and deposit is changed by 50, the profit is 713400000. Similarly investment plus loan & advance is changed and deposit is constant, that time profit is 923400000 which is more profit than other.

**Calculation the required values of EBL**

NIBL								Rs in 10 billion
Year	Profit (Y)	Investment+Loan & Advance (X)	Deposit (X <sub>1</sub> )	XY	X <sup>2</sup>	XX <sub>1</sub>	X <sub>1</sub> Y	X <sub>1</sub> <sup>2</sup>
2060	1	66	66	66	4356	4356	66	4356
2061	1	56	80	86	7396	6880	80	6400
2062	1	100	100	100	10000	10000	100	10000
2063	2	43	138	286	20449	19734	276	19044
2064	2	190	190	380	36100	36100	380	36100
	<b>7</b>	<b>585</b>	<b>574</b>	<b>918</b>	<b>78301</b>	<b>77070</b>	<b>902</b>	<b>75900</b>

Substituting the sum values in the above equations.

$15 = 5a + 585b + 5743b_1$  .....v

$2751 = 585a + 78301b + 77070b_1$  ..... vi

$2710 = 574a + 77070b + 75900b_1$  .....vii

Multiplying equation v by 585 and equation vi by 5 and subtracting equation vi from v.

$$\begin{array}{r}
 4095 = 2925a + 342225b + 335790b_1 \dots\dots\dots \times 585 \\
 13755 = 2925a + 391505b + 385350b_1 \dots\dots\dots \times 5 \\
 \hline
 -495 = -49280b - 49560b_1 \\
 -(495 = -49280b - 49560b_1) \dots\dots\dots \text{viii}
 \end{array}$$

Multiplying equation v by 574 and equation vii by 5 and subtracting equation vii from v.

$$\begin{array}{r}
 4018 = 2870a + 335790b + 329476b_1 \dots\dots\dots \times 585 \\
 4510 = 2870a + 385350b + 379500b_1 \dots\dots\dots \times 5 \\
 \hline
 -492 = -49560b - 50024b_1 \\
 -(492 = -49560b - 50024b_1) \dots\dots\dots \text{ix}
 \end{array}$$

Again multiplying equation viii by 50024 and equation ix by 49560 and subtracting equation ix from viii.

$$\begin{array}{r}
 24761880 = 2465182720b + 2479189440b_1 \dots\dots\dots \times 50024 \\
 24383520 = 2456193600b + 2479189440b_1 \dots\dots\dots \times 49560 \\
 \hline
 378360 = 9289120b \\
 b = 0.04
 \end{array}$$

Substituting the value of b in equation viii we get

$$\begin{array}{l}
 495 = 49280 \times 0.04 + 49560b_1 \\
 -1476.2 = 49560b_1 \\
 b_1 = -0.029
 \end{array}$$

Again the substituting the value of b and b<sub>1</sub> in equation v

$$\begin{array}{l}
 7 = 5a + 585b + 574b_1 \\
 7 = 5a + 585 \times 0.04 + 574 \times -0.029 \\
 a = 0.04
 \end{array}$$

Substituting the value of a, b and b<sub>1</sub>

$$Y = 0.04 + 0.04x - 0.029x_1$$

To find out the profit in future, let's assume x and x<sub>1</sub> as 200 Then,

$$Y = a + bx + b_1 x_1$$



$$= 0.04 + 0.04 \times 200 + (-0.029 \times 200)$$

$$= 2.24$$

The profit is  $2.24 \times 100000000 = 224000000$

Keeping the value of x as constant and changing the value of  $x_1$  as 250.

$$Y = a + bx + b_1x_1$$

$$= 0.04 + 0.04 \times 200 + (-0.029 \times 250)$$

$$= 0.79$$

The profit is  $0.79 \times 100000000 = 79000000$

Again Keeping the value of  $x_1$  is as constant and changing the value of x as 250.

$$Y = a + bx + b_1x_1$$

$$= 0.04 + 0.04 \times 250 + (-0.029 \times 200)$$

$$= 4.24$$

The profit is  $4.24 \times 100000000 = 424000000$

### Interpretation :

When we assume the investment plus loan & advance and deposit is 300 each, the profit is Rs 224000000. In next step investment plus loan & advance is constant and deposit is changed by 50, the profit is 79000000. Similarly investment plus loan & advance is changed and deposit is constant, that time profit is 424000000 which is more profit than other.

