# CHAPTER - ONE

## INTRODUCTION

### 1.1 General Background of the Study

Government has now initiated various economic policies like industrial policy, foreign investment policy, privatization policy and trade policy emphasizing on economic liberalization for the economic growth and development. Capital is considered as the most important and as the life-blood of the business to foster. Capital formation and its proper utilization are essential for economic development of any country. In such context, the financial institution plays a vital role in economic development of a country. They act as an intermediary between the surplus units and deficit units. It pools the funds scattered in the economy and mobilize them to productive sector. Financial system contains two components viz.; depository financial institution and non-depository financial institution. Commercial Banks and financial companies in Nepalese context are the examples of depository financial institution whereas Employee Provident Fund, Development Banks, Insurance Companies etc. are the examples of non-depository financial institution. As a depository financial institution, Commercial Banks accept deposits from customers in different form by providing interest and lend loan and advances to other customers who have cash shortage for investment and other usage by charging interest.

The history of banking in Nepal is not so long. It was started in 1994 B.S. after the establishment of Nepal Bank Limited. Before the establishment of this bank, people use to fulfill their needs from goldsmiths and moneylenders known as '*Sahu Mahajan*'. Later on in 1933 B.S. Prime Minister Ranodip Singh established 'Tejarath Adda' from where loans are disbursed against bullion but did not collect deposit from public. In 2013, Nepal Rastra Bank was established under Nepal Rastra Bank Act 2012 as a Central Bank of Nepal. It formulates monetary and fiscal policies to strengthen and develop financial system. Rastriya Banijya Bank and Agricultural Development Bank were established in 2022 B.S. and 2024 B.S. respectively to serve the public needs. After the restoration of democracy in 2046 B.S. and liberalization policy of financial sector adopted by government, financial sector has made a hallmark progress both in terms of the number of financial institutions and beneficiaries of financial services.

Commercial Banks are one of the major components in the financial system. They work as intermediary between depositors and lenders and facilitate in overall development of the economy, with major thrust in industrial development. Commercial Banks came into existence mainly with the objectives of collecting the idle funds, mobilizing them into productive sector and causing and overall economic development.

The Commercial Banks are the heart of the economic system. They hold the deposits of million of persons, government and business units. It exchanges money, accepts deposits, grants loan and operates commercial transaction. They make funds available through their lending and investing activities to borrowers, individuals, business firms and government. Thus, their task is to provide a collecting point for saving or relatively small average amount from large number of individual sources and invites them into a productive and needed sector of the country, so as to develop the nation. In the developing country like Nepal, there is always lack of financial resources not only because of it's real absence but because the available resources are not properly mobilized and are not fully utilized for productive purpose, in this course the Commercial Banks are financial institute rather than banking institute.

The act of saving and lending, borrowing and investing are intimately linked through the financial system. And one factor that significantly influences and ties all of them together is the rate of interest. The rate of interest is the price a borrower must pay to secure scarce loanable funds from a lender for an agreed upon period. It is the price of credit, but unlike other prices in the economy, the rate of interest is really a ratio of two quantities: the money cost of borrowing divided by the amount of money actually borrowed, usually expressed on an annual percentage basis.

"Interest rates send price signals to borrowers, lenders, savers, and investors. For example, higher interest rates generally bring forth a greater volume of savings and stimulate the lending of funds. Lower rates of interest, on the other hand, tend to dampen the flow of savings and reduce lending activity. Higher interest rates tend to reduce the volume of borrowing and capital investment and lower rates stimulate borrowing and investment spending" ***(Rose, 2003 : 98)***

### 1.1.1 Functions and Performances of Commercial Banks

The performances of Commercial Banks are broader in scope, size and magnitudes. Commercial Banks are one of the major financial intermediaries whose primary function is the transfer of monetary resources from the savers to the users. The transfers are made at certain prices and conditions governed by the broad policy parameters stipulated by the Central Bank authorities. The spread between the prices received by the banks on the funds lent and the prices paid by them on the funds mobilized is one of the crucial factors which determine the viability of banking operations. The functions of Commercial Banks are as follows:

**Primary Functions**

The primary functions of Commercial Banks are given below:

**Figure No. 1.1**

**Primary Functions of Commercial Bank**

**Accepting Deposit**

Commercial Banks accept deposits from individuals, partnership firms and corporations and also from central government and local governments. It is the most important function of the Commercial Banks. Different types of deposit accepted by Commercial Banks are as follows:

(i) **Current or demand deposit:** Demand deposits, often referred to as "Checking accounts' are essentially working balances that individuals, businesses, financial institutions, and governmental units use to make payments when they need cash by drawing cheque without prior notice and no interest is offered in this account.

(ii) **Saving deposit:** Saving deposits generally are in small amount. They bear a relatively low interest rate but may be withdrawn by the depositor with no notice.

(iii) **Fixed or time deposit:** Time deposits carry a fixed maturity; a penalty is charged for early withdrawal. This type of deposit usually offers the highest

interest rates a bank can pay. However the depositor can take loan from the bank against the security of fixed deposit receipt. The fixed deposit in Nepal is of 3 months, 6 months, 1 year, 2 years, and above.

(iv) **Margin deposits:** These are deposits used as margin on lending.

(v) **Call deposits:** These deposits that are called on short notice. It is also known as money at call and short notice.

### Providing Loans

The second important function of bank is to provide different types of loans. The principal business of Commercial Banks is to make loans to qualified borrowers. The Commercial Banks earns profit by giving the amounts deposited with it in the form of loans. Bank loans may be classified as: (a) Loans and advances, (b) Overdraft, (c) Cash credit, (d) discounting of a bills and so on. Loans and advances are major component of bank's lending portfolio. There are mostly commercial loans that are secured and constitute main sources of bank's assets. The excess loan taken more than deposit balance is overdraft. The credit taken for a short period of overnight is cash credit. Banks discount the bills on the basis of providing exports credit using the documents like bill of lending and other supporting documents. Loan may also be provided on the security banking of fixed time deposits certificates.

The bank charges interest on loans, which are usually higher than those offered on other deposits. Since the banks in Nepal are now free to fix interest rates, the rate of interest on both deposits and loans varies from bank to bank. As on mid-July 1999, bank charged 13.50-16.50 interest rates on different types of loans and these have been changed to range of 10-16 percent in 2003. Similarly, these have been changed to a range of 6.5 to 16 percent in the mid-July 2009.

### Investments

Commercial Banks also extend credit when they purchase securities' and this category of assets may be especially attractive when loan demand is slack, as a way of employing loanable funds. A very high percentage of these securities represent the obligations of governmental units. The remainder is corporate notes and bonds. Nepalese Commercial Banks have invested on shares and debentures of Nepal insurance and Transport Company, National Insurance Company, Nepal Oil Corporation, Credit Guarantee Corporation, Agricultural Projects Services Center, Rural Development banks and so on.

**Secondary Functions**

The functions other than main functions performed by Commercial Banks are called secondary functions. These are partly non-fund and service-based income. The secondary functions are as follows:

(i) Safety of the valuable goods - loans are given on the safety of the valuable goods pledged as security for loan.

(ii) Issue credit instrument - provides other financial services like issue of credit instruments to encourage further transaction of Commercial Banks.

(iii) Dealing of foreign exchange - allows undertake foreign exchange transactions as a source of income for the Commercial Banks.

(iv) Economic information and statistics – develops necessary information and the bank statistics to inform the public about the operations and financial position of the banks.

(v) Works as referee - provides needed information if some one to take advice on the borrowers or clients having business with banks.

(vi) Issue of guarantee - provides guarantee as a contingent liability to encourage foreign business of import and export.

(vii) Government transactions - helps the government in times of need to meet fiscal deficits.

### 1.1.2 History of Interest Rate in Nepal

In the context of Nepal, interest rate was regulated by the Central Bank during the early stage of financial market development taking the period from 1955 to 1965. But, the country's Central Bank namely Nepal Rastra Bank gradually began to liberalize the determination of interest rate on a phase-wise basis according to compatibility of the banks and the financial institutions that have developed in the country.

The Central Bank is a sole and whole institution authorized to determine interest rate as per NRB act for a large number of years. There are full discretion NRB in determining interest rate structure of banks and financial institutions taking from the period 1960 to 1975. NRB is empowered in the fixation of interest, which Commercial Banks and Financial Institutions have to follow although they can provide higher rates after fulfilling the minimum interest rate set by Nepal Rastra

Bank. In 1986, Financial Institutions got freedom in fixing their interest rates in their deposits and loans. In addition there was also, limitation on the interest rate amounts the different loans on provided for the productive and priority and full deprived sector. On August 22, 1992, Nepal Rastra Bank issued some directives to Commercial Banks and Financial Institutions to clearly spell out the interest rate policy encouraging competition in interest rate. NRB also instructed to limit their interest rate spread on deposit and credit at 6 percent within the mid- Dec 1993. A further instruction to banks and financial institutions was issued in 2002 and now the interest rate spread requires to be maintained by Commercial Banks and Financial Institutions has also been removed.

The interest rate regime in Nepalese Perspective change from rigid control and monopoly of NRB from 1960-1980 to that of ultimate deregulation of interest rate and removal of spread from 1986 to 2002. At present there is complete freedom to have competitive interest rate. However, NRB with change in monetary policy has given directives to the Commercial Banks and Financial Institutions to maintain balance in determination of interest rate on deposit and loan. The enactment of the Umbrella Act, putting all Financial Institutions under the same directives has directed banks and financial institutions to minimize the spread between interest rate on deposit and loan.

### 1.1.3 Brief Profile of Sample

Out of 28 Commercial Banks, only five banks are taken out as sample. Brief profile of these sample banks under study provides easy references to do research smoothly. They are as follows:

#### (i) Nabil Bank Limited (NABIL)

Nabil Bank Limited, the first foreign joint venture bank of Nepal, established in July 1984 AD under the company Act 1964 and started its operations from that. The initial foreign partner handed its shares to Emirates Bank Limited and now its shares transferred to National Bank Ltd. (Bangladesh). In January 1, 2002, the bank was renamed as Nabil Bank Limited. Previously, it was named as Nepal Arab Bank Limited. NABIL was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, NABIL provides a full range of commercial banking services through its 19 points of representation across the Kingdom and over 170 reputed correspondent

banks across the globe. The major shareholders of this bank are:

National Bank Ltd. (Bangladesh) 50%

Financial Institution 20%

General Public " 30%

NABIL, as a pioneer in introducing many innovative products and marketing concepts in the domestic banking sector, represents a milestone in the banking history of Nepal as it started an era of modern banking with customer satisfaction measured as a focal objective while doing business.

**(ii) Nepal Investment Limited (NIBL)**

Nepal Investment Bank Limited, one of the leading Commercial Banks of Nepal, previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner, holding 50% of the capital of NIBL, was Credit Agricole Indosuez, a subsidiary of one the largest banking group in the world.

With the decision of Credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, has acquired on April 2002 the 50 percent shareholding of Credit Agricole Indosuez in Nepal Indosuez Bank Ltd. Since, it sold its entire stake to Nepalese Promoters. The bank is renamed as Nepal Investment Bank Limited. It has following shareholding structure.

- A group of companies holding 50 percent of the capital.
- Rastriya Banijya Bank holding 15 percent of the capital.
- Rastriya Beema Sansthan holding the same percentage.
- The remaining 20 percent being held by the General Public,

**(iii) Standard Chartered Bank Nepal Limited (SCBNL)**

Standard Chartered Bank Nepal Limited formerly known as Nepal Grindlays Bank Limited has been in operation in Nepal since 1987. The initial foreign partner of this bank was ANZ Grindlays Bank. An integral part of the only international banking group currently operating in Nepal, the bank enjoys an impeccable reputation of a leading financial institution in the country. Currently the major shareholders are:

- Standard Chartered Bank (England) 50%
- Nepal Bank Limited 33%
- General Public 17%

The global network of SCBNL gives the bank, the unique opportunity to provide truly international banking in Nepal. Also, the Bank has been the pioneer in introducing "customer focused' products and services in the country and aspires to continue to be a leader in introducing new products in delivering superior services.

### (iv) Himalayan Bank Limited (HBL)

Himalayan Bank was established in 1993 in joint venture with Himalayan Bank Limited of Pakistan. It is first joint venture bank with majority of Nepalese shareholders. This bank has been adopting innovative and latest banking technology. Despite the cut-throat competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities Loans and Deposits. The major shareholders are as follows:

- Nepalese Promoters 51%
- Habib Bank (Pakistan) 20%
- Employees provident Fund 14%
- General Public 15%

Himalayan Bank is committed to be a "BANK WITH A DIFFERENCE".

### (v) Nepal SBI Bank (NSBIBL)

Nepal SBI Bank Ltd (NSBIBL) is the first Indo-Nepal joint venture in the financial sector sponsored by three institutional promoters, namely State Bank of India, Employees Provident Fund and Agricultural Development Bank of Nepal through a Memorandum of Understanding signed on 17th July 1992. NSBIBL was established on 7th July 1993 with an authorized capital of Rs. 12 crore and commenced operation with one full-fledged office at Durbar Marg, Kathmandu with 18 staff members. The staff strength has since increased to 174, The authorized and issued capital have been increased to Rs.100 crore and Rs.65 crore respectively, while the paid-up capital stands at Rs.64.78 crore. The shareholding structures of this bank are as follows:

- State Bank of India 50%
- Employees Provident Fund 15%
- Agricultural Development Bank Nepal 5%
- General Public 30%

## 1.2 Focus of the Study

The financial institutions growing as a mushroom in a country are currently viewed as catalyst in the process of economic growth of a country as they help in efficient transformation of idle saving into productive investments. The interest rates play a vital role in progress and survive of these institutions in the long run. It is believed as one of the most important factors for the development of financial institution. Changes in interest rates can have adverse effects both on a bank's earnings and its economic value. So, interest rate should be reasonable to increase its profit by increasing its financial performance.

The observed and the most focusable part of this study are to examine the effects of interest rate on financial performance of Nepalese Commercial Banks. This study attempts to analyze the interest rate structure of Nepalese Commercial Banks, effects of interest rate on its deposit collection and mobilization of its fund and also its' effect on profit of banks. The study is also concentrate on whether the theories on interest rate propounded by various economists match in Nepalese context or not. Since, interest rate is the main concern of every individual who saves (deposits) and borrows money, it is important to study about interest rate.

## 1.3 Statement of the Problems

Commercial Banks, one of the financial institutions, plays a crucial role in proper functioning and development of economy and maintaining standardization of society in a country. Commercial Banks operate its function under the rules, regulation, guidance and directives of the Central Bank as well as the Commercial Bank Act 2031 B.S. There is interrelationship between the interest rates, bank performances and economy of a country. In this sense that the interest rate has embedded power to influence the banking performance and the banking performance also assist to change the economy of the country. Similarly, the economic conditions of a country directly influence the determination of the interest rate. In the past, the Nepal Rastra Bank regulated all financial institutions to charge interest for deposit and loan but now these institutions are free to determine their interest rate. So, the interest rate charged and offered by Commercial Banks are also different. In the global competitive market it is very difficult for any business to survive and progress in long

run without doing some innovative and creative task in this sector. So, most of the Commercial Banks are adopting new banking system, they seem successful to achieve remarkable market share in Nepalese financial institution, which has lead to cut throat competition among each other. Apart these interest rates also perform a vital role in the field to financial institution because all the performance of Commercial Banks largely depends upon the interest rate fixed by them. Such changes in interest rate changes demand for investment and volume of saving, directly affect in value of stock, earning and economic value of banks.

The determination of interest rate in Commercial Banks is very critical job for the top-level management, because of inappropriate interest rate hampers the overall performance of the bank. The interest rate should be that, which induce people to save and deposit more in bank and also induce the investor to invest more in productive sectors of a country. Those activities progress the business of Commercial Banks and improve the economic condition of developing country like Nepal. Due to the low interest in deposit, depositors are not encouraged to deposit in Commercial Banks. They were attracted to financial and credit and saving cooperatives. Many people keep their saving idle because they are provided less interest. On the other hand, the lending rate of interest must be attractive to the borrowers, so that they will be able to enjoy benefits by utilizing borrowed fund. This is possible only when the fund- seeking people will be able to earn more than what they pay for loans.

It is very difficult to calculate the true or effective rates not only for public but also for university graduates in commerce or business administration. Since, the determination of true interest rate affects the performance of Commercial Banks.

## 1.4 Objectives of the Study

Since the performance of Commercial Banks, largely depends upon the interest rate charged by them. The main objective of this study is to assess and identify the effect of interest rate on the performance of Commercial Banks in Nepal. The following sub-objectives have been formulated to fulfill the above main objectives:

1. To study and evaluate the major qualitative factors in determining the interest rate charged and provided by the Nepalese Commercial Banks.
2 To examine the interest rate structure of Nepalese Commercial Banks in different

time period.

3 To study how far total deposit collection, total loan and advances and total investment have been affected by the interest rate of Nepalese Commercial Banks.
4. To evaluate the opinion of depositors, loaners and bankers on the effect of interest rate.
5. To assess and conclude the effect of change in interest rate on profitability of Nepalese Commercial Banks.

### 1.5 Research Questions

The researcher has influenced to analyze following questions:

- What factors affect interest rate and what kind of risk bankers face?
- How the interest rate changes affect in the performance of commercial bank?
- What are the methods used in determination of interest rate?
- How is it affects the deposit mobilization in different sectors?

### 1.6 Research Hypothesis

"Every researcher has to start with certain assumption and presumption through which subsequent study might prove and disapprove. It is the hypothesis round which entire research process revolves, A hypothesis helps the researcher in proceeding further and finding solution of the problem, which he/she wants to study. Without hypothesis, the effectiveness of the research is not possible, to know the scope of study, nature of data to be collected and the one to be discarded. Again, the hypothesis helps in organizing the collected data in a very systematic way and in fact it stands at the mid-point of research directing towards particular way of finding tentative solution to the question of how an why" ***(Joshi, 2003, P. 241).***

Hypothesis is a set as null hypothesis and alternative hypothesis.

1. Hypothesis one is related to the significance of the correlation coefficient between interest rate and deposits.

   Null hypothesis, Ho: P=0. i.e., interest provided on deposit and deposit amount by Commercial Banks are uncorrelated.

   Alternative hypothesis, Hj: P≠0, i.e., interest provided on deposits by Commercial Banks and deposit amount are correlated.
2. Hypothesis two is related to the significance of the correlation coefficient between interest rate and lending.

Null hypothesis, Ho: P=0, i.e., interest charged on lending and lending amount of Commercial Banks are uncorrelated.

Alternative hypothesis, Hj: P≠0, i.e., interest charged on lending and lending amount of commercial bank are correlated.

3. Hypothesis three is related to the significance of the correlation coefficient between interest rate on investment and investment amount.

   Null hypothesis, Ho: P=0, i.e., interest rate provided on investment and investment amount of Commercial Banks are uncorrelated.

   Alternative hypothesis, Hj. P≠0, i.e., interest rate provided on investment and investment amount of Commercial Banks are correlated.

4. Hypothesis four is related to the significance of the correlation coefficient between interest rate on deposit and interest rate on lending.

   Null hypothesis, Ho: P=0, i.e., interest rate provided on deposit and interest rate charged on lending of Commercial Banks are uncorrelated.

   Alternative hypothesis, Hj: P≠0, i.e. interest rate provided on deposit and interest rate charged on lending of Commercial Banks are correlated.

## 1.7 Significance of the Study

The determination of interest rate is very critical job to top-level management in the financial institutions because the interest rate determined by them will affect their financial performance, that directly link with the earning and economic value of the institute as well as economic activities of society. So, the determination of interest rate in Commercial Banks should be effective that help to progress their business in right path. This study will be benefited in determining interest rate and choose appropriate investment decision as whole study is based on effect of interest rate. In some instance Commercial Banks and Financial Institutions even exploit the customers charging unfavorable interest rate, which badly effects on its performance. It is hoped that to some extent this study will help the policy makers to make strong policy regarding interest rate charged on deposit, lending and marketable securities. Last but not the least this study will help teachers, student, researchers and academicians in abstracting some useful information about effect of interest rate on financial performance of Commercial Banks and economic activities in Nepal. It is useful to the bankers, lenders, borrowers and other researchers. It helps the student about study of effect of interest on financial performance of

commercial bank.

## 1.8 Limitation of the Study

There are some limitations under this study, which are as follows.

1. This study is mainly based on the secondary data rather than the primary data.
2. This study has covered data from Mid-July 2005 to 2009.
3. Although there are 28 Commercial Banks, samples have been drawn as per non-random sampling covering only few banks for the study convenience. So, there may exist some sample errors.
4. The reliability of this study depends upon the reliability of published data and the fairness of the opinion given by respondents.
5. Since this study is only for the purpose of fulfillment of the Master Degree, stipulated time and resources are the limitation for the study.

## 1.9 Organization of the Study

This study is divided into five chapters. The first chapter is designed to be introductory chapter that includes general background of the study, list of Commercial Banks, brief profile of sample banks, research hypothesis, focus of the study, statement of the problem, objective of the study, significance of the study, and limitation of the study.

The second chapter reveals the review of literature, which includes review of book and review of relevant study. The review of book contain concept of interest and interest rate, function of interest rate, Theories of interest rate, determinants of interest rate, factors affecting interest rate, linkage of interest rate on banking performance and effects of interest rate risk. Similarly, the review of relevant study contains review of articles and review of unpublished thesis.

The third chapter is research methodology, which includes research design, population and sample of the study, sources of data and collection procedures, data processing and presentation techniques, Necessary tools and techniques.

The forth chapter presents analysis and interpretation of data of related topic based on annual reports of sample banks, publications of NRB and research questionnaires.

The fifth chapter is the last chapter that includes summary, conclusion and recommendation.

# CHAPTER - TWO

## REVIEW OF LITERATURE

The chapter I provided the introduction, problems, objectives and limitation of this study. This chapter review of literature provides the concepts inputs and bases for this study. It develops concepts and ideas about the selected topics by reviewing all the relevant materials regarding these topics. "Review of literature means reviewing research studies or other relevant propositions in the related area of the study so that all the past studies, their conclusions and deficiencies may be known and further research can be conducted. It is an integral and mandatory process in research works" ***(Joshi, 2003: 107)***.

"Review of literature is way to discover what other researcher in the area of our problem has uncovered. It is also a way to avoid investigating problems what have already been definitely answered. The literature survey provides the students with the knowledge of the status of their field of research. The primary purpose of literature review is to learn, not to accumulate. It enables the researcher to know; what research has been done in the subject? What others have written about the topic? What theories have been advanced? The approach taken by other researchers. Areas of agreement or disagreement, and whether there are gaps what you fill through the proposed research" ***(Wolf & Pant, 2003 : 34 & 35)***.

Review of literature, thus, directly leads to the question one proposes to investigate. This chapter can be divided into two parts. They are Conceptual/Theoretical review (review of related books) and Review of related studies.

### 2.1 Conceptual and Theoretical Review

This segment related to the review of related books. The theoretical concept of interest rate and its relation with other subjects are discussed.

#### 2.1.1 Meaning of Interest

In economics, interest has been defined in various ways. Commonly, interest is regarded as the payment for the use or service of capital. In other words, interest is the price paid

for the use of borrowed funds from other. These funds are mainly used for investment in physical capital but they may also be used for consumption purposes. As money to be invested in physical capital has to be saved by some one, interest also becomes the price for abstinence or waiting or time preference involved in the act of saving and lending it to other for investment in capital.

Interest is the amount that an individual can earn by lending a unit of currency for a year. It is the cost of borrowing or the price paid for the use of another's money. It is charge for borrowing money or the return for lending it. Interest may be gross and pure. The payment, which the borrower makes to the lender excluding the principal, is gross interest. Net interest is the payment for the use of capital or money only. It is normally the same during a period even in different markets. Interest can be explained as reward for risk taking, reward for inconvenience and reward for management. Pure interest is what remains with the lenders after deducting the reward for risk taking, inconvenience and management from Gross interest.

### 2.1.2 Meaning of Interest

The acts of saving and lending, borrowing and investing are intimately linked through the financial system or financial performance and one factor that significantly influences and ties all of them together is the rate of interest. The rate of interest is the price a borrower must pay to secure scare loanable funds from a lender for an agreed - upon time period. It is the price of credit. The rate of interest is the ratio of two quantities. The money cost of borrowing is calculated by the amount of money actually cost of borrowing divided by the amount of money actually borrowed, usually expressed on an annual percentage basis. Thus,

Annual Rate of Interest on Loanable Fund (in percent)

$$= \frac{\text{Fee required by the Lender for the Borrower to obtain credit}}{\text{Amount of credit made available to the Borrower}} \times 100$$

Interest rate send price signals to borrowers, lenders, savers and investors. For example, higher interest rate generally bring forth a greater volume of saving and stimulate the lending of funds. Lower rate of interest on the other hand, tend to damper the flow of saving and reduce lending activity. Higher interest rate tends to reduce the volume of borrowing and capital investment, and lower interest rate stimulates borrowing and investment spending.

### 2.1.3 Importance Functions of Interest Rate

"The rate of interest performs several important functions in economy. These functions are stated as follows.

- It helps guarantee that current savings will flow into investment to promote economic growth.
- It rations the available supply of credit, generally providing loanable funds to those investment projects with the highest expected returns,
- It brings the supply of money into balance with the public's demand for money.
- It is an important tool of government policy through its influence on the volume of saving and investment. If the economy is growing too slowly and unemployment is raising the government can use its policy tools to lower interest rates in order to stimulate borrowing and investment. On the other hand, an economy experiencing rapid inflations has traditionally called for a government policy of higher interest rates to slow borrowing and spending and encourage more saving.

### 2.1.4 Theories of Interest Rate *(Rose 2003 : 114-120)*

Various interest rate theories have been propounded by various economists, which describe how interest rate is determined in various situations. Some well-known theories of interest rates are as follows.

#### 2.1.4.1 Classical Theory of Interest Rates

One of the oldest theories concerning the determinants of the pure or risk free interest rare is the classical theory of interest rates, developed during the eighteenth and nineteenth centuries by a number of British economists and elaborated by *Irving fisher 1930)* and others more recently. The classical theory argues that the rate of interest is determined by two forces: (1) the supply of saving, derived mainly from households, and (2) the demand for investment capital, coming mainly from the business sectors.

**Supply of Saving**

**Saving by Households**

Most saving in modern industrialized economies is carried out by individuals and families. For these households, saving is simply abstinence from consumption spending. Current saving, therefore, are equal to the difference between current

income and current consumption expenditures.

In making the decision on the timing and amount of saving to be done, households typically consider several factors: the size of current and long-term income, the desired saving target, and the desired proportion of income to be set aside in the form of savings. Generally, the volume of household saving rises with income. Higher income families and individuals tend to save more and consume less relative to their total income than families with lower incomes.

Although income levels probably dominate saving decisions, interest rate also plays an important role. Interest rates affect an individual's choice between current consumption and saving for future consumption. The classical theory of interest assumes that individuals have a definite time preference for current over future consumption. A rational individual, it is assumed, will always prefer current enjoyment of goods and services over future enjoyment. Therefore, the only way to encourage on individual or family to consume less now and save more is to offer a higher rate of interest on current savings. If more were saved in the current period at a high rate of return, future consumption would be increased. For example, if the current rate of interest is 10 percent and a household save $100 instead of spending it on current consumption, it will be able to consume $110 in good and services a year from now.

The classical theory considers the payment of interest a reward for waiting the postponement of current consumption in favor of greater future consumption. Higher interest rates increase the attractiveness of saving relative to consumption spending, encouraging more individuals to substitute current saving for some quantity of current consumption. This is called substitution effect as a positive relationship between interest rates and the volume of savings. Higher interest rates bring forth a greater volume of current savings.

**Saving by Business Firms**

Not only households but also businesses save. Most businesses hold savings balances in the form of retained earnings (as reflected in their equity or net worth accounts). In fact, the increase in retained earnings reported by businesses each year is a key measure of the money for annual investment spending by business firms.

The critical element in determining the amount of business saving is the level of business profits. If profits are expected to rise, businesses will be able to draw more heavily on

earnings retained in the firm and less heavily on the money and capital.

A market for funds, the result is a reduction in the demand for credit and a tendency towards lower interest rates. On the other hand, when profits fall firms do not cut back on their investment plans; they are formed to make heavier use of money and capital markets for investment funds. The demand for credit rises and interest rates may rise as well.

Although the principal determinant of business saving is profit, interest rates also play a role in the decision of what proportion of current operating costs and long-term investment expenditures should be financed internally and what proportion externally, Higher interest rates in the money and capital markets typically encourage firms to use internally generated funds more heavily in financing projects. Conversely, lower interest rates encourage greater use of external funds from the money and capital markets.

**Saving by Government**

Governments also save, though less frequently than households and business. In fact most government saving (i.e. a budget surplus) appears to be unintended saving that arises when government receipts unexpectedly exceed the actual amount of expenditures. Income flows in the economy (out of which government tax, revenues arise) and the pacing of government spending programs are the dominant factors affecting government savings.

The total supply of funds is sum of above three elements as SS on figure no. 2.1

**Figure No. 2.1**

**The Substitution Effect Relating Saving & interest Rate**

*Source : Self Generated Figure*

**The Demand for Investment funds**

The savings made by business, government and households are important determinants of interest rate but they are only one side of determinants. The factors are investment spending made by business firms government and in some case households. Business requires huge amount of funds each year to purchase equipment, machinery and inventories and to support the construction of new buildings and other physical facilities. The majority of business expenditures for these purposes consist of what economists call replacement investment. But according to the classical economists, interest rate and investable fund have inverse relationship. At low rate of interest more investment project becomes economically viable. On the other hand, if the rate of interest rises to high level, fewer investment projects will be pursued and fewer funds will be required from the financial market as:

**Figure No. 2.2**

**The Investment Demand Schedule**

*Source : Self Generated Figure*

**The Equilibrium Rate of interest in the Classical Theory of interest Rate**

According to the classical economists, the interest rates in the financial markets were determined by the interplay of the supply of saving and the demand for investment. Specifically, the equilibrium rate of interest is determined at the point where the quantity of saving supplied to the market is exactly equal to the quantity of funds

demanded for investment. To support this in figure no. 2.3 this occurs at point E where the equilibrium tale of interest is IE and the equilibrium quantity of capital fund traded in the financial market is QE.

The market rate of interest moves towards its equilibrium level. However, supply and demand forces change so fast that the interest rate rarely has an opportunity to settle in at a specific equilibrium level. At any given time, the rate is probably above or below its true equilibrium level but moving toward that equilibrium, the volume of saving exceed the demand for investment capital creating an excess supply of savings. Savers will offer their fund at lower and lower rates until the market interest rate approaches equilibrium. Similarly, if the market rate is temporarily below equilibrium investment demand exceeds the quantity of saving available. Business firm will bid up interest rate until it approaches the level at which the quantity saved equals to quantity of funds demanded for investment purpose.

**Figure No. 2.3**

**The Equilibrium interest Rate in Classical Theory of interest Rate**

*Source : Self Generated Figure*

### 2.1.4.2 Liquidity Preference or Theory of Interest Rates

The rate of interest is really a payment for the use of scarce resource money. Businesses and individuals prefer to hold money for carrying out daily transactions and also as a precaution against future cash needs even through money's yield are usually low or even nonexistent.

Investors in fixed-income securities, such as government bonds, frequently desire to hold money or cash balances as a haven against declining asset prices, interest

rates, therefore, the price that must be paid to induce money holders to surrender a perfectly liquid asset and hold other assets that carry more risk. At times the preference for liquidity grows very strong. Unless the government explains the money supply, interest rate will rise.

In the theory of liquidity preference, only two outlets for investor funds are considered bonds and money or cash balances. Money provides perfect liquidity. Bonds pay interest but cannot be spent until converted into cash. If interest rates raise, the market value of bonds paying a fixed rate of interest falls, the investor would suffer a capital loss if those bonds were converted into cash. On the other hand, a fall in interest rate results, higher bonds prices: the bondholder will experience a capital gain if his/her bonds are sold for cash.

**Motives for Holding Money**

Public demands money for three difference purposes. The transactions motive represents the demand for money to purchase goods and services. Some money also must be held as a motive for precautionary because future is uncertain and we cannot predict exactly what expenses or investment opportunities will arise in the future. The third motive is speculative motive that stems from uncertainly about the future prices of bonds.

**Total Demand for Money**

The total demand for money or cash balances in the economy is simply the sum of transactions, precautionary and speculative demands. Because the principal determination of transactions and precautionary demand is income, not interest rates, these money demands are fixed at a certain level of national income. In the figure no. 2.4 the aggregate demand for the economy.

**Figure No. 2.4**

**The Total Demand for Money**

*Source : Self Generated Figure*

**The Supply of Money**

The other major element determining interest rates in liquidity preference theory is the supply of money. In modern economies, the money supply is controlled, or at least closely regulated by government. Because government decisions concerning the size of the money supply presumably are guided by the public welfare, not by the level of interest rates, the supply of cash balances is inelastic to the rate of interest. Supply of money Ms is shown in the figure no.2.5 below.

**Figure No. 2.5**

**The Supply of Money in Liquidity Preference Theory**

*Source : Self Generated Figure*

**The Equilibrium Rate of Interest in Liquidity Preference Theory**

The interplay of the total demand for the supply of money or cash balances determines the equilibrium rate of interest in the short run. In the figure below IE is the point where the quantity of money demanded by the public equals the quantity of money supplied. The equilibrium rate of interest is shown in the following figure:

**Figure No. 2.6**

**The Equilibrium Rate of Interest in the Liquidity Preference Theory**

*Source : Self Generated Figure*

### 2.1.4.3 Loanable Funds Theory of Interest Rate

The loanable funds theory is the most popular interest rate theory among practitioners. It argues that the risk free interest rate is determined by the interplay of two forces: the demand for and supply of credit (loanable funds). The demand for loanable funds consists of credit demands from domestic, businesses, consumers and government and also borrowing in the domestic market by foreigners. The supply of loanable funds stem from two sources domestic saving and new money.

**The Demand for Loanable Funds**

**Consumer (Household) Demand for Loanable Funds**

Domestic consumers demand loanable funds to purchase a wide variety of goods and service or credit. Recent research indicates that consumers are not particularly responsive to the rate of interest when they seek credit but focus instead principally on the non-price terms of loan, such as the down payment, maturity and size of installment payments.

**Domestic Business Demand for Loanable Funds**

The credit demands of domestic businesses generally are more responsive to changes in the rate of interest than in consumer borrowing. Most business credit is for such investment purposes as the purchase of inventories and new plant and equipment. The quantity of loanable funds demanded by the business sector increases as the rate of interest falls.

**Government Demand for Loanable Funds**

Government demand for loanable funds is a growing factor in the financial markets but doesn't depend significantly on the level of interest rates. Government decision on spending and borrowing depends in response to social needs and the public welfare, not the rate of interest. Moreover in case of central government, it has the power both to tax and to create money to pay its debts. State and local government demand on the other hand, is slightly inelastic because many local governments are limited in their borrowing activities by legal interest rate ceilings. When open market rate rises above the ceiling, some state and local governments are prevented from

offering their securities to the public.

**Total Demand for Loanable Funds**

The total demand for the loanable fund is the sum of domestic consumer, business and government credit demands. These demand curves slopes downward and to the right with respect to the rate of interest. Higher rate of interest lead some businesses, consumers and government to curtail their borrowing plans, lower rates brings forth more credit demand. The total demand for loanable fund is shown in the following figure no.2.7, DT is total demand.

**Figure No. 2.7**

**The Demand for Loanable Fund**

*Source : Self Generated Figure*

**Supply of Loanable Funds**

The major sources of supply of loanable fund are from two sources.

(i) The amount of saving by households, business, governments.

(ii) The amount of new money created by the commercial banking system.

**Domestic Saving**

Saving refers to the postponement of current consumption. The decision to save is the decision to forget current consumption in order to have a larger quantity of consumption in the future. Individual or household saves for a variety of reasons but there is little evidence to suggest that the quantity of loanable funds supplied through saving is clearly influenced by the level of the interest rate. A higher interest rate represents a greater reward to saver for postponing current consumption and thus might be expected to produce a higher quantity of saving for some individuals. In general ease, the quantity of savings supplied by individual is principally determined by the level of income and it is influenced to lesser degree by the level of interest

rates. Business saving refers to the net income after taxes of the firm, less any cash dividends i.e. retained earnings. There is little reason to believe that the volume of saving at business firm is strongly influenced by the level of interest rates. For governments the volume of saving is defined as the difference between revenues and expenditures such that saving exists where revenue exceeds expenditure (a budget surplus).

**Creation of New Money**

Although the volume of saving is the principal source of loanable fund in the financial markets, the supply of the loanable funds may be increased through the creation of new money beyond the amount made possible by current saving. The amount of new money-created is determined jointly by the actions of the commercial banking system and the securities and create money through the credit creation process. However, the ability of commercial bank to create money is limited by the Central Bank through the use of its monetary policy tools like open-marked operations, reserve requirement changes and discount rate changes.

**Total Supply of Loanable Funds**

The total supply of loanable funds is including domestic saving, foreign lending, dishoarding of money, and new credit by the domestic banking system. In the following figure no.2.8, total supply of loanable fund is given where ST is total Supply.

**Figure No. 2.8**

**The Supply of Loanable Funds (Credit)**

*Source : Self Generated Figure*

**The Equilibrium Rate of Interest in the Loanable Funds Theory**

The two forces of supply and demand for loanable funds determine not only the volume of lending and borrowing going on in the economy but also the rate of interest. The interest rate tends toward the equilibrium point at which the supply of loanable funds equals the demand for loanable funds. This point of equilibrium is shown in the following figure no.2.9, where IE is equilibrium rate of interest rate and QE is volume of loanable funds (credit).

**Figure No. 2.9**
**The Equilibrium Rate of Interest in Loanable Fund Theory**

*Source : Self Generated Figure*

**2.1.4.4 The Rational Expectations Theory**

The Rational Expectations theory is new for the financial market and institutions. This theory builds on a growing body of research evidence that the money and capital markets are highly efficient institutions in digesting new information affecting interest rates and security prices. This expectations theory assumes that businesses and individuals are rational agents who form expectations about the distributions of future asset prices and interest rates that do not differ significantly from optimal forecasts made from using all the available information that the marketplace provides. Rational agent attempts to make optional use of the resources at their disposal to maximize their return. Moreover, a rational agent will tend to make unbiased forecasts of future securities prices, interest rates and other variables.

**Figure No. 2.10**
**The Expected Demand for and Supply of Loanable Funds under the Rational Expectation Theory.**

DF = Actual Demand for Loanable Fund

DE = Expected Demand for Loanable Fund

DO = Demand for Loanable Fund in Low Interest Rate

SO = Actual Supply of Loanable Fund

SF = Actual Demand of Loanable Fund

Suppose in the above figure no. 2.10, SO and SF represents the actual supply and demand for loanable funds in the current period, while DF reflects the actual demand for loanable fund that will prevail in the next time. The supply of loanable funds is assumed to be the same in both time periods (SO=SF).

Now imagine that during the current periods, the government makes an unexpected announcement of its increased need to borrow more money in future period F due to an unusually large budget deficit. The result is new expected demand for loanable fund curve DE, projected to prevail in the next periods F but as viewed by borrowers and lenders today in time periods O. In this case, the equilibrium interest rate in the current period will not be IO but rather IE, where the expected demand curve (DE) intersects the actual supply curve SO. The equilibrium quantity of loanable funds traded in the current period then will be CE not CO. This is because, according to the rational expectations theory, borrowers and lenders will act as rational agents, using all the information then will be CE not CO. This is because, according to the rational agents, using all the information then posses to assets today. When the future period

arrives, the equilibrium interest rate will rise to rate IF and the quantity of loanable funds traded will be CF. The equilibrium rate moves upward because the demand for loanable fond in periods F is more that the expected future loanable funds demand as seen by market participants, in Period O.

### 2.1.5 Determinants of Market Interest Rate *(Gyawali, 2008 : 87-89)*

The market interest rate on debt securities (K) does not only represent the real rate of interest expected in the world of no inflation, rather it is the real rate of interest adjusted to expected inflation plus several premiums reflected by securities riskiness and marketability. Keeping such functional relationship in view, the determinants of market interest rates can be discussed as follows:

#### (a) Real Risk-free Rate of Interest

In a perfect market condition, the real risk-free rate of interest is an equilibrium rate resulting from the interaction of the supply of loanable funds and demand for loanable funds assuming that our economy is free from inflation. However, the real risk-free rate of interest does not remain constant but fluctuates over time depending upon the action of government and the state of economy because both affect the demand for and supply of funds. Simply stating, if demand increases or supply decreases, assuming no other changes, the real risk-free rate of interest increases. Conversely, if demand decreases and supply increases the real risk-free rate of interest decreases.

#### (b) Nominal Risk-free Rate of interest

The nominal risk-free rate of interest is the actual rate of interest charged by the supplier of funds and paid by the users of funds. It is the real rate of interest adjusted for expected average inflation over the life of security. Considering inflationary expectation, the nominal rate of interest [$K_{RF}$] is simply equal with real rate of interest [K*] plus expected average premium for inflation [IP]. It is denoted as:

$$KRF = K^* + IP$$

Expected inflation directly affects the interest rates because it is regarded as the killer of purchasing power reflected by the change in price level. If high rate of inflation is expected, the supplier of funds will demand a higher rate of interest to recover the lost purchasing power of funds. Therefore, interest rate is affected when expected inflation changes.

### (c) Default Risk Premium

Default risk premium refers to the addition payment for the risk that the users of funds will not pay the contractual interest and principal payment. Greater the uncertainty that the issuer of securities make timely payment of interest and repayment of principal at maturity, he/she expects higher default risk premium so that market interest rate rises. Government securities are free from default risk because we do not expect that government would default on paying regular interest and principal maturity. However, corporate securities are exposed to default risk. Therefore corporate securities with equal maturity, liquidity and other features similar government securities would sell at higher rate of interest because of default risk.

### (d) Liquidity Premium

Liquidity here refers to the convertibility of securities into cash. Investors generally prefer securities, which can be converted into cash without experiencing a loss in value. Generally the securities, which are actively, traded over-the-counter [OTC] market such as government securities and other issued by large and well established corporations, have high liquidity and vice versa. Since a potential loss in value will result from the need to sell quickly, a security with low liquidity would have a high liquidity risk. In other words, if a security is not liquid, investors will add a liquidity premium [LP] when they determine the interest rates of such securities. Therefore lower the marketability" of securities, the investors expect greater premium for liquidity so that market interest rate increases.

### (e) Maturity Risk Premium

Note that government securities are free from default risk. Therefore, market interest rates on government securities are simply the nominal risk-free rate, which is equal to the real risk-free rate plus an average inflation premium. However, market interest rates on government securities with longer term to maturity require an adjustment of another risk premium called maturity risk premium. It is well known fact that the value of security change by greater amount to a given change in interest rate if it has relatively longer term to maturity. As a conventional rate, the bond of any organization with longer term to maturity is more exposed to interest rate risk. Therefore, a premium risk is included to determine the required rate of interest if the maturity period is longer. If interest rate on otherwise similar risk class securities suddenly rise due to change in the money supply, the price of long-term bonds will

decline by more than the decline in the price of short-term bond and vice versa. Therefore, longer the maturity period, greater the market interest rate caused by maturity risk premium expected by investors.

However, it should be noted that in contrast to interest rate risk of longer term bonds, the short term bonds are more exposed to reinvestment risk. The investment in short-term bonds would result into frequency renewal problem when it matures. Therefore, if interest rte declines, it would lead to decline in interest in come fore investors that would otherwise have not been resulted if the fund were invested in longer term bonds. Because of the possibility of reinvestment at lower rate, the short term investor is heavily exposed to reinvestment rate risk.

Putting all these factors together, the market interest rates can be expressed as:

K = K* + IP + DRP + LP + MRP

Where,

K = The market rate of interest of a given security, which differs from one security to another depending upon the nature of risk associated.

K* = The real risk-free rate of interest that exists on a risk-free asset in the world with zero inflation.

IP = Average expected inflation rate over the life of given securities.

DRP = The default risk premium that results because of the possibility that a borrower will not pay interest and principal within the stated time period.

LP = Liquidity Premium

MRP = The maturity risk premium reflected by price risk on longer-term maturity bond.

KRF = K* + IP

### 2.1.6 Factors Affecting the Interest Rate *(Gyawali, 2008 : 89-92)*

Interest denotes the cost of money. It refers to the price paid for using money, whether borrowed or owned. The interest paid on debt capital and the dividends paid on ownership capital are examples of the cost of money. The supply of and demand for capital is the prime factor that affects the cost of money. The sources of supply and demand for loans are divided into four sectors- households, firms, governments and foreigners. An important cause of interest rate fluctuations are depended upon

the behaviour of above four sectors varied over time, i.e. why each of four sectors borrows and lends and the factors that affect how much they borrow and lend These factors also affect the interest rate fluctuations So, fluctuations in interest rate are the result of change in supply and demand for loanable funds To understand those fluctuations, we need to understand the forces that cause the supply and demand curves to move. These forces can be categorized into two factors, i.e. Economic Factors and Risk and Cost Factors.