### Calculation the required values of BOKL

BOKL								Rs in 10 billion
Year	Profit (Y)	Investment+Loan & Advance (X)	Deposit ( $X_1$ )	XY	$X^2$	$XX_1$	$X_1Y$	$X_1^2$
2060	1	65	61	65	4225	3965	61	3721
2061	1	84	77	84	7056	6468	77	5929
2062	1	84	89	84	7056	7476	89	7921
2063	2	102	104	204	10404	10608	208	10816
2064	2	126	123	252	15876	15498	246	15129
	<b>7</b>	<b>461</b>	<b>454</b>	<b>689</b>	<b>44617</b>	<b>44015</b>	<b>681</b>	<b>43516</b>

Substituting the sum values in the above equations.

$$15 = 5a + 461b + 454b_1 \dots\dots\dots v$$

$$689 = 461a + 44617b + 44015b_1 \dots\dots\dots vi$$

$$681 = 454a + 44015b + 44617b_1 \dots\dots\dots vii$$

Multiplying equation v by 461 and equation vi by 5 and subtracting equation vi from v.

$$3227 = 2350a + 212521b + 209294b_1 \dots\dots\dots \times 461$$

$$3445 = 2305a + 223085b + 220075b_1 \dots\dots\dots \times 5$$

$$\underline{\quad - \quad - \quad - \quad - \quad}$$

$$-218 = -10564b - 10781b_1$$

$$-(218 = -10564b - 10781b_1) \dots\dots\dots viii$$

Multiplying equation v by 454 and equation vii by 5 and subtracting equation vii from v.

$$3178 = 2270a + 209294b + 206116b_1 \dots\dots\dots \times 454$$

$$3405 = 2270a + 220075b + 223085b_1 \dots\dots\dots \times 5$$

$$\underline{\quad - \quad - \quad - \quad - \quad}$$

$$-227 = -10781b - 16969b_1$$

$$-(227 = -10781b - 16969b_1) \dots\dots\dots ix$$

Again multiplying equation viii by 16969 and equation ix by 10781 and subtracting equation ix from viii.

$$3699242 = 179260516b + 182942789b_1 \dots\dots\dots \times 16969$$

$$2447287 = 116229961b + 182942789b_1 \dots\dots\dots \times 10781$$

$$\underline{\quad - \quad - \quad - \quad - \quad}$$

$$1251955 = 6303055b$$

$$b = 0.02$$

Substituting the value of b in equation viii we get

$$218 = 10564 \times 0.02 + 10781b_1$$

$$6.72 = 10781b_1$$

$$b_1 = -0.006$$

Again the substituting the value of b and b<sub>1</sub> in equation v

$$7 = 5a + 461b + 454b_1$$

$$7 = 5a + 461 \times 0.02 + 454 \times 0.0006$$

$$a = -0.49$$

Substituting the value of a, b and b<sub>1</sub>

$$Y = -0.49 + 0.02x + 0.006x_1$$

To find out the profit in future, let's assume x and x<sub>1</sub> as 200 Then,

$$\begin{aligned} Y &= a + bx + b_1 x_1 \\ &= -0.49 + 0.02 \times 250 + (-0.0006 \times 250) \\ &= 4.66 \end{aligned}$$

The profit is  $4.66 \times 100000000 = 466000000$

Keeping the value of x as constant and changing the value of x<sub>1</sub> as 300.

$$\begin{aligned} Y &= a + bx + b_1 x_1 \\ &= -0.049 + 0.02 \times 250 + (0.0006 \times 300) \\ &= 4.69 \end{aligned}$$

The profit is  $4.69 \times 100000000 = 469000000$

Again Keeping the value of x<sub>1</sub> is as constant and changing the value of x as 300.

$$\begin{aligned} Y &= a + bx + b_1 x_1 \\ &= -0.49 + 0.02 \times 300 + (-0.0006 \times 250) \\ &= 5.66 \end{aligned}$$

The profit is  $5.66 \times 100000000 = 566000000$

### Interpretation:

When we assume the investment plus loan & advance and deposit is 250 each, the profit is Rs 466000000. In next step investment plus loan & advance is constant and deposit is changed by 50, the profit is 469000000. Similarly investment plus loan & advance is changed and deposit is constant, that time profit is 566000000 which is more profit than other.

### Calculation the required values of NSIBL

NSIBL								Rs in 10 billion
Year	Profit (Y)	Investment+Loan & Advance (X)	Deposit (X <sub>1</sub> )	XY	X <sup>2</sup>	XX <sub>1</sub>	X <sub>1</sub> Y	X <sub>1</sub> <sup>2</sup>
2060	1	59	65	59	3481	3835	65	4225
2061	1	73	72	73	5329	5256	72	5184
2062	1	92	86	92	8464	7912	86	7396
2063	1	117	108	117	13689	12636	108	11664
2064	2	112	114	244	14884	13908	228	12996
	<b>6</b>	<b>463</b>	<b>445</b>	<b>585</b>	<b>45847</b>	<b>43547</b>	<b>559</b>	<b>41465</b>

Substituting the sum values in the above equations.

$$15 = 5a + 463b + 445b_1 \dots\dots\dots v$$

$$689 = 463a + 45847b + 43547b_1 \dots\dots\dots vi$$

$$681 = 445a + 43547b + 41465b_1 \dots\dots\dots vii$$

Multiplying equation v by 463 and equation vi by 5 and subtracting equation vi from v.

$$2778 = 2315a + 214369b + 206035b_1 \dots\dots\dots \times 463$$

$$2925 = 2315a + 229235b + 217735b_1 \dots\dots\dots \times 5$$

$$\underline{\quad - \quad - \quad - \quad - \quad}$$

$$-147 = -14866b - 11700b_1$$

$$-(147 = -14866b - 11700b_1) \dots\dots\dots viii$$

Multiplying equation v by 445 and equation vii by 5 and subtracting equation vii from v.

$$2670 = 2225a + 206035b + 198025b_1 \dots\dots\dots \times 445$$

$$2795 = 2225a + 217735b + 2073225b_1 \dots\dots\dots \times 5$$

$$\underline{\quad - \quad - \quad - \quad - \quad}$$

$$-125 = -11700b - 9300b_1$$

$$-(125 = -11700b - 9300b_1) \dots\dots\dots ix$$

Again multiplying equation viii by 9300 and equation ix by 11700 and subtracting equation ix from viii.

$$1367100 = 138253800b + 108810000b_1 \dots\dots\dots \times 9300$$

$$1462500 = 136890000b + 108810000b_1 \dots\dots\dots \times 11700$$

$$\underline{\quad - \quad - \quad - \quad - \quad}$$

$$95400 = 1363800b$$

$$b = 0.069$$

Substituting the value of b in equation viii we get

$$147 = 14866 \times 0.069 + 11700b_1$$

$$b_1 = 0.101$$

Again the substituting the value of b and b<sub>1</sub> in equation v

$$6 = 5a + 463b + 445b_1$$

$$7 = 5a + 463 \times -0.069 + 445 \times 0.101$$

$$a = -1.3996$$

Substituting the value of a, b and  $b_1$

$$Y = -1.3996 - 0.069x + 0.101x_1$$

To find out the profit in future, let's assume x and  $x_1$  as 200 Then,

$$\begin{aligned} Y &= a + bx + b_1 x_1 \\ &= -1.3996 + -0.069 \times 200 + (0.101 \times 200) \\ &= 5 \end{aligned}$$

The profit is  $5 \times 100000000 = 500000000$

Keeping the value of x as constant and changing the value of  $x_1$  as 250.

$$\begin{aligned} Y &= a + bx + b_1 x_1 \\ &= -1.3966 + -0.069 \times 200 + (0.101 \times 250) \\ &= 10 \end{aligned}$$

The profit is  $10 \times 100000000 = 1000000000$

Again Keeping the value of  $x_1$  is as constant and changing the value of x as 250.

$$\begin{aligned} Y &= a + bx + b_1 x_1 \\ &= -1.3996 + (-0.069 \times 250 + 0.101 \times 200) \\ &= 1.5504 \end{aligned}$$

The profit is  $1.5504 \times 100000000 = 155040000$

### **Interpretation:**

When we assume the investment plus loan & advance and deposit is 250 each, the profit is Rs 500000000. In next step investment plus loan & advance is constant and deposit is changed by 50, the profit is 1000000000. Similarly investment plus loan & advance is changed and deposit is constant, that time profit is 155040000.