### 2.1.6.1 Economic factors that affect interest rates

Although it is useful to identify those who amply or demand loanable funds, it is also necessary to recognize the underlying economic forces that cause a change in the supply of or the demand for loanable funds and therefore influence interest rates. These economic factors are explained as follows:

#### (a) Impact of economic growth on Interest rate

The investment decision of household, firms and government will depend to some extent on the state of the economy. If the economy is booming, there is a feeling of optimism among the businessmen and the industrialists. The national production consumption and capital expenditures, prices of finished goods and raw materials, level of employment all increase. Most business increases their planned expenditures for expansion. As households income also increases at this stage, they will less save and so borrow more. Government investment in production sectors also increases, which translates into additional borrowing. The aggregate demand schedule would shift outward (to the right). The supply of loanable funds schedule may also shift, but it is more difficult to know

On other hand, if the economy is in a recession, over cosmism occurs among the business due to the fear. Due to the closer of some businesses, it is natural for other to be affected. Under liquidity preference theory, the nominal rate must remain unchanged whatever may be the expectation will lower the real rate of interest.

There is less than one to one relationship between changes in expected inflation and nominal interest rates with the inflation caused wealth, income and depreciation effect that is. a rise in expected inflation reduces the real rate of return to lender and derives the nominal interest rate higher but rise in nominal rate is less than the increase in expected inflation. Nevertheless, according to the inflation caused

income tax effect, if investors desire to protect (i.e. hold constant) his or her expected real after tax rate of return, then nominal rate has to increase by a greater amount than any rise in the expected inflation rate because otherwise real after tax returns will decline when inflation increases

**(c) Impact of price deflation**

Deflation tends to force real interest rates higher even as nominal interest rates drop downward zero. These elevated real interest rates tend to slow investment spending and decrease the development of new jobs. Real economic output will decline as factors come to produce less and business profit fall. At the same time lenders gain at an expense of borrowers because the formers purchasing power rises, and business trying to borrow money have to struggle to raise the capital they require to grow and put people back to work.

The price deflation can result lower output of goods and services, but forces real interest rates upward. However, business and the financial system are much better positioned today to deal with moderate deflation, in part because of the development of so many risk management tools (such as financial future contracts, swaps, and options).

**(d) Impact of money supply on interest rates**

The Central Bank can affect the supply of loanable funds by increasing or reducing the total amount of deposit held by Commercial Banks or their depository institutions, when the Central Bank increases the money supply, which places downward pressure in interest rate. However, if the Central Bank's action affects inflationary expectations, this would also increase the demand for loanable funds, which could offset the effect of the increase in the supply of funds. If Central Bank reduces the money supply, it reduces the supply of loanable funds. Assuming no change in demand, this action places upward pressure on interest rates.

**(e) Impact of budget deficit on interest rates**

Government runs budget deficits if it spends more than tax revenue. Such deficiency could be covered either by borrowing or by issuing additional notes or currencies. Borrowing results into increase in demand for funds and the interest rate rise up. A higher government deficit increases the quantity of loanable funds demanded at any prevailing interest rate, causing an outward shift in the demand schedule. Assuming

no offsetting increase in the supply schedule, interest rate will rise. Given a certain amount of loanable funds supplied to market (though savings), excessive government demand for these funds tend to "crowd out" the private demand for funds. The government may be willing to pay whatever is necessary to borrow these funds, while the private sector may not. This impact is known as the 'crowding - out effect".

The supply schedule might shift a counterargument outward, if the government creates more jobs by spending more funds than collected from the public (this is what causes the deficit in the first place). If this were to occur, the deficit might not necessarily place upward pressure on interest rates. Much research has investigated this issue (in U.S.A.) and, in general has shown that higher deficits place upward pressure on interest rates.

The increase in public debt refers an increase in the government's demand for loanable funds. However, because other factors can offset this increased demand the increased demand for loanable funds by the government do not always result in higher interest rates.

#### 2.1.6.2 Risk and cost factors affecting interest rate

Though it is assumed deposit increases as interest rate increase but interest rate is affected by numerous factors. In real world, different financial institution quotes different interest rate. It means that the same types of instrument carries different interest rate so there is presence of interest spread. For this difference, there are numbers of factors influencing the difference in interest rates.

**(a) Marketability**

One of the most important considerations for an investor is whether a market exists for those assets he/she would like to acquire. This is the question of marketability and financial instruments traded around the world vary widely in terms of the ease and speed with which they can be converted into cash. Marketability is positively related to the size (total sales or total assets) and reputation of the institution issuing the securities and to the number of similar securities outstanding. Not surprisingly, stocks and bonds issued in large blocks by the largest corporations and government units tend to find acceptance more readily in the global financial markets and a consistent market price can be established. In fact, there is a negative relationship

between marketability and yield. More marketable assets generally carry lower expected returns than less marketable assets, other things being equal. Purchasers of assets that can be sold in the secondary market only with difficulty must be compensated for this inconvenience by a higher promised rate of return.

### (b) Liquidity

Liquidity refers to the convertibility of holding securities into cash without experiencing a loss in value. Liquidity has two aspects. The second aspect might be called a well-behaved price even if an asset is marketable. It is not liquid if selling it immediately, rather than waiting to sell, involves an expected loss. Marketability is closely related to another feature of financial assets that-influences their interest rate or yield: their degree of liquidity. A liquid financial asset is readily marketable. In addition, its price tends to be stable over time and it is reversible, meaning the holder has the little risk of loss. Because the liquidity feature of financial assets tends to lower their risk, liquid assets carry lower interest rates than illiquid assets.

### (c) Default Risk

Another important factor causing interest rate to differ one from another is the degree of default risk carried by individual securities. Investor's securities face many different kinds of risk, but one of the most important is default risk that a borrower will not make all promised payments at the agreed upon times. All securities except government securities are subject to varying degree of default risk. The yield on a risky security is positively related to the risk of borrower default as perceived by investor's yield on risky security.

The higher the default risk associated with a risky security, the higher the default risk premium on that security and greater the required rate of return (yield) that must be attached to the security as demanded by investors in the market place. And if risk-free rate remains unchanged, the security's risk yield must rise and the price must decline.

### (d) Taxability

The tax code can have a large effect on household incentives for borrowing and saving. For example, without taxes it makes little sense for you to pay 7 percent interest on a mortgage and at the same time save for your retirement by buying bonds yielding 6 percent with taxes it can make a lot of senses. Similarly in the tax

code can have enormous effects on the profitability of different types of investment and so on firm borrowing.

### (e) Payment Risk

A newer form of risk affecting the relative interest rates confronting modern investors arises when they acquire so called loan-backed securities. These loan-backed securities are usually created when a lending institution, such as a bank or mortgage company, removes a group of similar loans from its balance sheet and places them with a trustee (such as a security dealer) who using the loans as collateral sells securities to raise new capital for the lending institution. Each of these securities derives its value for the income earning potential of the pool of loans that backs the securities. As the loans in the pool generate interest and principal payments, these payments flow through to holders of the loan-backed securities, in loan-backed securities investors demand higher yields to compensate them for prepayment risk associated with it.

### (f) Exchange Rate Risk

As today's financial markets have become more global, there has been a significant growth in the borrowing and investing in foreign denominated financial claims. A U.S. company establishing manufacturing facility in Nepal might be inclined to issue share and or bonds denominated in Nepalese rupees rather than U.S. dollars. Investors also have available to them many investments involve exchange rate risk. This risk relates to the potentiality that the rate of exchange between the domestic currency and foreign denominated currency will change as a result of any numbers of factors. The primary risk for the borrower is that the value of the currency borrowed rises in relation to the domestic currency. This results in an unexpected cost on the international loans, since the loan would have to be repaid in the foreign currency that has risen in value relative to the domestic. This potential chance in currency values must be reflected in computing the cost of borrowing.

## 2.1.7 Interest Rate and its Linkage on Bank's Performance

Fluctuations in interest rates and in exchange rates change the value of promises of future payment. Such changes can result in significant profit or losses for financial institutions, which make accept and trade such promises much of what banks. Futures markets and other financial institutions do involve promises of future

payment. They accept promises, make promises and trade promises. Changes in the value of these promises are, therefore, of great consequence. A fall in values can be a danger. For example a fall in values led to the collapse of the saving and loans. A rise in value can be a boon: a rise in values has had much to do with the improvement in the situation of the Commercial Banks in the early 1990s.

Interest rate risk is the exposure of a bank's financial condition to adverse movements in interest rates. Accepting this risk is a normal part of banking and can be an important source of profitability and shareholder value. However, excessive interest rate risk can pose a significant threat to a bank's earnings and capital base. Changes in interest rates affect a bank's earnings by changing its net interest income and the level of other interest -sensitive income and operating expenses. Changes in interest rates also affect the underlying value of the bank's assets, liabilities and off-balance sheet instruments because the present value of future cash flows (and in some cases, the cash flows themselves) changes when interest rates change. Accordingly, an effective risk management process that maintains interest rate risk within prudent levels is essential to the safety and soundness of banks.

**Effects of Interest Rate Risk**

Changes in interest rates can have adverse effects both on a bank's earnings and its economic value. This has given rise to two separate, but complementary, perspectives for assessing a bank's interest rate risk exposure.

**Earning Perspective**

In the earnings perspective, the focus of analysis is the impact of changes in interest rates on accrual or reported earnings. This is the traditional approach to interest rate risk assessment taken by many banks. Variation in earnings is an important focal point for interest rate risk analysis because reduced earnings or outright losses can threaten the financial stability of an institution by undermining its capital adequacy and by reducing market confidence.

In this regard, the component of earnings that has traditionally received the most attention is net interest income (i.e. the difference between total interest income and total interest expense). This focus reflects both the importance of net interest income in banks' overall earnings and its direct and easily understood link to changes in interest rates. However, as banks have expanded increasingly into activities that

generate fee-based and other non-interest income, a broader focus on overall net income-incorporating both interest and non-interest income and expenses has become more common. The non-interest income arising from many activities, such as loan servicing and various assets securitization programs can be highly sensitive to market interest rates. For example, some banks provide the servicing and loan administration function for mortgage loan pools in return for a fee based on the volume of assets it administers. When interest rates fall, the servicing bank may experience a decline in its fee income such as transaction processing fees are becoming more interest rate sensitive. This increased sensitivity has led both bank management and supervisors to take a broader view of the potential effects of changes in market interest rates on bank earnings and to factor these broader effects into their estimated earnings under different interest rate environments.

**Economic Value Perspective**

Variation in market interest rates can also affect the economic value of a bank's assets, liabilities and OBS positions. Thus, the sensitivity of a bank's economic value to fluctuations in interest rates is a particularly important consideration of shareholders, management and supervisors alike. The economic value of an instrument represents an assessment of the present value of its expected net cash flows, discounted to reflect market rates. By extension, the economic value of a bank can be viewed as the present value of bank's expected net cash flows, defined as the expected cash flows on assets minus the expected cash flows on liabilities plus the expected net cash flows on OBS positions. In this sense, the economic value perspective reflects one view of the sensitively of the net worth of the bank to fluctuations in interest rates.

Since the economic value perspective considers the potential impact of interest rate changes on the present value of all future cash flows, it provides a more comprehensive view of the potential long-term effects of changes in interest rates than is offered by the earning perspective. This comprehensive view is important since changes in near-term earning the typical focus of the earnings perspective-may not provide an accurate indication of the impact of interest rate movements on the bank's overall positions.

**Embedded Losses**

The earnings and economic value perspectives discussed so far focus on how future changes in interest rate may affect a bank's financial performance. When evaluating the interest rate risk it is willing and able to assume, a bank should also consider the impact that past interest rates may have on future performance. In particular, instruments that are not market to market may already contain embedded gains or losses due to past ale movements. These gains or losses may be reflected over time in the bank's earnings. For example, a long term fixed rate loan entered into when interest rates were low and refunded more recently with liabilities bearing a higher rate of interest will over its remaining life represent a drain on the bank's resources.

## 2.2 Review of Relevant Studies

### 2.2.1 Review of Unpublished Thesis

It was hardly found a study on *"Effects of Interest Rate on Financial Performance of Commercial Banks in Nepal"* in library of Tribhuvan University. Nevertheless, some extent related studies to this topic have conducted as thesis for the partial fulfillment of M.B.S. and M.B.A in T.U., which are reviewed below.

**(a) Kishor Khatri Chhetri's Study**

**Mr. Kishor Khatri Chhetri (in 1980 A.D.)** had conducted a study titled ***"Interest Rate Structure and its Relation with Deposits, Inflation and Credit in Nepal"***. The objective of his study was to show the relation between interest rate and other economic variable like deposits, inflation, and credits flow. His study concludes that deposit depends upon numerous factors besides income inflation and interest rate. The upward movement in the deposit rates increases the volume of deposit. There is no consolidated type of money and capital markets in Nepal. Finally the relationship between credit flow and loan rate is found out to be negative. If the loan rate of interest is confessional, there will be possibility of raising investment and thus the volume of credit.

**(b) Tanka prasad Upreti's Study**

**Mr. Tanka Prasad Upreti (in 2006 A.D.)** conducted a study on ***"Determinant of Interest Rates in Nepalese Financial Market"*** with the objectives of identifying the interest rate charged and offered by Nepalese financial institution through examination of the relationship between influencing factors and interest rate in 2006.

This study was held by taking three Commercial Banks, one development bank, one finance company and one employee provident fund as sample based on secondary and primary data using different statistical tools. The major finding of this study is that the interest rate was affected by the deposit of financial market, inflation of a country and indirectly affected by political instability and violence of a country. Similarly, interest rates also influence the amount of loan flowing in Market. On the basis of these finding this study has recommended to collect deposits and lending the deposited amount more by determining effective interest rate for productive and non productive sectors differently.

**(c) Firoj Ahamad Khan's Study**

A study entitled ***"Interest Rate Change and its Impact on Deposit and Lending of Commercial Banks in Nepal"*** was conducted by **Mr. Firoj Ahamad Khan (in 2006 A.D.).** His target for conducting this study is to see the impact of interest rate on deposit, lending and inflation by taking five Commercial Banks of Nepal as samples using different financial tools. Similarly the other objective of this study is to identify whether the interest spread is satisfactory or not and to identify whether the theories that are taught in university courses are applicable or not in Nepalese context. He found that most of sample banks average interest rate on both deposit and lending is in decreasing trend with the increase in deposit. It is against the theory i.e. substitution effect. Similarly, Most of samples bank's interest spread was found to be satisfactory during last seven fiscal years. In average he also suggested to increase interest rate in deposit decrease interest rate in lending and decrease the interest rate spread for progressing banking transaction and development of country.

**(d) Anita Shrestha's Study**

**Miss. Anita Shrestha (in 2007 A.D.)**, in his study titled, ***"Financial Performance Analysis of Commercial Banks of Nepal (with special reference to Nepal Investment Bank and NABIL)"*** set up the objectives to analyze the financial strengths and weaknesses of banks using financial tools and statistical tools and also to provide suggestions for its improvement. She found that liquidity ratio, leverage ratio and financial indicators of NABIL were better position than NIBL, and Turn over ratio of NIBL was in better position than NABIL. Profitability position of NIBL is much weaker than NABIL. The study suggested both banks to review their overall capital structure and investment portfolio to make better mix capital structure,

not to limit their activities within the urban areas only and to introduce new banking systems and improve their services.

### 2.2.2 Review of Articles

#### (a) Devlal K.C's article

According to **Mr. Devlal K.C.**, Interest rate is one of the main weapons of monetary policy in his article entitled ***"Interest Rate Policies" published in NRB samachar, April 1997***. He has mentioned the following facts regarding interest rate:

(i) The level of interest depends upon the internal liquidity, situation of external interest rates, change in exchange rate etc. Interest rate also depends upon the change in real national income, return on alternative income, number of financial institutions and the capacity of financial institutions.

(ii) The desire to save money of the general people is closely related with the rate of interest on deposits but the rate of interest on deposits of financial institution itself depends upon the liquidity position of the bank and the amount of loan demanded.

(iii) Low rate of interest adversely affects saving mobilization, flexibility of capital and effective utilization of capital resources while higher interest rate affects investment negatively.

(iv) Less spread shows the ability of financial institutions. But it is necessary to keep appropriate spread level for financial institutions to maintain them qualified in this sector.

#### (b) Dr. Manohar K. Shrestha's article

**Dr. Manohar K. Shrestha's** article entitled ***"Comparative Performance Evaluation of Commercial Banks", Kosh, July- October, 1990*** has expressed his view, that the main point to be considered in interest rate reform is that such a change in interest rate provides a fair distribution of fixed deposits according to their length and amount. This kind of information, if extended to other items would be a good base for analysis of bank's liquidity. Although the belief that high interest rate tends to avoid capital fights to India, Yet the actual fact is that increase in interest rate of government securities has compelled banks to raise interest rate on deposits and there by making lending to productive sector costly. Thus, it is advisable to lower interest on government securities enjoying tax advantage so that there will be better effect on deposit and lending rates.

### 2.2.3 Review of Research Paper

**Peter J. Montiel research paper**

**Mr. Peter J. Montiel** researched in the title ***"Real Exchange Rates, Saving and Growth: Is there a link?" published by World Bank, Development Research Group Macroeconomics and Growth Team in May 2008***. From this research, he found that the real exchange rate-to saving link or the labeled of the capital accumulation channel is conceptually and empirically weak.

The literature on cross-country differences in saving rates has not identified exchange rate policy in general, or a depreciated real exchange rate in particular, as an important factor in explaining such differences. Even in the high-saving, high-growth countries that have provided the main impetus for professional interest in the capital-accumulation channel, explanations for high saving rates have tended to focus on factors such as demographics, financial-sector policies, mandated saving schemes, and fiscal policies, rather than exchange rate policies.

In short, there is as yet little analytical or empirical support for the view that an exchange rate policy geared to the maintenance of a depreciated real exchange rte promotes increased domestic saving, and through more saving, larger rates of domestic capital accumulation and growth. If exchange rate policy indeed has a significant impact on economic growth in developing countries, it is likely to do so through what this paper has labeled the TFP channel, rather than through the capital accumulation channel.

### 2.2.4 Research Gap

Interest rate structure in different sector is made on the basis of the directive and circulars of Nepal Rastra Bank as well as the guidelines and policy of the concerned commercial bank. Commercial Banks should follow these directive and circulars. Furthermore, their own investment guidelines and policies should be in line with NRB directives and circulars. So the up-to-date data study over the change of time frame is major concern for the researcher and concerned organization as well as industry as a whole. This study covers the more recent financial data, NRB circulars and guidelines than that of studies previously conducted.

The optimum diversification of loan and advances reduced the default risk of credit. It is the major concern of stakeholders to know the relation between interest rate and advance amount of the bank.

No case study has not yet been shown about the profitability ratio analysis on this topic only the relationship between interest rate with deposit amount, loan and advance amount and investment amount are shown. From that it was unclear about the change of profitability with interest rate structure fluctuation. Hence, total interest expenses to total interest income ratio, total interest expenses to total credit ratio is calculated. Test of hypothesis has also been done to check the significant of used variables.

So, this study will be fruitful to those interested persons, parties, scholars, teachers businessman, civil society and government for academically as well as policy perspectives.

# CHAPTER - THREE

## RESEARCH METHODOLOGY

This chapter deals with research methodology used in this study. A research methodology helps to solve the research problem in systematic way. This chapter has been designed and developed as a guideline or a plan for the achievement of objectives set and developed for the purpose of this study in the first chapter. Research methodology facilitates the reliability and validity of research work. The basic objective of this chapter is to guide chapter four for data presentation, descriptive and empirical analysis of interest rate and its effect on financial performance of Commercial Banks in Nepal. So, suitable research methodology as demanded by the study has been followed.

### 3.1 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. Research design is a blue print for the collection measurement and analysis of data. It presents a series of guideposts to enable the researcher to progress in the right direction in order to achieve the goal. It is the arrangement of condition and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. This is an ex-post facto or historical research design. Research design is more analytical and less descriptive. The relevant and needed data has been collected from various publications of various Commercial Banks and publications of Nepal Rastra Bank.

### 3.2 Population and Sample of the study

The term ’population’ or universe for research means aggregate or totality of objects under the study. Sampling refers to the method of selecting a sample from the universe or population. A subset of the universe selected for the study is known as sample. Here the population or universe of the study comprises of all 28 Commercial Banks within the kingdom of Nepal. As the study of whole population makes the study more complicated, only first established private sector’s 5 Commercial Banks are taken as sample for the study convenience. The number of units in the sample is called sample size. In this study the sample size are selected on the basis of bank’s

establishment date, which is also known as the non-probability sampling (non-random sampling or unbiased sampling).

**Population**

1) Nepal Bank Limited
2) Rastriya Banijya Bank
3) Agricultural Development Bank
4) Standard Chartered Bank Nepal Limited
5) Lumbini Bank Limited
6) Nabil Bank Limited
7) Himalayan Bank Limited
8) Bank of Kathmandu Limited
9) Bank of Asia Nepal Limited
10) Nepal Bangladesh Bank Limited
11) Nepal SBI Bank Limited
12) Machhapuchhre Bank Limited
13) Prime Commercial Bank Limited
14) Citizen Bank Limited
15) Janata Bank Limited
16) Nepal Investment Bank Limited
17) Mega Bank Limited
18) Kumari Bank Limited
19) Laxmi Bank Limited
20) Global Bank Limited
21) NIC Bank Limited
22) Sunrise Bank Limited
23) KIST Bank Limited
24) NCC Bank Limited
25) NMB Bank Limited
26) Siddhartha Bank Limited
27) Everest Bank Limited
28) Development & Credit bank Limited

**Sample**

1) Nabil Bank Limited (NABIL)
2) Nepal Investment Bank Limited (NIBL)
3) Standard Chartered Bank Nepal Limited (SCBNL)
4) Himalayan Bank Limited (HBL)
5) Nepal SBI Bank Limited (NSBIBL)

### 3.3 Sources of Data and Collection

Data could be collected by primary and secondary methods. As primary data is very difficult to generate and also it makes the study more cumbersome, more secondary data has been used in this study than primary data. The primary data provide a accurate and uniform information in the study. So, this study is based on the secondary sources of data as well as the primary source of data to fulfill the above-mentioned objectives. These secondary data are collected mainly from published sources like publication of Commercial Banks, annual reports of Commercial Banks, bulletins published by NRB, website of Commercial Banks and newspaper. The primary data has been used in this study. The primary data are collected by questionnaires method.