**APPENDIX - 5**

**Calculation of Co-relation between investment and deposit**

**HBL**

(Rs. in million)

Year	Investment+Loan & Advance (X)	Deposit (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2060	1491	2100	3131100	2223081	4410000
2061	1596	2276	3632496	2547216	510176
2062	1875	2483	4655625	3515625	6165289
2063	2641	2646	6988086	6974881	7001316
2064	2949	2991	8820459	8696601	8946081
	<b>∑ X 10552</b>	<b>∑ Y 12496</b>	<b>∑ XY = 27227766</b>	<b>∑ X<sup>2</sup> = 23957404</b>	<b>∑ Y<sup>2</sup> = 31702862</b>

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

$$r = \frac{5 \times 27227766 - 10552 \times 12496}{\sqrt{(5 \times 23957404 - (10552)^2) \cdot (5 \times 31702862 - (12496)^2)}}$$

$$r = \frac{4281038}{\sqrt{(8442316) \cdot 2364294}}$$

$$r = \frac{4281038}{446759.356}$$

$$r = 0.9582$$

$$\text{Coeff. of Determination } r^2 = r \times r = 0.9582 \times 0.9582 = 0.9181$$

$$\begin{aligned} \text{Probable Error (P.E)} &= 0.6745 \times \frac{1-r^2}{\sqrt{n}} \\ &= 0.6745 \times \frac{1-0.9582^2}{\sqrt{5}} \\ &= 0.6745 \times 0.0366 \\ &= 0.0247 \end{aligned}$$

$$\begin{aligned} 6 \times \text{P.E.} &= 6 \times 0.0347 \\ &= 0.1481 \end{aligned}$$

R > 6P.E therefore Correlation is Significant

**NIBL**

(Rs. in million)

Year	Investment+Loan & Advance (X)	Deposit (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2060	762	792	603504	580644	627264
2061	1135	1171	1329085	1288225	1371241
2062	1437	1425	2047725	2064969	2030625
2063	1868	1893	3536124	3489424	3583449
2064	2400	2449	5877600	5760000	5997601
	<b>∑ X 7602</b>	<b>∑ Y 7730</b>	<b>∑ XY = 13394038</b>	<b>∑ X<sup>2</sup> = 13182262</b>	<b>∑ Y<sup>2</sup> = 13610180</b>

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

$$r = \frac{5 \times 1394038 - 7602 \times 7730}{\sqrt{(5 \times 13182262 - (7602)^2) \cdot (5 \times 13610180 - (7730)^2)}}$$

$$r = \frac{8206730}{\sqrt{8125906} \cdot 8298000}$$

$$r = \frac{8206730}{8211502.176}$$

$$r = 0.9994$$

$$\text{Coeff. of Determination } r^2 = r \times r = 0.9994 \times 0.9994 = 0.9988$$

$$\begin{aligned} \text{Probable Error (P.E)} &= 0.6745 \times \frac{1 - r^2}{\sqrt{n}} \\ &= 0.6745 \times \frac{1 - 0.9994^2}{\sqrt{5}} \\ &= 0.6745 \times 0.0005 \\ &= 0.0004 \end{aligned}$$

$$\begin{aligned} 6 \times \text{P.E.} &= 6 \times 0.0004 \\ &= 0.0022 \end{aligned}$$

R > 6P.E therefore Correlation is Significant

**NSBBL**

(Rs. in million)

Year	Investment+Loan & Advance (X)	Deposit (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2060	597	652	389244	356409	425104
2061	738	723	533574	544644	522729
2062	923	865	798395	851929	748225
2063	1176	1085	1275960	1382976	1177225
2064	1222	1144	1397968	1493284	1308736
	<b>∑ X 4656</b>	<b>∑ Y 4469</b>	<b>∑ XY = 4395141</b>	<b>∑ X<sup>2</sup> = 4629242</b>	<b>∑ Y<sup>2</sup> = 4182019</b>