### 3.4 Data Processing and Presentation Techniques

Data obtained from various sources cannot be directly used in their original form, as they are raw data. It needs to be processed in well manner so that it makes easier to understand and helps in conducting the study. After well processing of such raw data then only analysis part can be completed and effective conclusion can be drawn from the study.

As the presentation of data means to keep raw data into understandable form by editing, rechecking and using various tools such as tables, charts, figures and trend lines. In this study also data are presented using all above mention tools so as to make understand the analysis part in proper and easier way.

### 3.5 Necessary Tools and Techniques

In order to get the concrete result from the research, data are analyzed with different types of necessary tools. As per the topic requirement, this study used the financial and statistical tools to obtain the above set up objectives.

#### 3.5.1 Financial Tools and Techniques

In order to analyze various data, different financial tools have been used with the help of ratio analysis one can easily understand the effect of interest rate on financial performance of Commercial Banks. So, the following ratios are used to analyze the data.

### (a) Fund Management Ratios

Fund management ratios are also known as turn over ratios or asset management ratios or activity ratios or efficiency ratios. Turnover ratios are employed to evaluate the efficiency of the firm that manages and utilize its assets. They measure the effectiveness of the investments that are used to produce profit. Unlike other manufacturing concerns the bank produces loans & advances and investments. So, it sells the same. In other words, the financial institution run a money business, it buys money at lower cost and sells money at higher cost. High ratio depicts the managerial efficiency in utilizing the resources. It shows the sound profitability position of the bank. Low ratio is the result of insufficient utilization of resources. So, these ratios are used to evaluate managerial efficiency and proper utilization of assets. The following turnover ratios have been tested in this study.

### (i) Total Loan and Advances to Total Deposit Ratio

Total loan and advances to total deposit ratio is the ratio that actually measures the extent to which the banks are successful to mobilize the total deposits on loan and advances this ratio is calculated by dividing total loans and advances by total deposits. The ratio is computed as follows.

$$\text{Total Loan and Advances to total Deposit Ratio} = \frac{\text{Total Loans and Advances}}{\text{Total Deposits}} \times 100$$

A high ratio of Loan and Advances shows the better mobilization of collected deposits in the fields of loans and advances.

### (ii) Total Investment to Total Deposit ratio

Total investment to total deposit ratio is used to measure the extent to which banks are successful in mobilizing the total deposits on investment. Bank cannot utilize whole of its fund raised through deposit and borrowing into deposit by investing its bank deposit by investing in different securities issued by the government and other financial or non financial companies. Basically Commercial Banks are investing their funds in government securities such as Treasury bill, development bonds, national saving and share & debentures of other company. But this study is limited to government bonds and national saving certificate. The ratio is computed as follows.

$$\text{Total Investment to Total Deposit ratio} = \frac{\text{Total Investment}}{\text{Total Deposit}} \times 100$$

In general high ratio is the indicator of higher success to mobilize the bank fund as

investment and vice-versa. In other word, high ratio reveals the managerial efficiency regarding the utilization of deposits. Low ratio is the result of less efficiency in use of funds.

### (iii) Total Credit to Total Deposit Ratio

Total credit here denotes the total loans and advances plus total investment. Total credit to total deposit ratio measures the extent to which the bank is successful in mobilizing its fund as credit by total deposits. It can be computed as,

$$\text{Total Credit to Total Deposit Ratio} = \frac{\text{Total Credit}}{\text{Total Deposit}} \times 100$$

Higher the ratio indicates the better performance of bank in mobilizing its fund but very high ratio show poor liquidity position and risk in credit. On contrary, too low ratio may be the cause of idle cash or use of fund less productive sector.

## (b) Profitability Ratios

Profitability ratios are calculated to measure the earning performance and operational efficiency. Profitability also indicates public acceptance of the product and shows that a firm can produce competitively. It is directly related to the earning of the banks for a certain period.

"A bank should be able to produce adequate profit on each rupee of investment. If the investments do not generate sufficient profits, it would be very difficult for the banks to cover operating expenses and interest changes. The profitability of the bank should also be evaluated in terms of its investment in assets and in terms of capital, contributed by creditors. If the bank is unable to earn satisfactory return of investment its survival is threatened" ***(Pandey, 1993 : 119)***.

The following profitability ratios have been tested in this study.

### (i) Total Interest Expenses to Total Interest Income Ratio

The total interest expenses to total interest income ratio measures how much interest expenses have been made in relation to interest income received. Banks pay interest to their depositors on various deposits such as current deposit, saving deposit, fixed deposit, call deposit and other deposits. Total interest expenses refer to total interest amount paid on deposit liabilities. They should mobilize deposits in such a way that they are able to pay interest to their depositors and also to earn

profit. Interest is the major source of earning for Commercial Banks. Banks receive interest from loans and advances, investment (i.e. government bond, foreign bonds, NRB bonds, and debenture & bonds), agency balance, call deposit, and others. Total interest income refers to total interest amount earned from these sources. It can be computed as follows.

$$\text{Total Interest Expenses to Total Interest Income Ratio} = \frac{\text{Total Interest Expenses}}{\text{Total Interest Income}} \times 100$$

Lower ratio is favorable from point of view of profitability.

### (ii) Total Interest Expenses to Total Deposit Ratio

The total interest expenses to total deposit ratio measures how much interest expenses have been made in relation to total deposit collected. Here, the total interest expenses are the sum of interest paid by the bank on different type of collected fund in terms of deposit. The total deposit comprises current deposit, saving deposit, fixed deposit, call deposit and others deposit. This ratio can be calculated as follows.

$$\text{Total Interest Expenses to Total Deposit Ratio} = \frac{\text{Total Interest Expenses}}{\text{Total Deposit}} \times 100$$

Lower ratio is favorable from point of view of profitability but it may also indicate the deposit collected fund of bank is lower.

### (iii) Total Interest Income to Total Credit Ratio

The interest is the major source of earning and it holds large proportion in total operating income of the bank. The total interest income to total investment ratio measures interest earned from total investments of the bank. Here, the total interest earned is the sum of interest received by the bank from loans and advances, money at call and short notice, investment in government securities. The total investment comprises money at call and short notice, loan and advances including bills purchased and discounted investment in government securities and others. This ratio can be calculated as follows.

$$\text{Total Interest Income to Total Credit Ratio} = \frac{\text{Total Interest Income}}{\text{Total Credit}} \times 100$$

High ratio indicates the proper utilization of banks' collected funds for income generation purpose. Low ratio represents unsatisfactory performance.

### 3.5.2 Statistical Tools and Techniques

The statistical tools have been used in this study to achieve set up objective are as follows.

**(a) Arithmetic Mean**

The arithmetic mean is the sum of all the observations divided by the number of observation. In such a case all the items are equally important. Simple arithmetic mean is used in this study as per the necessity for analysis. It is computed by using following formula.

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

Where,

$\sum X$ = Sum of all value of the variable 'X'

N = Number of Observation

X = Variables Involved

**(b) Standard Deviation**

"The standard deviation is the best tools to measure the fluctuation in any data. It usually denoted by the Greek letter o (small sigma). The standard deviation is defined as the positive square root of the arithmetic mean of square deviation from their arithmetic mean of a set of values. It is also known as 'Root Mean-Square Deviation"' ***(Pant & Chaudhary, 2055 : 196)***.

Standard deviation, in this study, has been used to measure the degree of fluctuation of interest rate and that of other variables as per the necessity of the analysis. It is computed by using following formula.

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

Greater the magnitude of standard deviation higher will be the fluctuation in data and vice versa.

**(c) Coefficient of Correlation**

"Correlation Coefficient is the statistical tool, which describe the degree to which one variable is linearly related to other variables. Two or more variables are said to be correlated, if change in the value of one variable appears to be related or linked with change in the other variables. Correlation is an analysis of the covariance between

two or more variables and correlation analysis deals to determine the degree of relationship between the two variables. It refers the closeness of the relationship between two or more variables. Correlation says just degree of relationship between two or more variables. It does not tell us anything about cause and effect relationship" ***(Sharma & Chaudhary, 2060 : 405)***.

Simple Correlation Coefficient can be computed by following formula.

Simple Correlation Coefficient (r) = $$\frac{n\sum xy - \left(\sum x\right)\left(\sum y\right)}{\sqrt{n\sum x^2 - \left(\sum x\right)^2}\sqrt{n\sum y^2 - \left(\sum y\right)^2}}$$

Interpretation of Correlation Coefficient

i) It lies always between + 1 and - 1.
ii) When r = + 1, there is perfect positive correlation.
iii) When r = -1, there is perfect negative correlation.
iv) When r = 0, there is no correlation.
v) When r lies between 0.7 to 0.999(-0.7 to - 0.999), there is a high degree of positive (or negative) correlation.
vi) When r lies between 0.5 to 0.699, there is a moderate degree of correlation.
vii) When r is less than 0.5, there is low degree of correlation ***(Sharma & Chaudhary, 2060: 412)***.

Simple Correlation between deposit rate and deposit amount, loans & advance rate and loans & advance amount, investment rate and investment amount and deposit rate and loans & advance rate are examined in this study.

### (d) Coefficient of Determination ($r^2$)

The square root of simple correlation coefficient is called coefficient of determination. It measures the percentage of total variation in dependent variable is explained by independent variable.

### (e) T- test for Significance of Correlation Coefficient

T-distribution is commonly called students t -distribution and is used when the sample size is less than 30, given a random sample from a bivariate normal population when hypothesis is tested that the correlation coefficient of population is zero, i.e. the variables in population are uncorrelated, the following t- test is applied, which is applied in this study.

$$t = \frac{r}{\sqrt{1-r^2}} \times \sqrt{n-2} \approx t_{n-2}$$

Here, 't' follows t-distribution with (n-2) degree of freedom ( d.f. ), 'n' being the number of sample. If the calculated value of t exceeds tabulated value of t for (n-2) d.f. at 5% level of significance, we say the value of 'r' is significant at 5 percent level. If '$t_{cal}$' < '$t_{tab}$' the data are consistent with the hypothesis of an uncorrelated population.

### 3.5.3 Variables

Variables are the characteristics of person, things and groups, program etc. A variable is, thus, a symbol to which numerals or values are assigned. Deposit rate, lending rate, investment rate, deposit amount, lending amount and investment amount etc. are variables of this study.

**Dependent Variables**

The variable that values dependent upon the other variables is called dependent variables. The researcher's purpose is to study analyze and predict the variability in dependent variable. Here, deposit amount, loan & advance amount and investment amount are the dependent variables. In this study, profits of bank are also dependent on interest expenses and income.

**Independent Variable**

The variable that is not influenced by any other variables is called independent variable. Any change in the independent variable, either positive or negative leads to change in dependent variable. Here, interest rate on deposit, loan & advance rate and investment rate are the independent variable, while calculating correlation coefficient, coefficient of determinants and t-statistics in this study. Interest rate is also affected by other factors but it is taken as independent variable in data calculation.

# CHAPTER - FOUR
# DATA PRESENTATION AND ANALYSIS

The most important inputs to fulfill the objective set in chapter one is past data. Analysis and interpretation are the central steps in the research process that assist researcher to present the relevant past data and required information effectively and systematic way to obtain the set objectives.

This chapter is categorized into three parts viz. presentation, analysis and interpretation to make the study clear, effective, systematic, result-oriented and easily understandable. Since, the analysis is mainly based on secondary data. Firstly, the data are presented in tabular and chart form. Then, the data are analyzed using various statistical tools and financial tools as mentioned in chapter three. Finally the results are interpreted. Presentation, analysis and interpretation of sample banks are made individually one after another to show effects of interest rate on financial performance of commercial bank in Nepal.

## 4.1 Majors Qualitative Factors in Determining Interest Rate

Interest rates are prices for loanable funds - prices of funds invested, lent out or borrowed for various periods of time. The supplier or lender of funds normally wants to earn an income and the user or borrower will generally be prepared to pay for the right to use the accumulated funds.

The nominal or market interest rate is determined by the supply and the demand for funds. The supply of funds depends on the preference of society for current versus future consumption. Societies that are prepared to postpone consumption to a later date and that prefer to accumulate wealth now will set aside a higher portion of their current income for wealth accumulation than societies that have a stronger preference to spend now. The lower the preference for current consumption, the stronger the incentive will be to accumulate funds. The demand for funds depends on the opportunities available for using borrowed funds efficiently and profitably. The more profitable the usage of funds, the greater the demand for funds, similar to the determination of the prices of goods and services, the prices of funds, i.e. the

general level of interest rates, are determined by the demand for and the supply of funds. If the demand for funds increases and/or the supply decline, the price of funds will rise, i.e. interest rates will move higher. If the demand for funds declines and/or the supply increases, interest rates will move lower. At the same time, the interest rate level and expected changes in that level will also affect the supply of and demand for funds. The period to which the interest rate relates is in the future, because funds are provided to borrowers for future repayment. The future can be foreseen only imperfectly by both lenders and borrowers of funds. Uncertainty about the future will consequently play a prominent part in the process of interest rate determination. Among the more prominent/well known types of uncertainty likely to have an impact on the level of interest rates are the following:

- The term of the period over which funds are made available. The longer the term of the loan, the greater the uncertainty that circumstances may change and, therefore, higher the compensation demanded by the lenders of funds. Thus, the longer the term of a loan, the higher the interest rate charged. Other factors may at times, however, lead to higher short-term than long-term interest rates.
- The lender of funds will also be concerned about the ability of the borrower of funds to repay the loan. The higher the risk of default by the user or the lower his/her credit rating, the higher the interest rate asked by the supplier of funds.
- If inflation is expected to be high, the buying power of borrowed funds declines rapidly. The supplier or lender of funds will seek protection against the erosive power of inflation by demanding a higher interest rate. Therefore, higher expected inflation will bring about higher interest rates. If expected inflation is not properly accounted for in interest rates, lenders of funds will reduce the portion of their income that they are prepared to lend out. By contrast, the demand for borrowed funds will be strong under such circumstances, as potential buyers will borrow more money in order to buy ahead of the expected price increases. The interest rate is the price, which equates the supply of funds with the demand for funds. If there is an imbalance in the market for funds, as it is likely to occur when

expected inflation is not fully reflected in the level of interest rates, market interest rates will have to adjust in such a way that the total demand for and supply of funds will be equal over time. If the supply of funds is inadequate relative to demand, the interest rate has to rise to encourage a larger supply of funds to match the demand for funds.

## 4.2 Presentation and Analysis of Secondary Data

In this part, the secondary type of data is used to analyze the effects of interest rate on financial performance of Commercial Banks in Nepal which are presented as follows:

### 4.2.1 Interest Rate Structure of Nepalese Commercial Banks

Interest rate is considered as a price or cost in the act of saving, lending and investment. It is a reward for risk taking, reward for inconvenience and reward for management. The market interest rate is determined by the real risk-free rate, inflation rate, default risk premium, liquidity risk premium and maturity risk premium and maturity risk premium. The interest rate structure and level of interest rate is depended on the economics and risk factors. The interest rate regime in Nepalese Perspective change from rigid control and monopoly of NRB to complete freedom to have competitive interest rate with the hope of maintaining efficiency in financial system an important part of government's financial liberalization policy. Due to this the interest rate structure of Nepalese Commercial Banks are different in bank to bank at different time period. The analysis of interest rate structure on deposit, Loan and advance and investment of Nepalese Commercial Banks are shown as follows:

#### 4.2.1.1 Interest Rate Structure of NABIL

The NABIL collects fund from different account such as fixed account, saving account, current account and other account. These collected funds are used in different sectors. The interest rate structures on deposit, loan and advances and investment of NABIL are shown as follows:

**Table No. 4.1**
**Interest Rate Structure on Deposit of NABIL**
**As on Mid-July**

**(In %)**

| Deposit | Year | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Saving | 2.5 | 2 | 2 | 2 | 2 |
| Special Saving | - | 3.5 | 3.5 | 3.5 | 4 |
| Fixed | | | | | |
| 7 days | - | - | - | - | - |
| 14 days | 2.5 | 2.5 | 1.75 | 3 | - |
| 1 month | 3 | 3 | 2 | 3.5 | 3.5 |
| 2 month | - | - | - | - | - |
| 3 month | 3.25 | 3.25 | 2.75 | 6.75 | 4.5 |
| 6 month | 3.5 | 3.5 | 3 | 6.75 | 5.5 |
| 1 year | 4 | 4 | 3.5 | 5 | 7.5 |
| 2 year/above | 3.625 | 4.125 | 4 | 6.75 | 8.25 |
| Mean $(\overline{X})$ = Average of each Deposits | 3.196 | 3.234 | 2.813 | 4.656 | 5.036 |
| Average of Average Deposit | 3.787 | | | | |
| Standard Deviation of Average Deposit $(\sigma)$ | 0.89 | | | | |

*Source : Various banking and financial statistics published by NRB and Annex - I*

Table no. 4.1 shows the average interest rate on all deposits and its standard deviation of NABIL. According to this table, NABIL has decreased and increased trend from mid-July 2005 to 2009. It has slightly increased from 3.196 percent in 2005 to 3.234 percent in 2006 and highly decreased to 2.813 percent in 2007. Then it increased in mid-July 2008 to 2009 to 4.656 and 5.036 respectively. Standard deviation 0.89 means that the scatteredness among deposit rate within these five years time period is 0.89 percent.

**Table No. 4.2**

**Interest Rate Structure on Loans and Advances of NABIL**

**As on Mid-July**

**(In %)**

| Deposit | Year | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Overdraft | - | - | - | - | - |
| Export Credit | 7.50 | 10 | 8.745 | 8.75 | 11 |
| Import L/C | 9.75 | 9.75 | 8.75 | 8.75 | 11 |
| Against FDR | 7 | 7 | 7 | 7 | 7 |
| Against HMG Bond | 7.25 | 7.5 | 7.5 | 7.25 | 7.25 |
| Against BG/CG | 9 | 9 | 7.5 | 7.5 | 10 |
| Against other Guarantee | 10 | 10 | 8.5 | 8.5 | - |
| Industrial Loan | - | - | - | - | - |
| Commercial Loan | - | - | - | - | - |
| Priority Sector | 11.5 | 11.5 | 10.25 | 10.25 | - |
| Poorer Sector | 7.5 | 7.5 | 6.75 | 7 | 8 |
| Term Loan | 12 | 12 | 10.5 | 10.5 | 11.5 |
| Working Capital | 11 | 11 | 9.75 | 9.75 | 11 |
| Hire Purchase | 9.75 | 9.5 | 9.25 | 9.75 | - |
| Others | 10 | 10 | 9.25 | 9.5 | 11.25 |
| Mean $(\bar{X})$ = Average of each Deposits | 9.35 | 9.56 | 8.645 | 8.708 | 7.333 |
| Average of Average Deposits | 8.71 | | | | |
| Standard Deviation of Average Deposit $(\sigma)$ | 0.78 | | | | |

*Source : Various banking and financial statistics published by NRB and Annex - I*

Table no. 4.2 depicts that the average interest rate on loan and advances and standard deviation of NABIL. The average interest rate on loan and advances of NABIL in mid-July 2005 to 2009 are 9.35 percent, 9.56 percent, 8.645 percent, 8.708 percent and 7.333 percent respectively. The standard deviation of NABIL 0.78 shows that scatteredness among lending rates from the average of all lending rates within these five years time period is 0.78 percent.

**Table No. 4.3**

**Interest Rate Structure on Investment of Nepalese Commercial Banks as on Mid July**

**(In %)**

| Sectors\Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Investment: | | | | | |
| A. Government Securities | 3.55 | 3.95 | 1.47 | 3.94 | 3.25 |
| - Treasury bills (91 days) | 10.625 | 10 | 9.75 | 9.75 | 7.25 |
| - National saving certificate | 5.50 | 5.50 | 5.50 | 4.875 | 4.875 |
| - Development bonds | | | | | |
| B. Share & Debenture | - | - | - | - | - |
| C. NRB Bond | - | - | - | - | - |
| Mean ( $\overline{X}$ ) = Average of each Investments | 6.558 | 6.483 | 5.573 | 6.397 | 5.125 |
| Average of Average Investments | 6.02 | | | | |
| Standard Deviation of Average Investment ($\sigma$) | 0.57 | | | | |

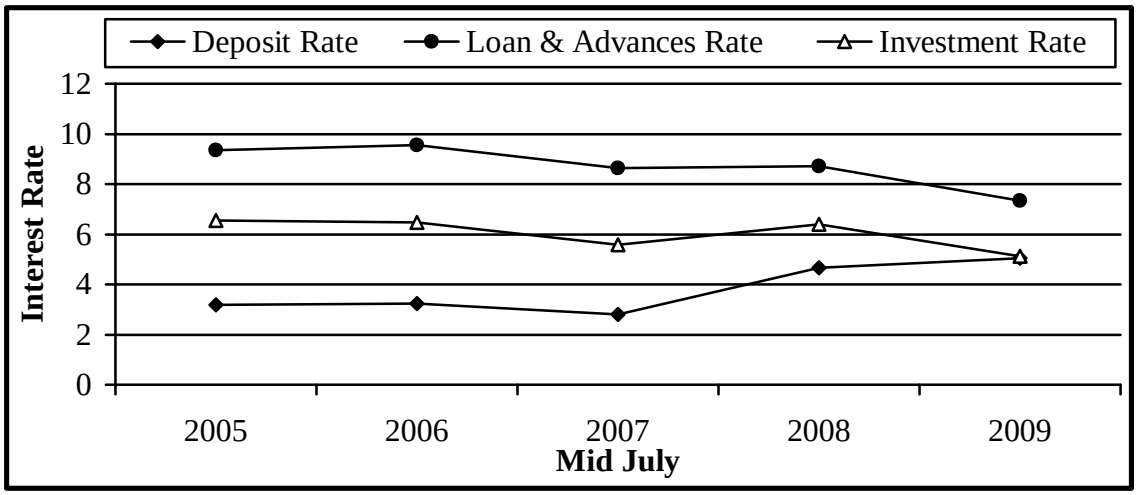
*Source : Nepal Rastra Bank Quarterly Economic Mid July 2009 and Annex - I*

Note: Since, the interest rate structure on investment is provided by NRB to all the interested parties. The analysis of interest rate on investment for other banks is also same. So, this table will not be shown in case of other Commercial Banks analysis.

The above reveals the average interest rate on investment for all interested parties. The average interest rates from Mid July 2005 to 2009 are 6.558 percent, 6.483 percent 5.573 percent, 6.397 percent and 5.125 percent respectively. The standard deviation of 0.57 means that the scatteredness among investment rate within these five years time period is 0.57 percent.

**Figure No. 4.1**

**Interest Rate Structure of NABIL**




*Source : Table No. 4.1, 4.2 &4.3*

The above figure represents the trend line of deposit rate, loan and advances rate and investment rate of NABIL. There is positive relationship between the deposit rate and investment rate. Both interest rates slightly decrease from Mid July 2006. But the interest rate of loan and advance rate is slightly decreasing from Mid July 2005 to 2007. From 2007 it is started to increase up to 2009.

#### 4.2.1.2 Interest Rate Structure of NIBL

The NIBL collected funds from different account such as fixed account, saving account current account and other account. These collected funds are used in different sectors. The interest rate structures on deposit and loan and advances of NIBL are shown as follows. The interest rate structure on investment of NIBL is same as shown in above table.

**Table No. 4.4**
**Interest Rate Structure on Deposit of NIBL**
**As on Mid July**

**(In %)**

| Deposit Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Saving | 2.625 | 2.50 | 2.50 | 2.50 | 2.5 |
| Special Saving | - | 2.75 | 2.75 | 2.75 | 2.75 |
| Fixed | - | - | - | - | - |
| 7 days | - | - | - | - | - |
| 14 days | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| 1 months | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 |
| 2 months | - | - | - | - | - |
| 3 months | 2.625 | 2.625 | 2.625 | 2.75 | 2.625 |
| 6 months | 2.875 | 2.875 | 2.875 | 3.00 | 2.875 |
| 1 year | 3.625 | 3.625 | 3.625 | 5.5 | 5.25 |
| 2 year/above | 3.875 | 3.875 | 3.875 | 5.75 | 5.75 |
| Mean ($\overline{X}$) Average of each deposits | 2.661 | 2.656 | 2.656 | 3.156 | 3.093 |
| Average of Average Deposits | 2.84 | | | | |
| Standard Deviation of Average Deposit ($\sigma$) | 0.23 | | | | |

*Source : Various banking and financial statistics published by NRB and Annex - I*

The above table shows that the average interest rate on deposit of NIBL is in decreasing and increasing trend. It is constant to 2.656 in 2006 to 2007, then after it is increasing 3.156 percent in Mid July 2008 and 3.093 percent in 2009. The standard deviation of NIBL indicates that the dispersion among the deposit rates within these five periods is 0.23 percent.

**Table No. 4.5**

**Interest Rate Structure on Loans and Advances of NIBL**

**as on Mid July**

**(In %)**

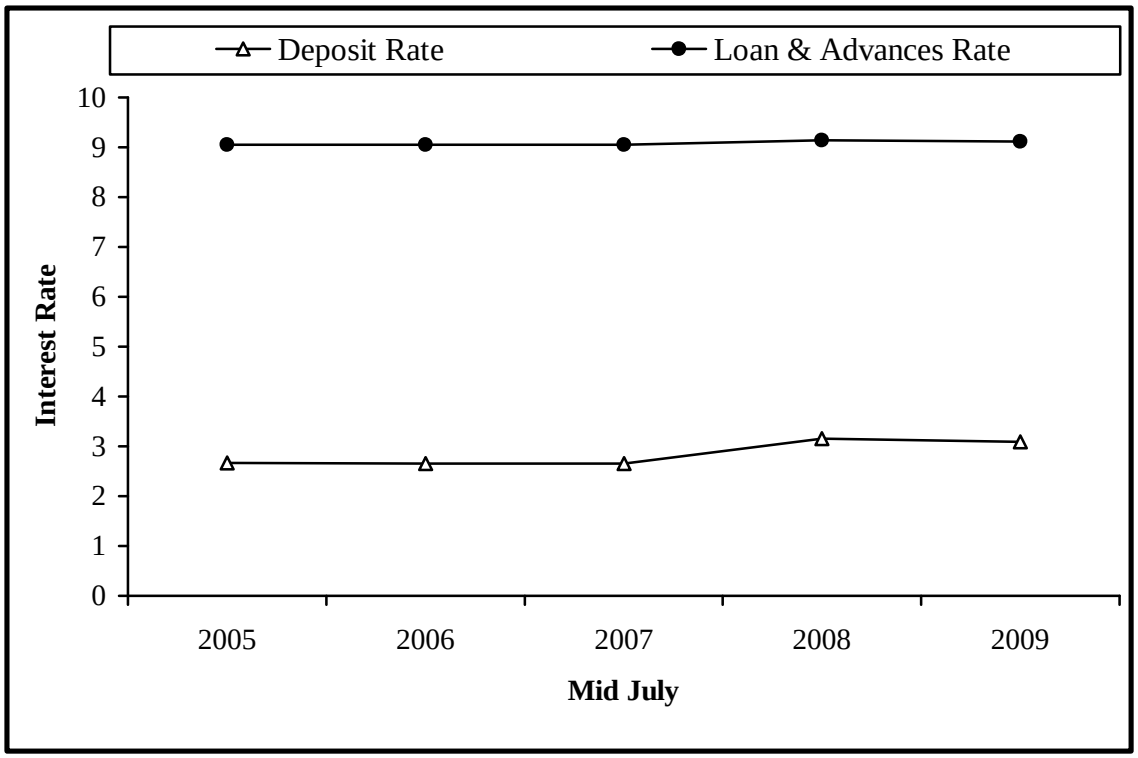
| Deposit | Year | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Overdraft | 10.875 | 10.875 | 10.875 | 10.875 | 10.875 |
| Export Credit | 9.375 | 9.375 | 9.375 | 9.375 | 9.375 |
| Import L/C | - | - | - | - | - |
| Against FDR | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| Against HMG Bond | 7 | 7 | 7 | 7 | 7 |
| Against BG/CG | 8 | 8 | 8 | 8 | 8 |
| Against other Guarantee | - | - | - | - | - |
| Industrial Loan | - | - | - | - | - |
| Commercial Loan | - | - | - | - | - |
| Priority Sector | 8 | 8 | 8 | - | 8 |
| Poorer Sector | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Term Loan | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 |
| Working Capital | 11 | 11 | 11 | 10.875 | 10.875 |
| Hire Purchase | 10 | 10 | 10 | 10 | 10 |
| Others | 9.75 | 9.75 | 9.75 | 9.75 | 9.5 |
| Mean $(\overline{X})$ = Average of Each Loan & Advance | 9.045 | 9.045 | 9.045 | 9.1375 | 9.1125 |
| Standard Deviation of Average Loan & Advance $(\sigma)$ | 0.04 | | | | |

*Source : Various banking and financial statistics published by NRB and Annex - I*

From the above table, it is clear that average interest rate on loans and advances of NIBL is also increasing trend. It increases from 9.045 percent to 9.1375 from Mid July 2005 to 2008. It is constant to 9.045 percent from Mid July 2005 to 2007 and it is decreases from 9.1375 percent to 9.1125 in Mid July 2009. The standard deviation of 0.04 indicates that the dispersion among the lending rates within these five years time period is 0.04 percent.

**Figure No. 4.2**

**Interest Rate Structure of NIBL**




*Source : Table No.4.4 & 4.5*

The above figure shows the positive relationship between deposit rate and loan & advances rate. The deposit rate trend rate is being stable in Mid July 2005 and 2006. But, it is started to decrease from Mid July 2008 to 2009. The loan and advance rate sable from Mid July 2005 to 2007 and slightly increase in 2008 and 2009. The trend line of investment on NIBL is same as explain in figure no. 4.1.

#### 4.2.1.3 Interest Rate Structure of SCBNL

The SCBNL collects fund from different account such as fixed account, saving account, current account and other account. These collected funds are used in different sectors. The interest rate structures on deposit and loan and advances of SCBNL are shows as follows. The interest rate structure on investment of SCBNL is same.

**Table No. 4.6**

**Interest Rate Structure on Deposit of SCBNL**

**as on Mid July**

**(In %)**

| Deposit Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Saving | 1.75 | 2 | 2 | 2 | 2 |
| Special Saving | - | - | - | - | 2.75 |
| Fixed | - | - | - | - | - |
| 7 days | - | - | - | - | - |
| 14 days | 1 | 1 | 1 | 1 | 1 |
| 1 months | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| 2 months | 1.50 | 150 | 150 | 150 | 1.50 |
| 3 months | 1.50 | 150 | 150 | 150 | 1.50 |
| 6 months | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 |
| 1 year | 2.25 | 2.25 | 2.25 | 2.50 | 2.5 |
| 2 year/above | 2.50 | 2.50 | 2.50 | 2.875 | 2.875 |
| Mean ($\overline{X}$) Average of Each deposits | 1.719 | 1.719 | 1.719 | 1.828 | 1.93 |
| Standard Deviation of Average Deposit ($\sigma$) | 0.09 | | | | |

*Source : Various Banking and Financial Statistics Published by NRB in Mid July and Annex-I*

Above table depicts the average interest rate on deposit of SCBNL is increasing from 1.719 in Mid July 2005 to 1.75 percent in Mid July 2006. It is remain constant to 1.75 percent in Mid July 2006 and 2007. Then, it is again slightly increase in Mid July 2008 and 2009 in 1.828 and 1.93 respectively. The standard deviation 0.09 refers to dispersion among the interest rate on deposit with in this five Mid July is 0.09 percent.

**Table No. 4.7**

**Interest Rate Structure on Loans & Advances of SCBNL**

**as on Mid July**

**(In %)**

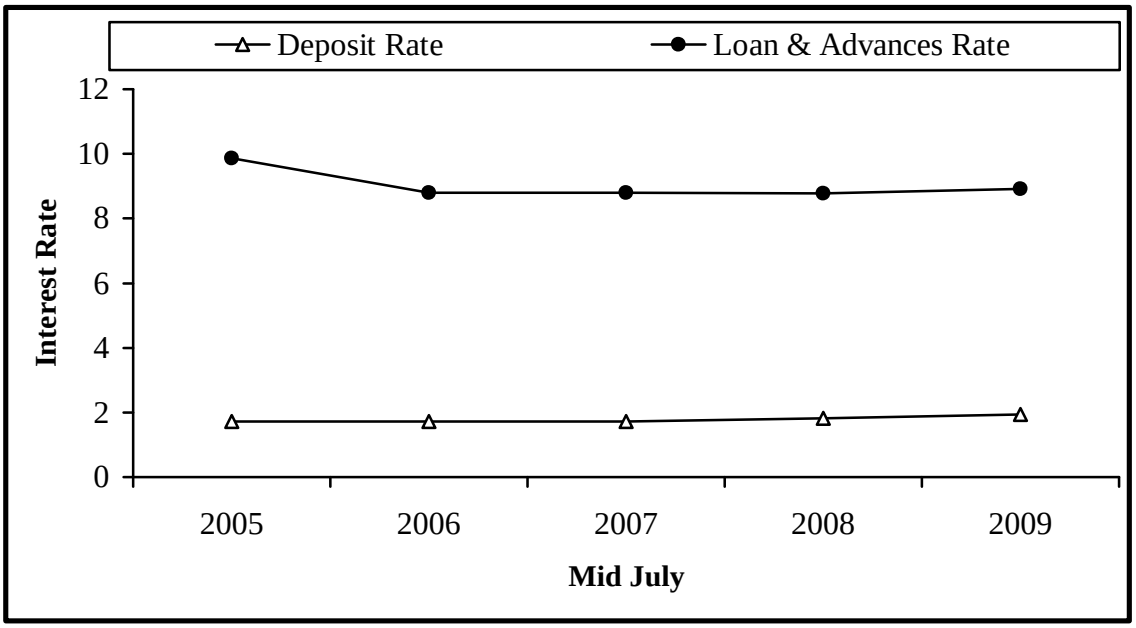
| Deposit | Year | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Overdraft | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Export Credit | 9.25 | 9 | 9 | 8.5 | 8.25 |
| Import L/C | 9.75 | 8.25 | 8.25 | 8.25 | 8.50 |
| Against FDR | 5 | 5 | 5 | 5 | 5 |
| Against HMG Bond | 8.5 | 7.25 | 7.25 | 7.25 | 7.50 |
| Against BG/CG | 9.75 | 9 | 9 | 9 | 8.5 |
| Against other Guarantee | 12.25 | 10.5 | 10.5 | 10.5 | 10.5 |
| Industrial Loan | 11 | 10.75 | 10.75 | 10.75 | 10.75 |
| Commercial Loan | 11.5 | 11.25 | 11.25 | 11.25 | 11.25 |
| Priority Sector | - | - | - | - | - |
| Poorer Sector | 10 | 7.5 | 7.5 | 7.5 | 7.5 |
| Term Loan | 12.75 | 10.75 | 10.75 | 10.75 | 10.75 |
| Working Capital | 12.25 | 9.5 | 9.5 | 9.5 | 9.5 |
| Hire Purchase | 9 | 8.25 | 8.25 | 8.25 | - |
| Others | 10.5 | 9.75 | 9.75 | 9.75 | 11.5 |
| Mean $(\overline{X})$ = Average of all loan and advance | 9.857 | 8.805 | 8.805 | 8.768 | 8.923 |
| Standard Deviation of Average loan and advance $(\sigma)$ | 0.42 | | | | |

*Source : Various Banking and Financial Statistics Published by NRB in Mid July and Annex-I*

From the above table, it seems that the average credit rate of SCBNL is also in decreasing trend. It decreases gradually from 9.857 in Mid July 2005 to 8.768 in Mid July 2008. It slightly increased to 8.923 in Mid July 2009. The standard deviation of 0.42 refers to the dispersion among the average loan rate within above five period is 0.42 percent.

**Figure No. 4.3**

**Interest Rate Structure of SCBNL**




*Source : Table No. 4.6 & 4.7*

The above figure shows that the deposit rate trend of SCBNL is almost constant from Mid July 2005 to 2009. The loan and advance rate trend of SCBNL is decreasing slightly. But in Mid July 2006 and 2007, it is constant. It explains the positive relationship between deposit rate and loans and advances rate. The trend line of investment of SCBNL is same as explained in figure no. 4.1.

#### 4.2.1.4 Interest Rate Structure of HBL

The HBL collected fund from different account such as fixed account, saving account, current account and other account. These collected funds are used in different sectors. The interest rate structures on deposit and loan advances of HBL are shown as follows. The interest rate structure on investment of HBL is same as shown in above table no. 4.3.

**Table No. 4.8**

**Interest Rate Structure on Deposit of HBL**

**as on Mid July**

**(In %)**

| Deposit Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Saving | 3.375 | 2 | 2 | 2 | 2.25 |
| Special Saving | | 2.75 | 2.75 | 3.375 | 4.125 |
| Fixed | | | | | |
| 7 days | | | | | |
| 14 days | 1.75 | 1.75 | 1.75 | 2 | 2.5 |
| 1 months | 2 | 2 | 2 | 2.25 | 3.25 |
| 2 months | - | - | - | | |
| 3 months | 2.5 | 2.50 | 2.50 | 2.50 | 3.75 |
| 6 months | 3 | 3 | 3 | 3.25 | 4.5 |
| 1 year | 3.75 | 3.75 | 3.75 | 5 | 6.5 |
| 2 year/above | 3.75 | 3.75 | 3.75 | 5.375 | 7.625 |
| Mean ($\overline{X}$) Average of each deposits | 2.875 | 2.688 | 2.688 | 3.219 | 4.313 |
| Standard Deviation of Average Deposit ($\sigma$) | 0.61 | | | | |

*Source : Various Banking and Financial Statistics Published by NRB in Mid July and Annex-I*

From the above table, it is clear that the average interest rate on deposit of HBL is also in decreasing and increasing trend. In Mid July 2005, it was 20875 percent followed by 2.688 percent in 2006 and 2007. Then, it increased in 2008 and 2009 by 3.219 percent and 4.313 percent. And the standard deviation 0.61 indicates that the scatteredness among the deposit rate within these five years time period is 0.61 percent.

**Table No. 4.9**

**Interest Rate Structure on Loans & Advances of HBL**

**as on Mid July**

**(In %)**

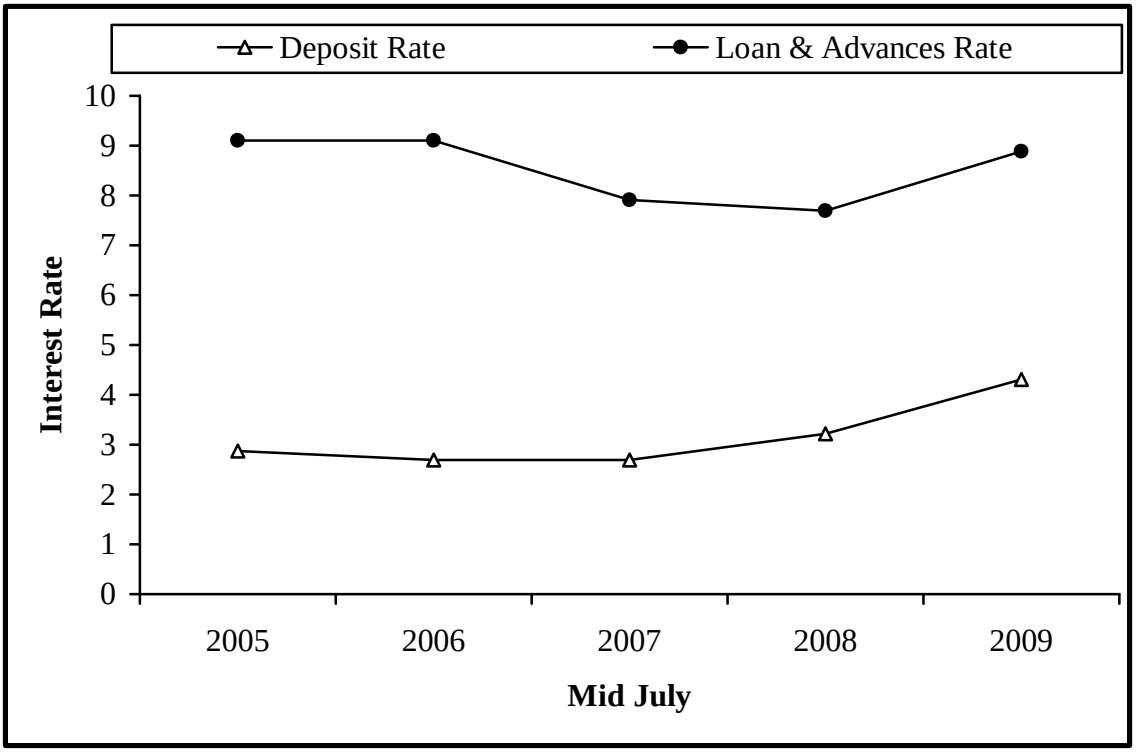
| Deposit | Year | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Overdraft | 10.50 | 10.5 | 9 | 9 | 9.75 |
| Export Credit | 8.50 | 8.5 | 7.375 | 8.5 | 9.625 |
| Import L/C | 9.575 | 9.575 | 7.75 | 8.25 | 9.375 |
| Against FDR | 6 | 6 | 6 | 4 | 4 |
| Against HMG Bond | 5.5 | 5.5 | 6.5 | 7 | 7 |
| Against BG/CG | 8.75 | 8.75 | 7.25 | 7.5 | 9 |
| Against other Guarantee | - | - | - | - | - |
| Industrial Loan | 10.5 | 10.5 | - | - | - |
| Commercial Loan | 10.375 | 10.375 | - | - | - |
| Priority Sector | 11.625 | 11.625 | 10 | - | 10 |
| Poorer Sector | 6.375 | 6.375 | 6.375 | 6.875 | 7.375 |
| Term Loan | 10.625 | 10.625 | 9.25 | 9.5 | 11 |
| Working Capital | - | - | - | - | - |
| Hire Purchase | 10.25 | 10.25 | 8.5 | 8.5 | 10.75 |
| Others | 9.75 | 9.75 | 9 | 7.75 | 9.875 |
| Mean $(\bar{X})$ = Average of loan & advance | 9.102 | 9.102 | 7.909 | 7.688 | 8.886 |
| Standard Deviation of Average Loan & Advance $(\sigma)$ | 0.61 | | | | |

*Source : Various Banking and Financial Statistics Published by NRB in Mid July and Annex-I*

From the above table shows the average interest rate on loans and advance of HBL. It was 9.102 percent in Mid July 2005 and 2006. Then after, it was followed by 7.909 percent, 7.688 percent and 8.886 percent in Mid July 2007, 2008 and 2009 respectively. The standard deviation of 0.61 denotes that the dispersion among the average lending rate within these five years period.

**Figure No. 4.4**

**Interest Rate Structure of HBL**




*Source: Table No. 4.8 & 4.9*

The above figure shows the positive trend line of deposit rate and loan & advances rate of HBL during the Mid July 2005 to 2009. The rate of loan and advance trend line slightly decreased from 2006 to 2008 and it increased in 2009. Both trends line are sloping upward. The deposit rate increased from 2005 to 2009 continuously. The trend line of investment of HBL is same as explained in figure no. 4.1.

#### 4.2.1.5 Interest Rate Structure of NSBIBL

The NSBIBL collects fund from different account such as fixed account, saving account, current account and other account. These collected funds are used in different sectors. The interest rate structure on deposit and loan and advances of NSBIBL are shown as follows. The interest rate structure on investment of NSBIBL is same as shown in above table no. 4.3.

**Table No. 4.10**

**Interest Rate Structure on Deposit of NSBIBL**

**as on Mid July**

**(In %)**

| Deposit Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Saving | 3.25 | 3.25 | 3.25 | 3 | 3 |
| Special Saving | | | | | |
| Fixed | | | | | |
| 7 days | | | | | |
| 14 days | | | | | |
| 1 months | 2.75 | 2.75 | 2.745 | 2.75 | 2.75 |
| 2 months | - | - | - | | - |
| 3 months | 3.25 | 2.5 | 3.25 | 3.25 | 3.25 |
| 6 months | 3.75 | 3 | 3.75 | 4.5 | 4.5 |
| 1 year | 4 | 3.75 | 4 | 4.75 | 5.5 |
| 2 year/above | 4.5 | 3.75 | 4 | 4.75 | 6.5 |
| Mean ($\overline{X}$) Average of each deposits | 3.583 | 3.167 | 3.50 | 3.883 | 4.25 |
| Standard Deviation of Average Deposit ($\sigma$) | 0.37 | | | | |

*Source : Various Banking and Financial Statistic Published by NRB in Mid July and Annex-I*

The above table depicted the interest rate structure of NSBIBL as on Mid July. The average interest rate on deposit of NSBIBL decreased from 3.583 in Mid July 2005 to 3.167 in Mid July 2006. Then it is slightly increased to 3.50 percent, 3.883 percent, 4.25 percent in Mid July 2007, 2008 and 2009 respectively. The standard deviation of 0.37 means that, the dispersion among the deposit rate within these five years time period is 0.37 percent.