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

$$r = \frac{5 \times 4395141 - 4656 \times 4469}{\sqrt{(5 \times 4629242 - (4656)^2) \cdot (5 \times 4182019 - (4469)^2)}}$$

$$r = \frac{1168041}{\sqrt{1467874} \cdot 938134}$$

$$r = \frac{1168041}{1173483.066}$$

$$r = 0.9954$$

$$\text{Coeff. of Determination } r^2 = r \times r = 0.9954 \times 0.9954 = 0.9908$$

$$\begin{aligned} \text{Probable Error (P.E)} &= 0.6745 \times \frac{1 - r^2}{\sqrt{n}} \\ &= 0.6745 \times \frac{1 - 0.9954^2}{\sqrt{5}} \\ &= 0.6745 \times 0.0041 \\ &= 0.0028 \end{aligned}$$

$$6 \times \text{P.E.} = 6 \times 0.0028$$

$$= 0.0166$$

R > 6P.E therefore Correlation is Significant



**EBL**

(Rs. in million)

Year	Investment+Loan & Advance (X)	Deposit (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2060	665	669	444885	442225	447561
2061	860	806	693160	739600	649636
2062	1003	1010	1013030	1006009	1020100
2063	1433	1380	1977540	2053489	1904400
2064	1904	1910	3636640	36252165	3648100
	<b>∑ X 5865</b>	<b>∑ Y =5775</b>	<b>∑ XY = 776525</b>	<b>∑ X<sup>2</sup> = 7866539</b>	<b>∑ Y<sup>2</sup> = 7669797</b>

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

$$r = \frac{5 \times 776525 - 5865 \times 5775}{\sqrt{(5 \times 7866539 - (5865)^2) \cdot (5 \times 7669797 - (5775)^2)}}$$

$$r = \frac{4955900}{\sqrt{4934470 \cdot 4998360}}$$

$$r = \frac{4955900}{4966312.197}$$

$$r = 0.9979$$

$$\text{Coeff. of Determination } R^2 = r \times r = 0.99794 \times 0.9979 = 0.9958$$

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

$$= 0.6745 \times \frac{1 - 0.9979^2}{\sqrt{5}}$$

$$= 0.6745 \times 0.0019$$

$$= 0.0013$$

$$6 \times \text{P.E.} = 6 \times 0.0013$$

$$= 0.0076$$

R > 6P.E therefore Correlation is Significant

**BOKL**

(Rs. in million)

Year	Investment+Loan & Advance (X)	Deposit (Y)	XY	X <sup>2</sup>	Y <sup>2</sup>
2060	653	617	402901	426409	380689
2061	844	774	653256	712336	599076
2062	840	894	750960	705600	799236
2063	1027	1043	1071161	1054729	1087849
2064	1266	1236	1564776	1602756	1527696
	<b>∑ X 4630</b>	<b>∑ Y =4564</b>	<b>∑ XY = 4443054</b>	<b>∑ X<sup>2</sup> = 4501830</b>	<b>∑ Y<sup>2</sup> = 4394546</b>

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

$$r = \frac{5 \times 4443054 - 4630 \times 4564}{\sqrt{(5 \times 4501830 - (4630)^2) \cdot (5 \times 4394546 - (4564)^2)}}$$

$$r = \frac{1083950}{\sqrt{1072250} \cdot 1142634}$$

$$r = \frac{2816170}{1106882.647}$$

$$r = 0.9793$$

$$\text{Coeff. of Determination } r^2 = r \times r = 0.9793 \times 0.9793 = 0.9590$$

$$\begin{aligned} \text{Probable Error (P.E)} &= 0.6745 \times \frac{1-r^2}{\sqrt{n}} \\ &= 0.6745 \times \frac{1-0.9793^2}{\sqrt{5}} \\ &= 0.6745 \times 0.0183 \\ &= 0.0124 \end{aligned}$$

$$\begin{aligned} 6 \times \text{P.E.} &= 6 \times 0.0124 \\ &= 0.0742 \end{aligned}$$