**Table No. 4.11**

**Interest Rate Structure on Loans and Advances of NSBIBL**

**as on Mid July**

**(In %)**

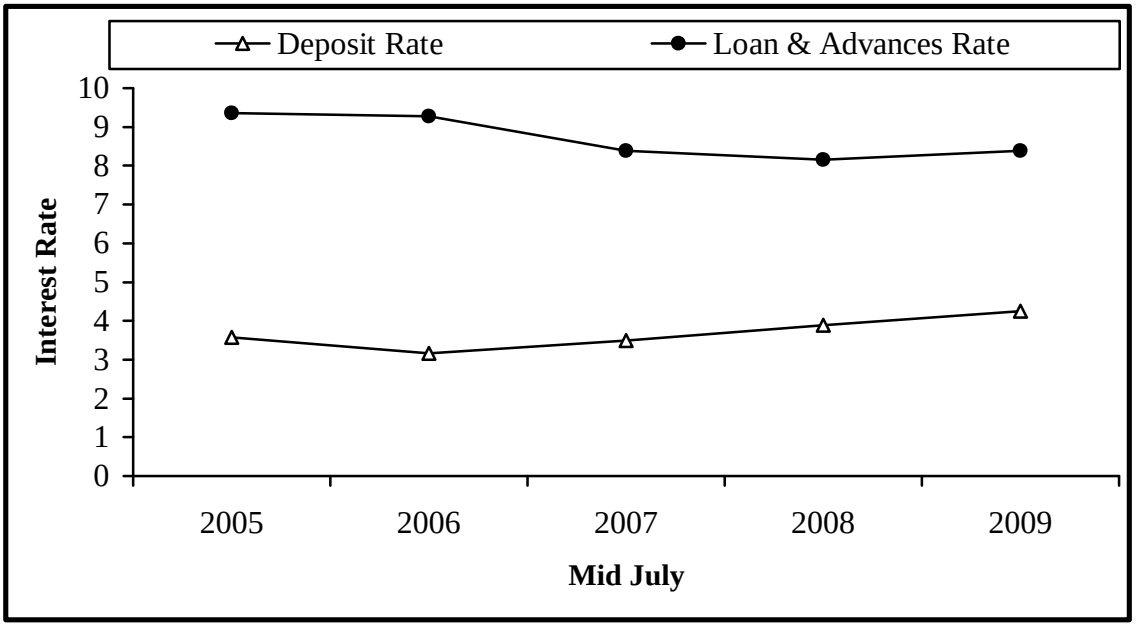
| Deposit | Year | | | | |
|---|---|---|---|---|---|
| | **2005** | **2006** | **2007** | **2008** | **2009** |
| Overdraft | 11.25 | 11.25 | 9.75 | 9.75 | 9.75 |
| Export Credit | 9.25 | 9.25 | 7.75 | 7.75 | 7.75 |
| Import L/C | - | - | - | - | - |
| Against FDR | 6 | 5.25 | 5.5 | 3 | 3 |
| Against HMG Bond | 6.75 | 6.75 | 6.75 | 6.75 | - |
| Against BG/CG | 9 | 9 | 8.5 | 8.5 | 9.5 |
| Against other Guarantee | - | - | - | - | 9 |
| Industrial Loan | - | - | - | - | 9.25 |
| Commercial Loan | - | - | - | - | - |
| Priority Sector | 11.75 | 11.75 | 10.25 | 10.25 | - |
| Poorer Sector | 8 | 8 | 8 | 8 | 8 |
| Term Loan | 11.75 | 11.75 | 9.75 | 9.75 | 9.75 |
| Working Capital | - | - | - | - | - |
| Hire Purchase | 10 | 10 | 9 | 9 | - |
| Others | 9.75 | 9.75 | 8.625 | 8.75 | 9.5 |
| Mean $(\overline{X})$ = Average of each deposits | 9.350 | 9.275 | 8.388 | 8.15 | 8.388 |
| Standard Deviation of Average Deposit $(\sigma)$ | 0.50 | | | | |

*Source : Various Banking and Financial Statistic Published by NRB in Mid July and Annex-I*

The above table no. 4.11 shows that the average interest rate structure of loan and advances of NSBIBL from the Mid July 2006 to 2009. The average interest rate of all credit is in decreasing trend. In Mid July 2005, it is 9.350 percent and it gradually decreased to 9.275 percent, 8.388 percent and 8.15 percent in 2006, 2007 and 2008 respectively. But it slightly increased to 8.388 percent in 2009. The standard deviation of 0.50 signifies that the scatteredness among the lending rates within the five years time period is 0.50 percent.

**Figure No. 4.5**

**Interest Rate Structure of NSBIBL**




*Source : Table No.4.10 & 4.11*

In the above figure no. 4.5, the deposit rate and loan and advance rate of NSBIBL is decreasing and increasing trend. The deposit rate is slightly decreasing in 2006 and start to increasing 2007, 2008 and 2009. But loan and advance rate are decrease from 2006 to 2008. It shows the positive relationship. The trend line of investment of NSBIBL is same as explained in figure 4.1.

### 4.2.2 The Relationship of Interest Rate with Deposit, Loan and Advance and Investment of Nepalese Commercial Banks

Interest rate trend price signals to borrowers, lenders, savers and investors. It means that the higher interest rate generally bring forth a greater volume of saving and stimulate the lending of funds. Lower rate of interest on the other hand, tend to damper the flow of saving and reduce lending activity. Higher interest rate trends to reduce the volume of investment spending. The effect of interest rate on deposit collection, loan and advance and investment can be studied with help of correlation coefficient, coefficient of determination and t-test.

The calculation of correlation coefficient, coefficient of determination and t-test of Nepalese Commercial Banks are studied as follows:

**Table No. 4.12**

**Correlation Coefficient, Coefficient of Determinations and t-Statistics of NABIL**

| Year | Deposit Rate in % (1) | Deposit Amount (2) | Interest on Loan & Advance in % (3) | Loan & Advances Amount (4) | Investment Rate in % (5) | Investment Amount (6) |
|---|---|---|---|---|---|---|
| 2005 | 3.196 | 14586.8 | 9.354 | 11222.7 | 6.558 | 4353.3 |
| 2006 | 3.324 | 19348.4 | 9.542 | 13239.4 | 6.483 | 6174.8 |
| 2007 | 2.813 | 23342.4 | 8.625 | 15878.3 | 5.573 | 8952.3 |
| 2008 | 4.656 | 31915.05 | 8.708 | 21365.06 | 6.397 | 14072.07 |
| 2009 | 5.036 | 37348.25 | 9.778 | 27589.93 | 5.125 | 15899.88 |
| Total | 19.025 | 126540.9 | 46.007 | 89295.39 | 30.136 | 49452.35 |
| $r_{12}$ = 0.877627868 | | $r_{34}$=0.17930436 | | $r_{56}$=-0.633191724 | | $r_{13}$=0.30219038 |
| $r_{12}^2$ = 0.770230675 | | $r_{34}^2$=0.032150053 | | $r_{56}^2$=0.400931759 | | $r_{13}^2$=0.091319026 |
| $/t_{12}/$=3.171210047 | | $/t_{34}/$=0.315680286 | | $/t_{56}/$=1.416960386 | | $/t_{13}/$=0.549079898 |

*Source : Banking and Financial Statistics, Published by NRB in Mid July 2009 and Annex I*

Where,

$r_{12}$ = Correlation Coefficient between Deposit Rate and Deposit Amount

$(r_{12})^2$ = Coefficient of Determinations between Deposit Rate and Deposit Amount

$/t_{12}/$ = t-test between Deposit Rate and Deposit Amount

In above table, the simple correlation coefficient between interest rate on deposit and deposit amount ($r_{12}$) is 0.8776 this means that there is high degree of positive correlation between these two variables. According to real theory of interest rate, the higher interest rate attracts depositors and increases the supply of money. Similarly, opposite case will happen, when interest rate decrease and vice-versa. But within this study period, the deposit amount is increased even in decreased interest rate. The coefficient of determination ($r_{12}^2$) is 0.7702 which indicates 77.02 percent of total variation in the value dependent variable (i.e. deposit amount) has been explained by the independent variable (i.e. deposit rate) and remaining 22.98 is due to effect other factors in the economy. From this analysis, it can be said that interest rate is affecting deposit positively some extent. Test significance of correlation between deposit rate and deposit amount also supports it. Because tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance is 3.182 which is greater than calculated value of 't' (i.e. t-calculated < t-tabulated, 3.171 < 3.182). Thus, t is insignificant, hence null hypothesis is accepted and alternative hypothesis

is rejected which means that variable (deposit rate and deposit amount) of NABIL Bank are uncorrelated.

The correlation coefficient between interest rate on loan & advances and total loan amount ($r_{34}$) is 0.1793 which indicates the low degree of positive correlation. In other words small change in lending rate changes the total loans and advances amount slightly proportion, i.e. demand for investment and vice-versa. This analysis related to the classical theory of interest rate. The coefficient of determination ($r_{34}^2$) 0.0322 indicates the 3.22 percent of total variation in dependent variable (Loan and advances amount) is explained by one independent variable (Interest rate on loan and advances) and remaining 96.78 percent is due to the effect of other factors in the economy. Test significance of correlation coefficient between interest on loans and advances and lending amount shows that the tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance is 3.182 is greater than the calculated value of 't' 0.316, i.e. ($t_{cal}$ = 0.3156) < ($t_{tab}$ = 3.182). It is not significant and null hypothesis is accepted which means that the variables (lending rate and loan amount) of NABIL Bank are uncorrelated.

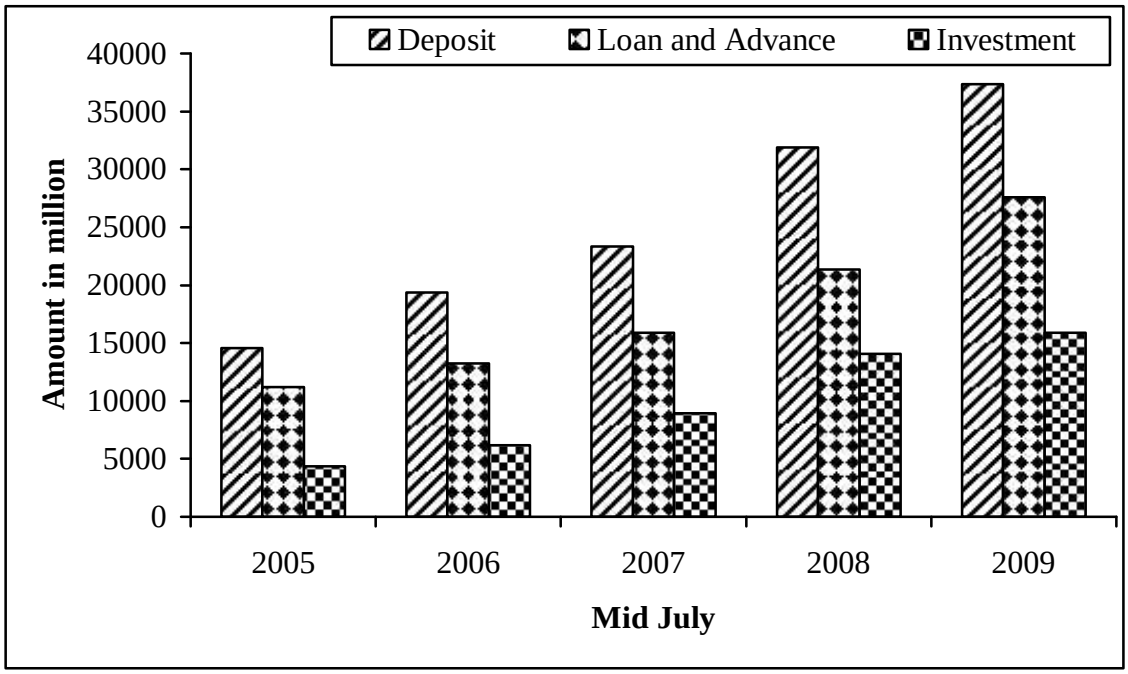
The correlation coefficient between interest on investment and investment amount ($r_{56}$) is -0.6331. It denotes the moderate degree of negative correlation between these two variables. The coefficient of determination ($r_{56}^2$) 0.4009 implies that 40.09 percent of total variation in dependent variable (investment amount) is explained by the independent variable (investment rate) and remaining 59.9 percent is due to the other factors in economy. Test significance of correlation between interest on investment and investment amount makes clear that the tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance is 3.182 i.e. ($t_{cal}$ = 1.4169) < ($t_{tab}$ = 3.182). Thus, it is insignificant and null hypothesis is accepted which means that the variables (investment rate and investment amount) of NABIL Bank are uncorrelated.

Similarly, the correlation coefficient between interest rate on deposit and interest rate on loans and advances ($r_{13}^2$) is 0.3021. It implies the moderate degree of positive correlation between interest rate on deposit and interest rate on loans and advances. That means, with the increase or decrease in one variable the other variable also increases or decreases. When deposit rate increase in small percentage then

interest rate on loan and advances also increase in small percentage and vice versa. The coefficient of determination $r_{13}^2$ is 0.0913 which indicates 9.13 percent of total variation in dependent variable (lending rate) is explained by one independent variable (deposit rate) and remaining 90.87 percent is effect of other factors in the economy. Under the test significance of correlation coefficient between deposit rate and lending rate, 't' calculated 0.5490 is less than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, null hypothesis is accepted. It means that the variables (deposit rate and loans and advances rate) of NABIL Bank are uncorrelated.

**Figure No. 4.6**

**Deposit Collection and Mobilization of NABIL**




*Source : Table No. 4.12*

The above figure represents the position of total deposit collection and mobilization of these collected funds into loan and advances and investment sectors by NABIL. The mobilization funds of banks depend upon the deposit collection funds by this bank. The total deposit collection is decreased in Mid-July 2005 and then after it is increased continuously. The funds mobilization in loan and advances are increase in every Mid-July and the fund mobilization in investment sectors is decreased up-to Mid-July 2005 then after it is also increased. The fund mobilization in loan and advances sectors is greater than the fund mobilization in investment sectors.

**Table No. 4.13**

**Correlation Coefficient, Coefficient of Determinations and t-Statistics of NIBL**

| Year | Deposit Rate in % (1) | Deposit Amount (2) | Interest on Loan & Advance in % (3) | Loan & Advances Amount (4) | Investment Rate in % (5) | Investment Amount (6) |
|---|---|---|---|---|---|---|
| 2005 | 2.661 | 14254.8 | 9.045 | 10490.4 | 6.558 | 4074.2 |
| 2006 | 2.656 | 18927.3 | 9.045 | 13171.5 | 6.483 | 5672.9 |
| 2007 | 2.656 | 24488.9 | 9.045 | 17769.1 | 5.573 | 6518.6 |
| 2008 | 3.156 | 34451.7 | 9.137 | 36455.4 | 6.397 | 9560.3 |
| 2009 | 3.093 | 46698.1 | 9.112 | 27189.8 | 5.125 | 11186.1 |
| | 14.222 | 138820.8 | 45.384 | 105076.2 | 30.136 | 37012.1 |
| $r_{12}$=0.866332288 | | $r_{34}$=0.963037774 | | $r_{56}$=-0.639084183 | $r_{13}$=0.993548638 | |
| $r_{12}^2$=0.750531634 | | $r_{34}^2$=0.927441754 | | $r_{56}^2$=0.408428593 | $r_{13}^2$=0.987138897 | |
| /$t_{12}$/=3.004259109 | | /$t_{34}$/=6.192422226 | | /$t_{56}$/=1.439179981 | /$t_{13}$/=15.17436912 | |

*Source : Banking and Financial Statistics, Published by NRB in Mid July 2009 and Annex I*

From the table shows the correlation coefficient between deposit rate and deposit amount of NIBL ($r_{12}$) is 0.8633, interest rate on loan and advances and loan amount of NIBL ($r_{34}$) is 0.9630 and similarly interest rate on deposit and interest rate on loan & advance ($r_{13}$) is 0.9935. This means there is high degree of positive correlation between deposit rate and deposit amount and between interest rate on loan and advances and loan amount and between interest rate on deposit and interest rate on loan & advance of NIBL during this study period. But there is moderate degree of negative correlation between investment rate and investment amount i.e. $r_{56}$ = -0.6390. .

The coefficient of determination $r_{12}^2$ 0.75053 which means 75.05 percent of total variation in dependent variable (deposit amount) is explained by independent variable (deposit rate) remaining 24.94 percent is due to the other factors in the economy. Test significance of correlation between deposit rate and deposit amount result is insignificant as calculated 't' 3.0042 is less than tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance is 3.182. So, null hypothesis is accepted and alternative hypothesis is rejected. It means the variable deposit rate and deposit amount of NIBL are uncorrelated.

The coefficient of determination $r_{34}^2$ is 0.9274. It means 92.74 percent of the total variation in dependent variable (loan amount) is explained by the independent variable (loan and advance rate) and remaining is due to the other factors in the economy. Under the test significance of correlation between loan rate and loan amount, 't' calculated 6.1924 is greater than 't' tabulated value of 't' = 3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, null hypothesis is rejected. It means that the variables (loan and advances rate and loans and advances amount) of NIBL Bank are correlated

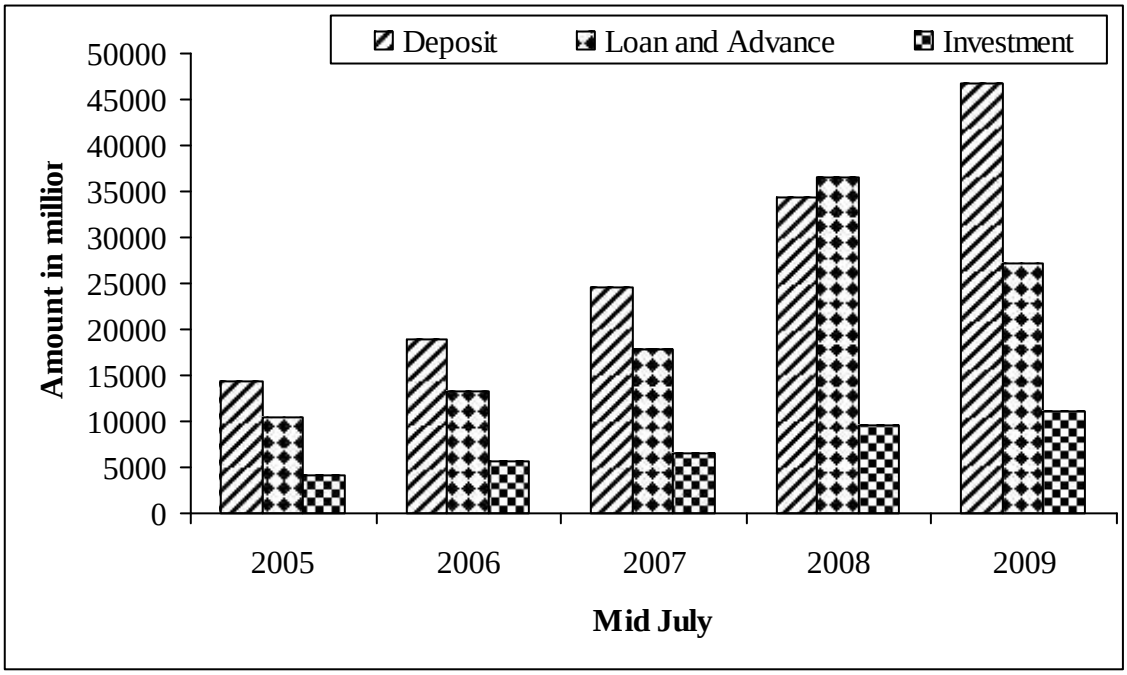
Similarly, the coefficient of determination between investment rate and investment

amount $r_{56}^2$ is 0.4084 means 40.84 percent of total variation in dependent variable (total investment amount) is explained by the independent variable (investment rate) and alternative 59.16 percent is due to the other factors in the economy. Under the test significant, alternative hypothesis is accepted, as calculated 't' 1.4391 is lower than the tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance 3.182. So, it can be concluded that the variable investment rate and investment amount are not correlated.

From the same table reveals that the correlation coefficient deposit rate and lending rate ($r_{13}$) is 0.9935 is which means there is high degree of positive correlation between these two variables. That is small change (increase/decreases) in deposit rate change (increases/decreases) the lending rate in high proportion. The coefficient of determination $r_{13}^2$ 0.9871 indicates cent percentage of total variation in dependent variable (lending rate) is explained by the independent variable (deposit rate) and it is slightly affected by other factors in economy. Under the test significance of correlation between the deposit rate and lending rate of NIBL, the calculated value of 't' is 15.1743. Hence, calculated 't' (i.e. $t_{cal}$ = 15.1743) is greater than tabulated 't' (i.e. t = 3.182) for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. It is significant and alternative hypothesis is accepted. But the null hypothesis is rejected. It can be concluded that the deposit rate and lending rate of NIBL is more correlated.

**Figure No. 4.7**

**Deposit Collection and Mobilization of NIBL**



The above figure shows the volume of deposit collection and fund mobilization in loan and advances and investment sectors by NIBL. The fund mobilization in lone and advances sectors are increased with the increased in deposit collection. The fund mobilization in investment sector is ups and downs nature. The fund mobilization of NIBL in loan and advances sectors is also greater than in investment sectors.