R > 6P.E therefore Correlation is Significant

**APPENDIX -6**  
**Calculation of Investment Trend for Next Five Year**

**NIBL**

(Rs. in million)

Year (X)	Investment (Y)	$x(X - \bar{X})$	$y(Y - \bar{Y})$	$xy$	$x^2$
2060	7618	-2	-6752	13504	4
2061	11347	-1	-3023	3023	1
2062	14370	0	0	0	0
2063	18680	1	4310	4310	1
2064	24001	2	9631	19262	4
		$\sum X = 0$	$\sum Y = 4166$	$\sum XY = 40099$	$\sum X^2 = 10$

We have

$$Y = b + bx \dots\dots\dots(i)$$

$$\sum y = na + b \sum x \dots\dots\dots(ii)$$

$$\sum xy = a \sum x + b \sum x^2 \dots\dots\dots(iii)$$

From equation (ii) we get

$$\sum y = na + b \sum x$$

$$\text{Or, } 4166 = 5a + b.0$$

$$\text{Or, } a = \frac{4166}{5}$$

$$= 833.2$$

From equation (iii) we get

$$\sum xy = a \sum x + b \sum x^2$$

$$\text{Or, } 40099 = a.0 + b \times 10$$

$$\text{Or, } a = \frac{40099}{10}$$

$$= 4009.9$$

From equation (i) we get

$$Y = b + bx$$

$$\text{Or, } Y - \bar{Y} = a + b(X - \bar{X})$$

$$\text{Or, } Y = \bar{Y} + a + b(X - \bar{X})$$

Now,

$$\begin{aligned}
 Y_{65} &= 14370 + 833.2 + 4009.9 (2065 - 2062) \\
 &= 27232.9 \\
 &= 27233
 \end{aligned}$$

$$\begin{aligned}
 Y_{66} &= 14370 + 833.2 + 4009.9 (2066 - 2062) \\
 &= 31242.8 \\
 &= 31243
 \end{aligned}$$

$$\begin{aligned}
 Y_{67} &= 14370 + 833.2 + 4009.9 (2067 - 2062) \\
 &= 35252.7 \\
 &= 35253
 \end{aligned}$$

$$\begin{aligned}
 Y_{68} &= 14370 + 833.2 + 4009.9 (2068 - 2062) \\
 &= 39262.6 \\
 &= 39263
 \end{aligned}$$

$$\begin{aligned}
 Y_{69} &= 14370 + 833.2 + 4009.9 (2069 - 2062) \\
 &= 43272.5 \\
 &= 43272
 \end{aligned}$$

### HBL

(Rs. in million)

Year (X)	Investment (Y)	$x(X - \bar{X})$	$y(Y - \bar{Y})$	$xy$	$x^2$
2060	14909	-2	-3846	7692	4
2061	15960	-1	-2795	2795	1
2062	1875	0	0	0	0
2063	26406	1	7651	7651	1
2064	29494	2	10739	21478	4
		$\sum X = 0$	$\sum Y = 11749$	$\sum XY = 39616$	$\sum X^2 = 10$

We have

$$Y = a + bx \dots\dots\dots(i)$$

$$\sum y = na + b \sum x \dots\dots\dots(ii)$$

$$\sum xy = a \sum x + b \sum x^2 \dots\dots\dots(iii)$$

From equation (ii) we get

$$\sum y = na + b \sum x$$

$$\text{Or, } 11749 = 5a + b \cdot 0$$

$$\begin{aligned}\text{Or, } a &= \frac{11749}{5} \\ &= 2349.8\end{aligned}$$

From equation (iii) we get

$$\sum xy = a \sum x + b \sum x^2$$

$$\text{Or, } 39616 = a \cdot 0 + b \cdot 10$$

$$\begin{aligned}\text{Or, } a &= \frac{39616}{10} \\ &= 3961.6\end{aligned}$$

From equation (i) we get

$$Y = a + bX$$

$$\text{Or, } Y - \bar{Y} = a + b(X - \bar{X})$$

$$\text{Or, } Y = \bar{Y} + a + b(X - \bar{X})$$

Now,

$$\begin{aligned}Y_{65} &= 1875 + 2349.8 + 3961.6 (2065 - 2062) \\ &= 32989.2 \\ &= 2989\end{aligned}$$

$$\begin{aligned}Y_{66} &= 1875 + 2349.8 + 3961.6 (2066 - 2062) \\ &= 36951.2 \\ &= 36951\end{aligned}$$

$$\begin{aligned}Y_{67} &= 1875 + 2349.8 + 3961.6 (2067 - 2062) \\ &= 40912.8 \\ &= 40912\end{aligned}$$

$$\begin{aligned}Y_{68} &= 1875 + 2349.8 + 3961.6 (2068 - 2062) \\ &= 44874.4 \\ &= 44874\end{aligned}$$

$$\begin{aligned}Y_{69} &= 1875 + 2349.8 + 3961.6 (2069 - 2062) \\ &= 48836\end{aligned}$$

**NBIBL**

(Rs. in million)

Year (X)	Investment (Y)	$x(X - \bar{X})$	$y(Y - \bar{Y})$	xy	x
2060	5968	-2	-3259	6518	4
2061	7380	-1	-1847	1847	1
2062	9227	0	0	0	0
2063	11760	1	2533	2533	1
2064	12224	2	2997	-5994	4
		<b><math>\sum X = 0</math></b>	<b><math>\sum Y = 424</math></b>	<b><math>\sum XY = 16892</math></b>	<b><math>\sum X^2 = 10</math></b>

We have

$$Y = a + bx \dots\dots\dots(i)$$

$$\sum y = na + b \sum x \dots\dots\dots(ii)$$

$$\sum xy = a \sum x + b \sum x^2 \dots\dots\dots(iii)$$

From equation (ii) we get

$$\sum y = na + b \sum x$$

$$\text{Or, } 424 = 5a + b \cdot 0$$

$$\begin{aligned} \text{Or, } a &= \frac{424}{5} \\ &= 84.8 \end{aligned}$$

From equation (iii) we get

$$\sum xy = a \sum x + b \sum x^2$$

$$\text{Or, } 19892 = a \cdot 0 + b \cdot 10$$

$$\begin{aligned} \text{Or, } a &= \frac{19892}{10} \\ &= 1989.2 \end{aligned}$$

From equation (i) we get

$$Y = a + bx$$

$$\text{Or, } Y - \bar{Y} = a + b(X - \bar{X})$$

$$\text{Or, } Y = \bar{Y} + a + b(X - \bar{X})$$

Now,

$$\begin{aligned}
Y_{65} &= 9227 + 84.8 + 1689.2 (2065 - 2062) \\
&= 14379.4 \\
&= 14379
\end{aligned}$$

$$\begin{aligned}
Y_{66} &= 9227 + 84.8 + 1689.2 (2066 - 2062) \\
&= 16068.6 \\
&= 16069
\end{aligned}$$

$$\begin{aligned}
Y_{67} &= 9227 + 84.8 + 1689.2 (2067 - 2062) \\
&= 17757.8 \\
&= 17758
\end{aligned}$$

$$\begin{aligned}
Y_{68} &= 9227 + 84.8 + 1689.2 (2068 - 2062) \\
&= 19447
\end{aligned}$$

$$\begin{aligned}
Y_{69} &= 9227 + 84.8 + 1689.2 (2069 - 2062) \\
&= 21136.2 \\
&= 21136
\end{aligned}$$

**EBL**

(Rs. in million)

Year (X)	Investment (Y)	$x(X - \bar{X})$	$y(Y - \bar{Y})$	$xy$	$x$
2060	6647	-2	-3387	6774	4
2061	8600	-1	-1434	1434	1
2062	10034	0	0	0	0
2063	14326	1	4292	4292	1
2064	19044	2	9010	18020	4
		$\sum X = 0$	$\sum Y = 8481$	$\sum XY = 30520$	$\sum X^2 = 10$