**Table No. 4.14**

**Correlation Coefficient, Coefficient of Determinations and t-Statistics of SCBNL**

| Year | Deposit Rate in % (1) | Deposit Amount (2) | Interest on Loan & Advance in % (3) | Loan & Advances Amount (4) | Investment Rate in % (5) | Investment Amount (6) |
|---|---|---|---|---|---|---|
| 2005 | 1.719 | 19344 | 9.857 | 8525.1 | 6.397 | 9704.1 |
| 2006 | 1.75 | 23050.5 | 8.804 | 9206.3 | 5.125 | 12850.6 |
| 2007 | 1.75 | 24640.3 | 8.804 | 10790 | 4.965 | 13564 |
| 2008 | 1.828 | 29743.8 | 8.768 | 14240.9 | 6.397 | 19446.6 |
| 2009 | 1.93 | 35871.7 | 8.923 | 13915.2 | 5.125 | 25620.9 |
| | 8.977 | 132650.3 | 45.156 | 56677.5 | 28.009 | 81186.2 |
| $r_{12}$=0.983034424 | | $r_{34}$=-0.561574706 | | $r_{56}$=-0.206322395 | | $r_{13}$=-0.412952414 |
| $r_{12}^2$=0.966356678 | | $r_{34}^2$=0.31536615 | | $r_{56}^2$=0.042568931 | | $r_{13}^2$=0.170529696 |
| $/t_{12}/$=9.282819722 | | $/t_{34}/$=1.175544251 | | $/t_{56}/$=0.365218896 | | $/t_{13}/$=0.785344515 |

*Source : Banking and Financial Statistics, Published by NRB in Mid July 2009 and Annex I*

From the above table, the correlation coefficient between deposit rate and deposit amount seems positive. The correlation coefficient $r_{12}$ = 0.9830 indicates there is high degree of positive correlation between deposit rate and deposit amount. It denotes with the less increase or decrease in deposit rate increases or decreases deposit amount more proportionately. The coefficient of determination ($r_{12}^2$) = 0.9663 implies that 96.63 percent of total variation in dependent variable (loan rate) has been explained by the one independent variable (deposit amount and remaining 3.37 percent is due to the effect of other factors in the economy. Under the test significance of correlation coefficient between deposit rate and deposit amount, the calculated 't' (i.e. $t_{cal}$ = 9.2828 is more than the tabulated 't' at 5 percent level of significant for 3 d.f. (i.e. $t_{tab}$=3.182). Hence, null hypothesis is rejected and alternative hypothesis is accepted, which means the variables deposit rate and deposit amount rate of SCBNL are correlated.

It is clear that there is moderate degree of negative correlation between interest on loan and advance rate and loan and advance amount ($r_{34}$) is -0.5615 which means

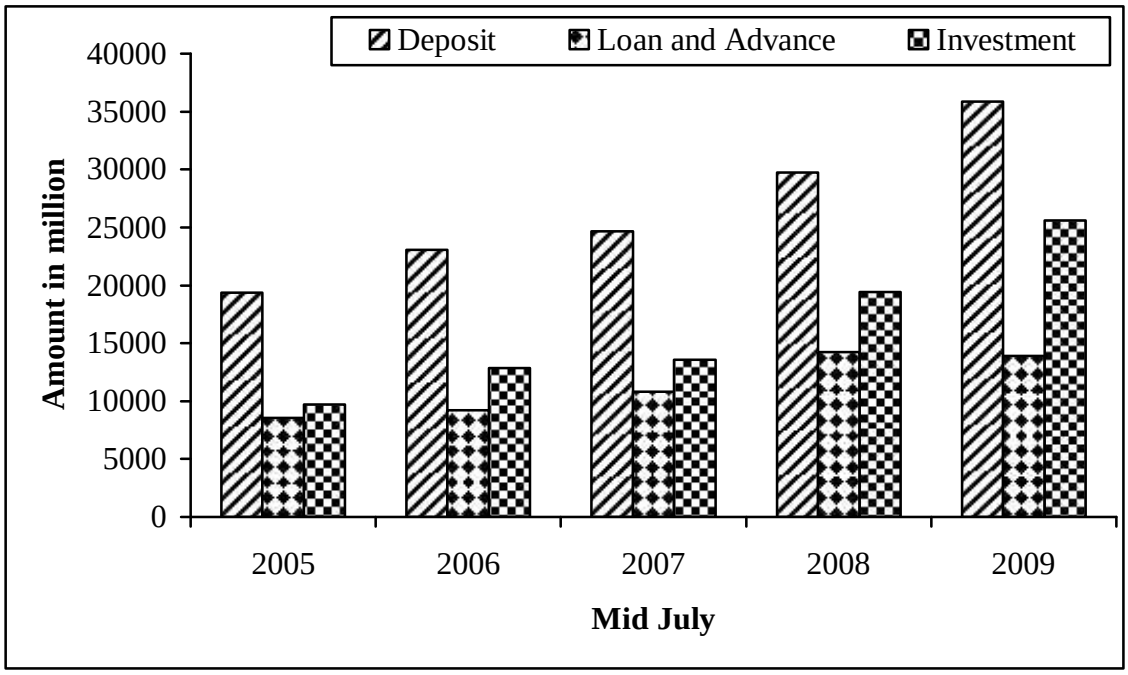
with the increase in interest rate loan and advance amount decreases and with the decrease in interest rate loan and advance amount increases. The coefficient of determination ($r_{34}^2$) 0.3153 indicates the 31.53 percent of total variation in dependent variable (Loan and advances amount) is explained by one independent variable (Interest rate on loan and advances) and remaining 68.47 percent is due to the effect of other factors in the economy. Test significance of correlation coefficient between interest on loans and advances and lending amount shows that the tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance is 3.182 is greater than the calculated value of 't' 1.1755, i.e. ($t_{cal}$ = 1.1755) < ($t_{tab}$ = 3.182). It is not significant and null hypothesis is accepted which means that the variables (lending rate and loan amount) of SCBNL Bank are uncorrelated.

The correlation coefficient between interest on investment and investment amount ($r_{56}$) is -0.2063. It denotes the low degree of negative correlation between these two variables. The coefficient of determination ($r_{56}^2$) 0.0425 implies that 4.25 percent of total variation in dependent variable (investment amount) is explained by the independent variable (investment rate) and remaining 95.75 percent is due to the other factors in economy. Test significance of correlation between interest on investment and investment amount makes clear that the tabulated value of 't' for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance is 3.182 i.e. ($t_{cal}$ = 0.3652) < ($t_{tab}$ = 3.182). Thus, it is insignificant and null hypothesis is accepted which means that the variables (investment rate and investment amount) of SCBNL Bank are uncorrelated.

Similarly, the correlation coefficient between interest rate on deposit and interest rate on loans and advances ($r_{13}^2$) is -0.4129. It implies the moderate degree of negative correlation between interest rate on deposit and interest rate on loans and advances. The coefficient of determination $r_{13}^2$ is 0.1705 which indicates 17.05 percent of total variation in dependent variable (lending rate) is explained by one independent variable (deposit rate) and remaining 82.95 percent is effect of other factors in the economy. Under the test significance of correlation coefficient between deposit rate and lending rate, 't' calculated 0.7853 is less than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, null hypothesis is accepted. It means that the variables (deposit rate and loans and advances rate) of SCBNL Bank are uncorrelated.

**Figure No. 4.8**

**Deposit Collection and Mobilization of SCBNL**




The above figure depicts the deposit collection and fund mobilization of SCBNL. The deposit collection and fund mobilization in investment are ups and downs nature. Where as the fund mobilization in loan and advance are also ups and downs in each Mid July. The fund mobilization of SCBNL in investment sectors is greater than in loan and advances sectors.

**Table No. 4.15**

**Correlation Coefficient, Coefficient of Determinations and t-Statistics of HBL**

| Year | Deposit Rate in % (1) | Deposit Amount (2) | Interest on Loan & Advance in % (3) | Loan & Advances Amount (4) | Investment Rate in % (5) | Investment Amount (6) |
|---|---|---|---|---|---|---|
| 2005 | 2.875 | 24831.1 | 9.102 | 13590.9 | 6.558 | 5509.6 |
| 2006 | 2.688 | 26456.2 | 9.102 | 15768.3 | 6.483 | 10890.5 |
| 2007 | 2.688 | 29905.8 | 7.909 | 17841.5 | 5.573 | 1821.6 |
| 2008 | 3.219 | 31939.8 | 7.688 | 20492.4 | 6.397 | 17686.7 |
| 2009 | 4.313 | 34746.3 | 8.886 | 25878.4 | 5.125 | 15339.1 |
| | 15.783 | 147879.2 | 42.687 | 93571.5 | 30.136 | 51247.5 |
| $r_{12}$=0.799680523 | | $r_{34}$=-0.232258876 | | $r_{56}$=-0.0139794 | | $r_{13}$=0.118351917 |
| $r_{12}$2=0.639488939 | | $r_{34}^2$=0.053944185 | | $r_{56}^2$=0.000195424 | | $r_{13}^2$=0.014007176 |
| /$t_{12}$/=2.306841997 | | /$t_{34}$/=0.413594321 | | /$t_{56}$/=0.024215397 | | /$t_{13}$/=0.206442471 |

*Source : Banking and Financial Statistics, Published by NRB in Mid July 2009 and Annex I*

From the above table, it is clear that the two variables deposit rate and deposit amount are highly positively correlated. The correlation coefficient between these two variables is 0.7996 which means small increase or decrease or decrease in deposit rate decrease or increase the deposit amount in higher proportion. This analysis does not match the general theory that increase in interest rate increases the deposit amount and vice-versa. The coefficient of determination ($r^2_{12}$) 0.6394 indicates that 63.94 percent of total variation in dependent variable (deposit amount) is explained by one independent variable (deposit rate) and remaining 36.06 percent is due to the other factors in the economy. Test of significance of correlation coefficient between deposit rate and deposit amount at 5 percent level of significance for 3 d.f. reveals that it is insignificant. Since, the calculated value of 't' (2.3068) is less than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance, null hypothesis is accepted and alternative hypothesis is rejected. It means the variables deposit rate and deposit amount of HBL is uncorrelated.

Again, from the same table no. 4.15, the correlation coefficient between interest on loan and advances and loan amount is -0.2322. It indicates there is low degree of negative correlation between these two variables. It means that with the small increase or decrease in lending rate decreases or increases the loan amount in low rate. Similarly, the coefficient of determination ($r^2_{34}$) 0.0539 denotes that 5.39 percent of total variation in dependent variable (loan amount) is explained by independent variable (lending rate) and remaining 94.61 percent is due to the other factors in the economy. Test significance of correlation coefficient between lending rate and loan amount results insignificant, because the calculated value of 't' (0.4135) is less than the tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. Hence null hypothesis is accepted and alternative hypothesis is rejected, which means there is no correlation between loan rate and loan amount.

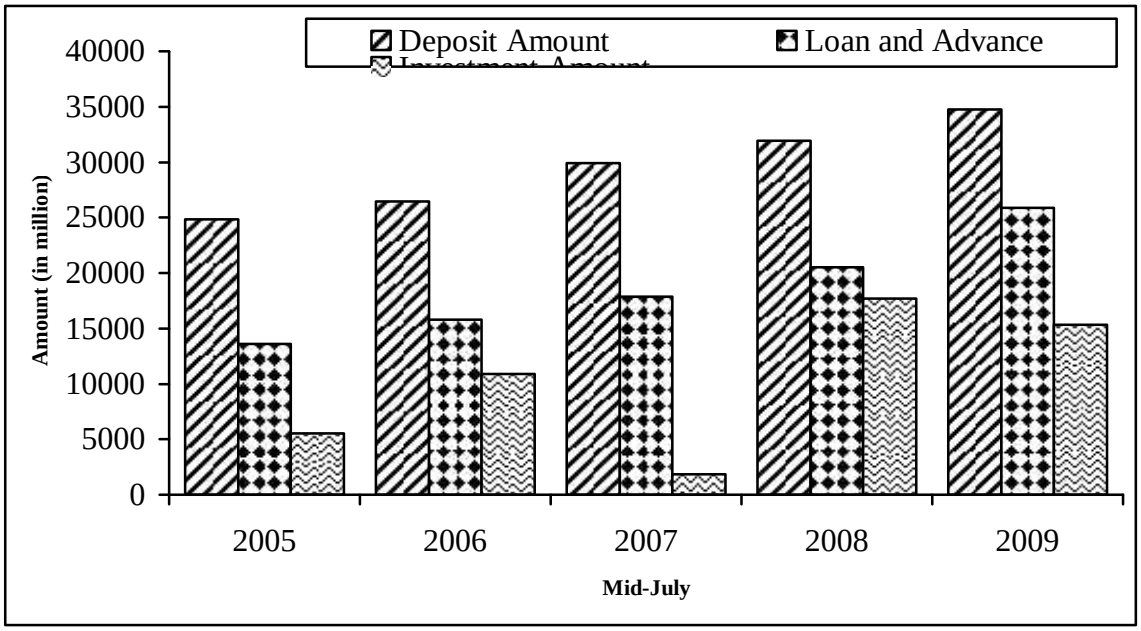
In the same table, the correlation coefficient between two variables investment rate and investment amount is -0.0139. That is low degree of negative correlation. It means that with the increase or decreases in investment rate decreases or increases investment amount in small proportion. The coefficient of determination $r^2_{56}$ 0.000195 denotes that only 0.0195 percent of total variation in dependent variable (investment amount) has been explained by independent variable (investment rate) and

remaining 99.98 is due to other factors in the economy. Test significance of correlation coefficient between investment rate and investment amount is insignificant as calculated 't' ($t_{cal}$ = 0.0242) is less than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, null hypothesis is accepted, that means the variable investment rate and investment amount are uncorrelated.

But in the same table, the correlation coefficient between deposit rate and loan rate of HBL is 0.1183. It is the low degree of positive correlation. So with small increase or decrease in deposit rate, loan rate increases or decreases by small proportion. The coefficient of determination $r_{13}^2$ 0.01400 denotes that 1.4 percent of total variation in dependent variable (loan rate) is explained by independent variable (deposit rate) and remaining 98.6 percent is due to the effect of other factors in the economy, which has not been studied in this research. Test significance of correlation coefficient between loan rate and deposit rate results insignificant, as calculated 't' ($t_{cal}$ = 0.2064) is lower than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, null hypothesis is accepted and alterative hypothesis is rejected, that means the variable deposit rate and loan and advance rate are uncorrelated.

**Figure No. 4.9**

**Deposit Collection and Mobilization of HBL**



The above figure shows that the volume of deposit collection and fund mobilization in loan and advances and investment sectors by NIBL. The fund mobilization in loan and advances sectors are increased with the increased in deposit collection. The fund mobilization in investment sectors is ups and downs nature. The fund mobilization of NIBL in loan and advances sectors is also greater than in investment sectors.

**Table No. 4.16**

**Correlation Coefficient, Coefficient of Determinations and t-Statistics of NSBIBL**

| Year | Deposit Rate in % (1) | Deposit Amount (2) | Interest on Loan & Advance in % (3) | Loan & Advances Amount (4) | Investment Rate in % (5) | Investment Amount (6) |
|---|---|---|---|---|---|---|
| 2005 | 3.042 | 8645.8 | 9.35 | 6765.1 | 6.558 | 2607.7 |
| 2006 | 3.167 | 10852.7 | 9.275 | 8250.8 | 6.483 | 3699.9 |
| 2007 | 3.5 | 11445.2 | 8.388 | 10065.4 | 5.573 | 2377.5 |
| 2008 | 3.883 | 13750.3 | 8.15 | 12742.5 | 6.397 | 3167.5 |
| 2009 | 4.25 | 27957.2 | 8.388 | 15131.7 | 5.125 | 13331.8 |
| | 17.842 | 72651.2 | 43.551 | 52955.5 | 30.136 | 25184.4 |
| $r_{12}$=0.883581708 | | $r_{34}$=-0.83001219 | | $r_{56}$=-0.740503764 | | $r_{13}$=-0.835737495 |
| $r_{12}^2$=0.780716635 | | $r_{34}^2$=0.688920236 | | $r_{56}^2$=0.548345825 | | $r_{13}^2$=0.698457161 |
| $/t_{12}/$=3.268168956 | | $/t_{12}/$=2.577562577 | | $/t_{56}/$=1.908468005 | | $/t_{13}/$=2.636064331 |

*Source : Banking and Financial Statistics, Published by NRB in Mid July 2009 and Annex I*

From the above table the calculation of correlation coefficient, coefficient of determination and test statistics of NSBIBL has been clearly shown. The correlation coefficient $r_{12}$ = 0.8835 denotes that there is low negative correlation between deposit rate and deposit amount which means small increase/decrease in interest rate on deposit decreases/increases deposit amount in small proportion. The coefficient of determination $r_{12}^2$ = 0.7807 denotes that 78.07 percent of total variation in dependent variable (deposit amount) has been explained by the independent variable (deposit rate) and remaining by the other factors in the economy. Test significance of correlation coefficient between deposit rate and deposit amount at 5 percent level of significance for 3 d.f. reveals significant. The calculated value of 't' 3.2681 is greater than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, the null hypothesis is rejected and alternative hypothesis is accepted means the variables deposit rate and deposit amount of NSBIBL are correlated.

From the same table no. 4.16 the correlation coefficient between interest on loan and

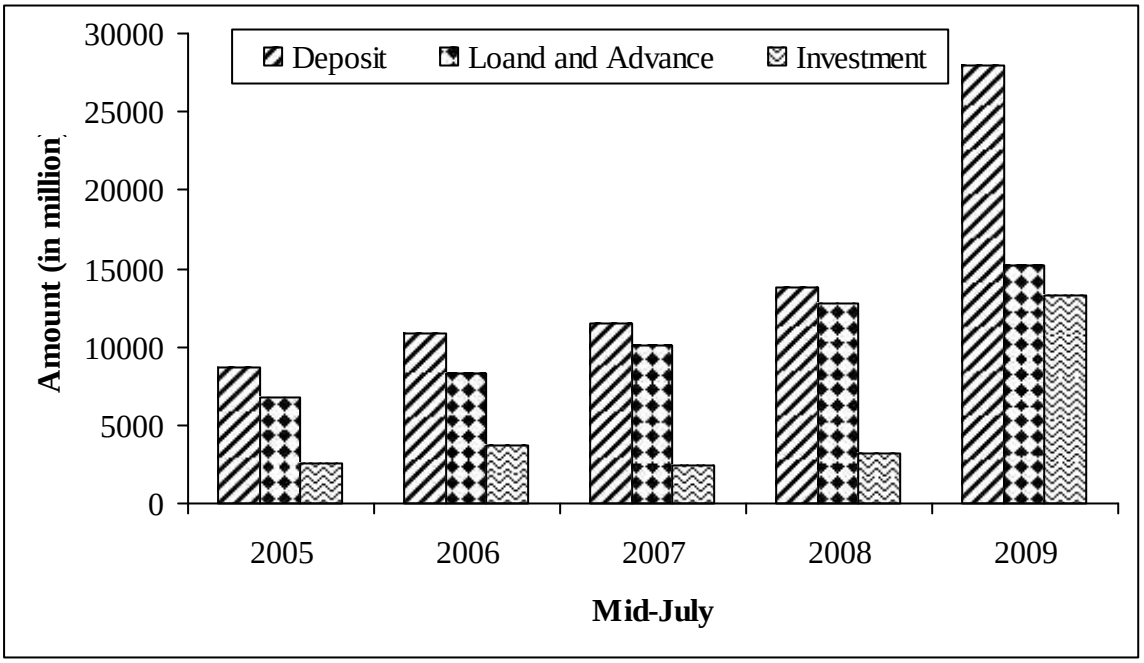
advance and loan amount $r_{34}$ is -0.8300, which means there is high degree negative correlation between these two variables. It indicates that small increase/decrease in interest rate decreases/increases loan amount more proportionately. The coefficient of determination ($r_{34}^2$) 0.6898 indicates that 68.89 percent of total variation in dependent variable (loan amount) has been explained by one independent variable (loan rate) and remaining is due to the other factors in the economy. Test significance of correlation coefficient between loan amount and loan rate results insignificant. The calculated value of 't' 2.5775 is less tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, null hypothesis is accepted that means these two variables are uncorrelated.

From the same table no. 4.16, the correlation coefficient between interest rate on investment and investment amount ($r_{56}$) is 0.7405, which means there is highly negative degree of correlation between these two variables. The coefficient of determination ($r_{56}^2$) 0.5483 indicates that 54.83percent of total variation in dependent variable (investment amount) has been explained by independent variable (investment rate) and remaining is due to the other factors in the economy. Test significance of correlation coefficient between investment rate and investment amount results insignificant. The calculated value of 't' 1.9084 is less than tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, the null hypothesis is accepted and these two variables are uncorrelated.

From the same table, the correlation between interest rate on deposit rate and lending rate is seemed to be high degree of negative correlation i.e. $r_{13}$ = -0.8357, which means small increase/decrease in interest rate on deposit decreases/increases the interest rate on loans and advances rate at higher proportion. The coefficient of determination $r_{13}^2$ = 0.6984 means that 69.84 percent total variation independent variable (deposit rate) has been explained by the one independent variable (lending rate) remaining is due to the other factors in the economy. Test significance of correlation coefficient between deposit rate and lending rate results insignificant as the calculated value of 't' = 2.63606 is less that the tabulated value of 't'=3.182 for 3 (i.e. n-2) d.f. (degree freedom) at 5 percent level of significance. So, the null hypothesis is accepted alternative hypothesis is rejected and there is no correlation between these two variables.

**Figure No. 4.10**

**Deposit Collection and Mobilization of NSBIBL**




*Source: Table 4.16*

From the above figure it can explain that the loan and advances of NSBIBL is increased with the increased in deposit collection. The fund mobilization in investment sectors is also increased up-to Mid July 2006 and decreased in Mid July 2007. The funds mobilization in loan and advances sectors of NSBIBL is greater than in investment sectors.

### 4.2.3 Analysis the Effect of Interest Rate on Deposit Mobilization of Nepalese Commercial Bank

The interest rates play a crucial role in funds collection from different sources and mobilization in different sectors. The interest rate has positive relationship with deposit collection and investment. But it has negative relationship with the loan & advances. It means, if the interest rate is high in deposit and investment, the fund collected from deposit and the fund mobilized in investment will also increase. Similarly, if the interest rate is high in loan & advances, the fund mobilized in loan & advances sectors will decrease. So, the interest rate directly affects fund management of banks.