We have

$$Y = a + bx \dots\dots\dots(i)$$

$$\sum y = na + b \sum x \dots\dots\dots(ii)$$

$$\sum xy = a \sum x + b \sum x^2 \dots\dots\dots(iii)$$

From equation (ii) we get

$$\sum y = na + b \sum x$$

$$\text{Or, } 8481 = 5a + b \cdot 0$$

$$\begin{aligned}\text{Or, } a &= \frac{8481}{5} \\ &= 1696.2\end{aligned}$$

From equation (iii) we get

$$\sum xy = a \sum x + b \sum x^2$$

$$\text{Or, } 30520 = a \cdot 0 + b \cdot 10$$

$$\begin{aligned}\text{Or, } a &= \frac{30520}{10} \\ &= 3052\end{aligned}$$

From equation (i) we get

$$Y = b + bx$$

$$\text{Or, } Y - \bar{Y} = a + b(X - \bar{X})$$

$$\text{Or, } Y = \bar{Y} + a + b(X - \bar{X})$$

Now,

$$\begin{aligned}Y_{65} &= 10034 + 1696.2 + 3052(2065 - 2062) \\ &= 20886.2 \\ &= 20886\end{aligned}$$

$$\begin{aligned}Y_{66} &= 10034 + 1696.2 + 3052(2066 - 2062) \\ &= 23938.2 \\ &= 23938\end{aligned}$$

$$\begin{aligned}Y_{67} &= 10034 + 1696.2 + 3052(2067 - 2062) \\ &= 26990.2 \\ &= 26990\end{aligned}$$

$$\begin{aligned}Y_{68} &= 10034 + 1696.2 + 3052(2068 - 2062) \\ &= 30042.2 \\ &= 30042\end{aligned}$$

$$\begin{aligned}Y_{69} &= 10034 + 1696.2 + 3052(2069 - 2062) \\ &= 33094.2 \\ &= 33094.2\end{aligned}$$



**BOKL**

(Rs. in million)

Year (X)	Investment (Y)	$x(X - \bar{X})$	$y(Y - \bar{Y})$	xy	x
2060	6532	-2	-1871	3742	4
2061	8444	-1	41	-41	1
2062	8403	0	0	0	0
2063	10274	1	1871	1871	1
2064	12659	2	4256	8512	4
		<b><math>\sum X = 0</math></b>	<b><math>\sum Y = 4297</math></b>	<b><math>\sum XY = 14084</math></b>	<b><math>\sum X^2 = 10</math></b>

We have

$$Y = a + bx \dots\dots\dots(i)$$

$$\sum y = na + b \sum x \dots\dots\dots(ii)$$

$$\sum xy = a \sum x + b \sum x^2 \dots\dots\dots(iii)$$

From equation (ii) we get

$$\sum y = na + b \sum x$$

$$\text{Or, } 4297 = 5a + b \cdot 0$$

$$\begin{aligned} \text{Or, } a &= \frac{4297}{5} \\ &= 859.4 \end{aligned}$$

From equation (iii) we get

$$\sum xy = a \sum x + b \sum x^2$$

$$\text{Or, } 14084 = a \cdot 0 + b \cdot 10$$

$$\begin{aligned} \text{Or, } a &= \frac{14084}{10} \\ &= 1408.4 \end{aligned}$$

From equation (i) we get

$$Y = a + bx$$

$$\text{Or, } Y - \bar{Y} = a + b(X - \bar{X})$$

$$\text{Or, } Y = \bar{Y} + a + b(X - \bar{X})$$

Now,

$$\begin{aligned} Y_{65} &= 8403 + 959.4 + 1408 (2065 - 2062) \\ &= 13487.6 \end{aligned}$$

$$= 13488$$

$$\begin{aligned} Y_{66} &= 8403 + 959.4 + 1408 (2066 - 2062) \\ &= 14896 \end{aligned}$$

$$\begin{aligned} Y_{67} &= 8403 + 959.4 + 1408 (2067 - 2062) \\ &= 16304.4 \\ &= 16304 \end{aligned}$$

$$\begin{aligned} Y_{68} &= 8403 + 959.4 + 1408 (2068 - 2062) \\ &= 17712.8 \\ &= 17713 \end{aligned}$$

$$\begin{aligned} Y_{69} &= 8403 + 959.4 + 1408 (2069 - 2062) \\ &= 19121.2 \\ &= 19121 \end{aligned}$$