The effect of interest rate on deposit mobilization of banks can be clear by analyzing the fund management ratios of these banks. Here, the funds management ratios

include Total Loan & advances to Total Deposit, Total Investment to Total Deposit and Total Credit to Total Deposit. The Total Credit to Total Deposit ratio is the summation of total loan & advance to total deposit and total investment to total deposit. These ratios help to evaluate managerial efficiency and proper utilization of assets, which are shown as follows:

**Table No. 4.17**

**Interest Rate and Funds Management Ratio of NABIL**

| Year | Loan & Advance to Total Deposit Ratio | | Investment to Total Deposit Ratio | | Total Credit to Total Deposit Ratio | |
|---|---|---|---|---|---|---|
| | Loan & Advance Rate (%) | (Total Loan & Advance ÷Total Deposit) × 100% | Investment Rate (%) | (Total Investment ÷ Total Deposit) × 100% | Average Interest Rate (%) | (Total Credit ÷ Total Deposit) × 100% |
| 2005 | 9.354 | 76.94 | 6.558 | 29.84 | 7.956 | 106.78 |
| 2006 | 9.542 | 68.42 | 6.483 | 31.91 | 8.012 | 100.34 |
| 2007 | 8.625 | 68.02 | 5.573 | 38.35 | 7.099 | 106.38 |
| 2008 | 8.708 | 66.94 | 6.397 | 44.09 | 7.552 | 111.03 |
| 2009 | 9.778 | 73.87 | 5.125 | 42.57 | 7.451 | 116.44 |

*Source : Banking & Financial Statistics Published by NRB Mid July 2009 and Annex-I*

The above table clears that the effect of interest rate on deposit mobilization of NABIL Bank. Interest on Loan & advances is increase from 9.354 percent to 9.542 percent in Mid July 2005 to 2006, where as its total loans and advances to total deposit ratio is decreased from 76.94 percent to 68.42 percent respectively. Which means NABIL Bank was able to mobilize its deposit amount on total loans and advances is only 76.94 percent at interest rate 9.354 percent. Similarly, it was able to mobilize 68.42 percent of its total deposit amount on total loans and advances at interest rate 9.542 percent which shows that customers are aware about interest rate. In the Mid July 2006 the interest rate rises to 9.542 percent, the loans and advances to total deposit ratio also decreased to 68.42 percent, which is the real theory that increase in interest rate decreases lending activities and decrease in interest rate increases lending activities. In this way, loan and advances to total deposit ratio are 68.02 percent, 66.94 percent and 73.87 percent at loans and advances rate 8.625 percent, 8.708 and 9.778 percent in Mid July 2007, 2008 and 2009 respectively. Here NABIL Bank has shown a good sign of performance that it is able to mobilize its deposit at higher ratio even in the case of rising interest rate. Such a higher ratio shows a better mobilization of fund and vice-versa.

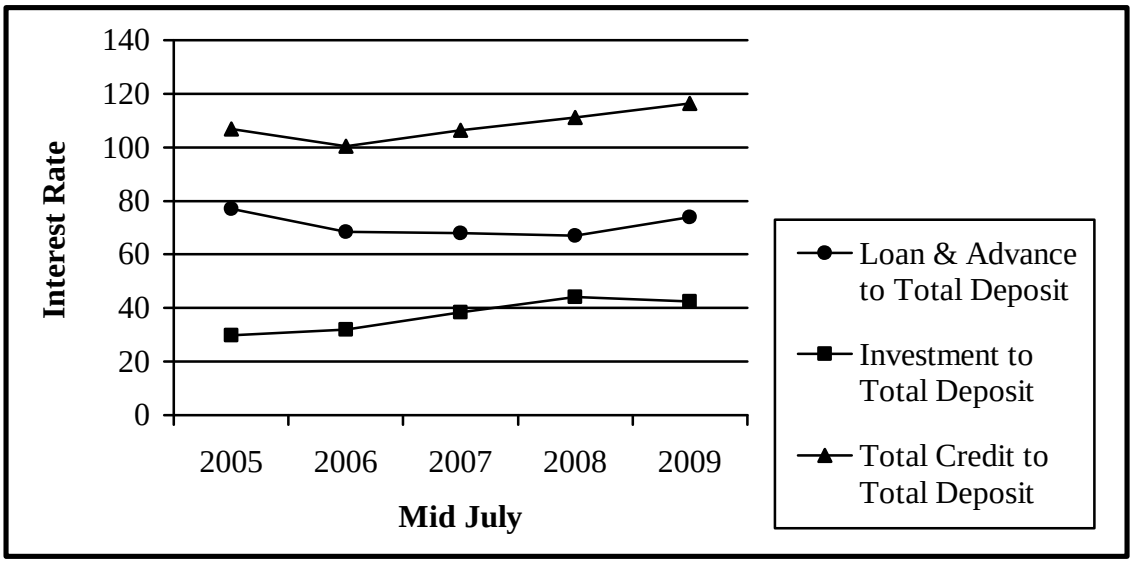
Similarly, in the above table the total investment to total deposit ratio of NABIL Bank

is increasing from Mid July 2006 to 2008 from 29.84 percent to 31.91 percent to 28.38 and to 44.09 percent at investment rate 6.558 percent, 6.483 percent,5.573 percent and 6.397 percent respectively. The total investment to total deposit ratio started to decrease in 42.57 percent in Mid July 2009. But the investment rate increased to 6.397 percent in Mid July 2008. Then after, it decreases to 5.125 percent in Mid July 2009. The interest on investment is generally lower than interest on loan & advances. So, NABIL Bank normally prefers flowing its funds to loans and advances. Since, bank can not utilize whole of its funds raised through deposits into loans & advances, it mobilize the excess fund investing in different government securities issued by government. From the above table it shows that the NABIL Bank invests its fund in such a way to achieve higher return.

In the same table, the total credit to total deposit ratio denotes the aggregate performance of Bank in loan and advances and investment on total deposit. The average interest on total credit were 7.956 percent, 8.012 percent, 7.099 percent, 7.552 percent and 7.451 percent from Mid July 2005 to 2009 respectively. The bank is also able to mobilize its total deposit on total credit to 106.78 percent, 100.34 percent, 106.38 percent, 111.03 percent and 116.44 percent from Mid July 2005 to 2009 respectively. The total credit total deposit ratio above cent percentage reveals the excess use of money in total credit from other sources also, not only from total deposit.

**Figure No. 4.11**

**Funds Management Ratio of NABIL**




*Source : Table No. 4.17*

The above figure shows the trend line of fund management ratios of NABIL. All these

trend lines are ups and downs nature. A high ratio of total credit to total deposit indicates the better mobilization of collected deposits in the fields of loans and advances and investment or the managerial efficiency regarding the utilization of deposits. Similarly, the low ratio is the result of less efficiency in use of funds. The NABIL has high total credit to total deposit ratio in Mid July 2009 and low total credit to total deposit ratio in Mid July 2002.

**Table No. 4.18**

**Interest Rate and Funds Management Ratio of NIBL**

| Year | Loan & Advance to Total Deposit Ratio | | Investment to Total Deposit Ratio | | Total Credit to Total Deposit Ratio | |
|---|---|---|---|---|---|---|
| | Loan & Advance Rate (%) | (Total Loan & Advance ÷ Total Deposit) × 100% | Investment Rate (%) | (Total Investment ÷ Total Deposit) × 100% | Average Interest Rate (%) | (Total Credit ÷ Total Deposit) × 100% |
| 2005 | 9.045 | 73.59 | 6.558 | 28.58 | 7.801 | 102.17 |
| 2006 | 9.045 | 69.59 | 6.483 | 29.97 | 7.764 | 99.56 |
| 2007 | 9.045 | 72.56 | 5.573 | 26.62 | 7.309 | 99.18 |
| 2008 | 9.137 | 80.52 | 6.397 | 27.74 | 7.767 | 108.27 |
| 2009 | 9.112 | 58.22 | 5.125 | 23.95 | 7.418 | 82.18 |

*Source : Banking & Financial Statistics Published by NRB Mid July 2009 and Annex-I*

From the above table, it is clearly shown that the interest rate on loans and advances of NIBL is stable for three years during this study period. That is, the interest rate on Mid-July 2005 to 2007 is to 9.045 percent and following Mid July 2008 and 2009 is to 9.137 percent and 9.112 percent. While the deposit mobilization towards loan and advances is 73.59 percent, 69.59 percent, 72.56 percent, 80.52 percent and 58.22 percent in Mid July 2005 to 2009 respectively. Since, higher the ratios better the performance, NIBL is walking through the right path with respect to loan and advance to total deposit ratio.

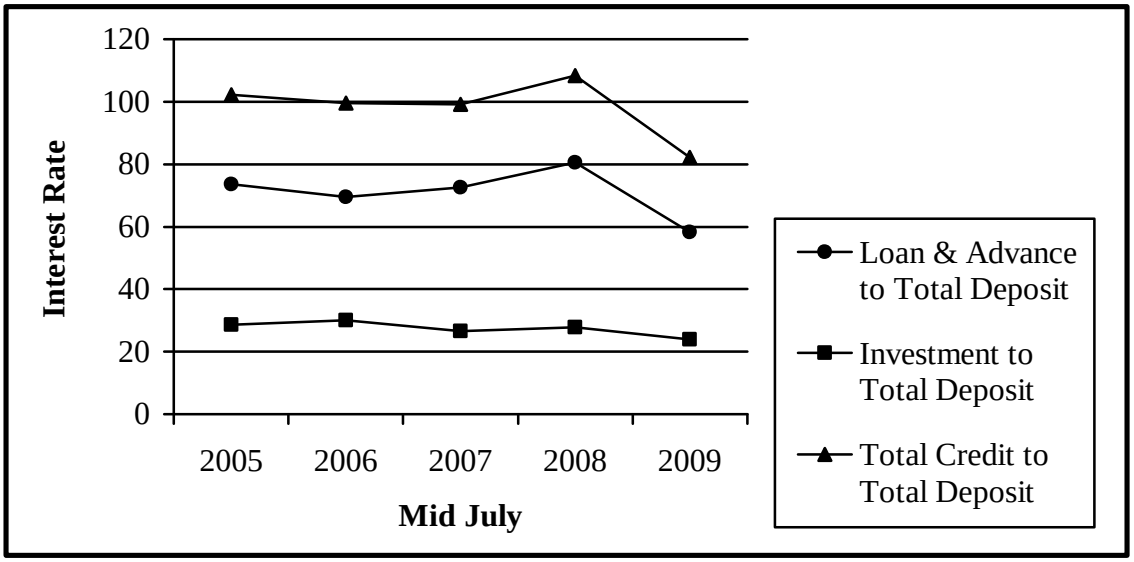
The total investment to total deposit ratio express the ratio of the total deposit mobilized toward investment. The total investment to total deposit ratio of NIBL is 28.58 percent, 29.97 percent, 26.62 percent, 27.74 percent and 23.95 percent at investment rate 6.558 percent, 6.483 percent, 5.573 percent, 6.397 percent and 5.125 percent in Mid July 2005, 2006, 2007, 2008 and 2009 respectively. In the Mid July 2009 the ratio was only 23.93 percent, which indicates that there was not much interested in market oriented interest rate in this year. But this study shows that the

NIBL has improved in investment ratio during this study period. It has increased the investment ratio up to 29.97 percent in Mid July 2006 which is high ratio during this study period.

The overall amount of total credit to total deposit ratio gives a clear figure about the mobility of funds of NIBL. The average credit interest rates are in decreasing trend. That is 7.801 percent, 7.764 percent, 7.309 percent, 7.769 percent and 7.118 percent in Mid July 2005 to 2009. The total credit flow of NIBL in above respective year are 102.17 percent, 99.56 percent, 99.18 percent, 108.27 percent and 82.18 percent. Since, higher the ratio denotes the better performance, NIBL has able to catch the higher ratio in Mid July 2008.

**Figure No. 4.12**

**Funds Management Ratio of NIBL**




*Source : Table No. 4.18*

The above figure represents the fund management ratios of NIBL. These trend lines also increasing and decreasing nature. The higher ratio indicates the managerial efficiency of this bank and low ratio indicates the managerial inefficiency of this bank. The NIBL has mobilized its deposit fund more in loan and advances sectors than investment sectors. The NIBL has high total credit to total deposit ratio in Mid July 2008 and low total credit to total deposit ratio in Mid July 2009.

**Table No. 4.19**

**Interest Rate and Funds Management Ratio of SCBNL**

| Year | Loan & Advance to Total Deposit Ratio | | Investment to Total Deposit Ratio | | Total Credit to Total Deposit Ratio | |
|---|---|---|---|---|---|---|
| | Loan & Advance Rate (%) | (Total Loan & Advance ÷ Total Deposit) × 100% | Invest-ment Rate (%) | (Total Investment ÷ Total Deposit) × 100% | Average Interest Rate (%) | (Total Credit ÷ Total Deposit) × 100% |
| 2005 | 9.857 | 44.07 | 6.558 | 50.17 | 8.207 | 94.25 |
| 2006 | 8.804 | 39.94 | 6.483 | 55.75 | 7.643 | 95.69 |
| 2007 | 8.804 | 43.79 | 5.573 | 55.05 | 7.188 | 98.84 |
| 2008 | 8.768 | 47.87 | 6.397 | 65.38 | 7.582 | 113.25 |
| 2009 | 8.923 | 38.79 | 5.125 | 71.42 | 7.024 | 110.21 |

*Source : Banking & Financial Statistics Published by NRB Mid July 2009 and Annex-I*

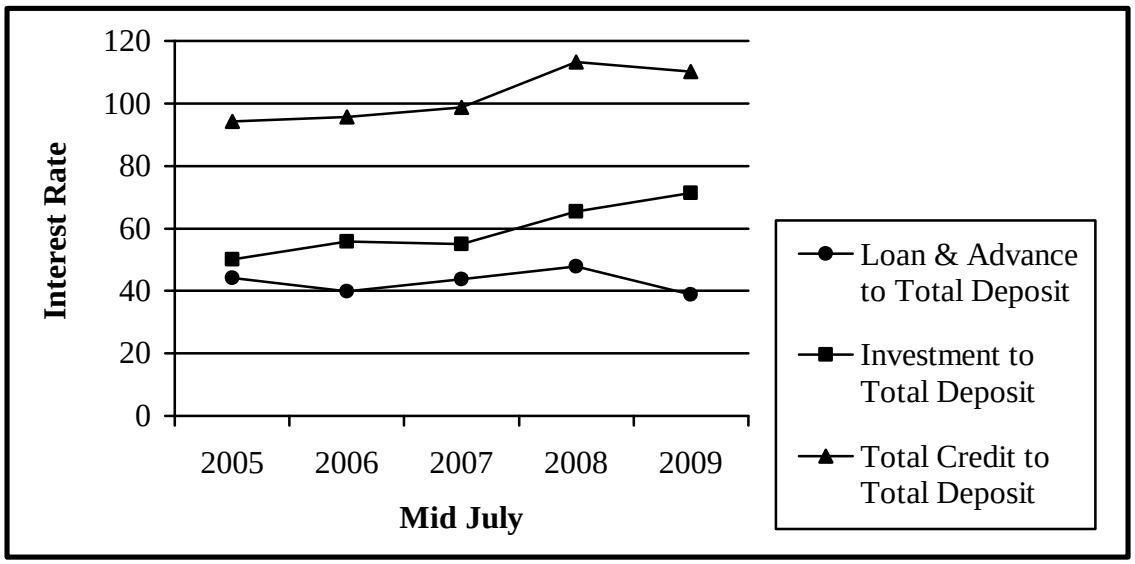
From the above table, it is clear that the loans and advances rate is decreases. Where total loans and advances to total deposit rate is not increased with decreased lending interest rate , which is against the real theory. In the Mid July 2002, the total loans and advances to total deposit ratio is 44.07 percent at lending interest rate 9.857 percent. It means the SCBNL able to mobilize its total deposit towards loans and advances is only 44.07 percent. In the following Mid July 2006 to 2009 the total loans and advances to total deposit ratios are 39.94 percent, 43.79 percent, 47.87 percent and 38.79 percent at the lending rate 8.804 percent, 8.804 percent, 8.768 percent and 8.923 percent respectively.

In the same table the investment to total deposit ratio and investment rate is not increased or decreased in uniform way. The investment to total deposit ratio for Mid July 2005 is 50.17 percent at investment rate 6.558 percent. It means the SCBNL mobilized 50.17 percent of its deposit fund on investment sectors. Similarly, the same ratio in the following Mid July 2006 to 2009 are 55.75 percent, 55.05 percent, 65.38 percent and 71.42 percent at the investment rate 6.483 percent, 5.573 percent, 6.397 percent and 5.125 percent respectively.

In conclusion, it can say that the SCBNL attracts to mobilize its deposit fund on investment sectors than lending sectors. It utilizes excess fund in investment sectors than lending sectors. It shows that the SCBNL has good portfolio management towards investment considering effective interest rate. The total credit to total deposit ratio is aggregate ratio of total lending to total deposit ratio and total investment to total deposit ratio. It shows the total mobilization of fund made by bank at different interest rate. The same ratio for SCBNL is 94.25 percent, 95.69 percent 98.84 percent, 113.25 percent and 110.21 percent at average interest rate 8.207 percent, 7.643 percent, 7.188 percent, 7.582 percent and 7.024 percent in Mid July 2005 to 2009 respectively.

**Figure No. 4.13**

**Funds Management Ratio of SCBNL**




*Source : Table No. 4.19*

The above figure depicts the trend line of fund management ratio of SCBNL. The trend line of total investment to total deposit ratio of SCBNL is higher than the total loan and advances to total deposit ratio. It indicates the SCBNL mobilized its fund more in investment sectors than loan and advances sectors. The total credit to total deposit ratio of SCBNL is higher in Mid July 2008 and lower in Mid July 2005.

**Table No. 4.20**

**Interest Rate and Funds Management Ratio of HBL**

| Year | Loan & Advance to Total Deposit Ratio | | Investment to Total Deposit Ratio | | Total Credit to Total Deposit Ratio | |
|---|---|---|---|---|---|---|
| | Loan & Advance Rate (%) | (Total Loan & Advance ÷ Total Deposit) × 100% | Investment Rate (%) | (Total Investment ÷ Total Deposit) × 100% | Average Interest Rate (%) | (Total Credit ÷ Total Deposit) × 100% |
| 2005 | 9.102 | 54.73 | 6.558 | 22.19 | 7.83 | 76.92 |
| 2006 | 9.102 | 59.6 | 6.483 | 41.16 | 7.792 | 100.77 |
| 2007 | 7.909 | 59.66 | 5.573 | 6.09 | 6.741 | 99.19 |
| 2008 | 7.688 | 64.15 | 6.397 | 55.37 | 7.042 | 119.53 |
| 2009 | 8.886 | 74.47 | 5.125 | 44.15 | 7.005 | 118.62 |

*Source : Banking Financial Statistics Published by NRB Mid July 2009 and Annex-I*

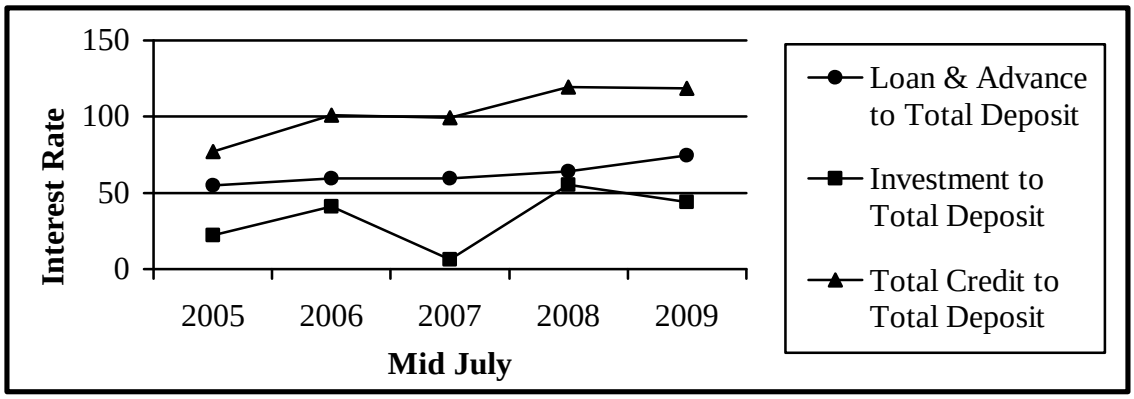
From the above table, it is shown that the total credit to total deposit ratio is 76.92 percent Mid July 2005, which means 76.92 percent of total deposit has been mobilized towards total credits, when the average interest rate was 7.83 percent. In the same year total loan and advance to total deposit ratio was only 54.73 percent and total investment to total deposit ratio was 22.19 percent means 54.73 percent of total deposit mobilization towards loan and investment and 22.19 percent of total deposit mobilized toward investment sectors. In that year the bank has idle funds 23.48 percent of total deposit. Similarly, the total credit to total deposit ratio in the following Mid July are 100.77 percent, 99.19 percent, 119.53 percent and 118.62 percent at the average interest rate 7.792 percent, 6.741 percent, 7.042 percent and 7.005 percent respectively. The higher ratio indicates the better performance. So, in conclusion, it can be said that HBL is improving its performance.

On the same table, in the following year Mid July 2005, 2006, 2007, 2008 and 2009 the total loans and advances to total deposit ratio are 54.73 percent, 59.6 percent, 59.66 percent, 64.15 percent, 74.47 percent on decreasing loan and advances interest rate 9.102 percent, 9.102 percent, 7.909 percent, 7.688 percent an 8.886 percent respectively. As the interest rate is lower each year, the loans and advances to total deposit ratio must be higher as per real theory. At this time, the total loan and advances to total deposit ratio was decreased with decreased interest on lending rate.

From the same table, it is clear that the HBL mobilized its deposit fund into investment sector in following Mid July 2006 to 2009 are 41.16 percent, 6.09 percent, 55.37 percent and 44.15 percent at the investment rate 6.483 percent, 5.573 percent, 6.397 percent and 5.125 percent respectively.

**Figure No. 4.14**

**Funds Management Ratio of HBL**




*Source : Table No. 20*

The above figure demonstrates the trend line of fund management ratios of HBL. The trend line of total loan and advances to total deposit ratio of HBL is higher then the total credit to total deposit ratio. It indicates the HBL mobilized its fund more in loan and advances sectors than investment sectors. The HBL has used very low fund in investment sectors at Mid July 2007. The total credit to total deposit ratio HBL is higher Mid July 2008 and lower in Mid July 2005.

**Table No. 4.21**

**Interest Rate and Funds Management Ratio of NSBIBL**

| Year | Loan & Advance to Total Deposit Ratio | | Investment to Total Deposit Ratio | | Total Credit to Total Deposit Ratio | |
|---|---|---|---|---|---|---|
| | Loan & Advance Rate (%) | (Total Loan & Advance ÷ Total Deposit) × 100% | Investment Rate (%) | (Total Investment ÷ Total Deposit) × 100% | Average Interest Rate (%) | (Total Credit ÷ Total Deposit) × 100% |
| 2005 | 9.35 | 78.25 | 6.558 | 30.16 | 7.874 | 108.41 |
| 2006 | 9.275 | 76.03 | 6.483 | 34.09 | 7.200 | 110.12 |
| 2007 | 8.388 | 87.94 | 5.573 | 20.77 | 6.677 | 108.72 |
| 2008 | 8.150 | 93.42 | 6.397 | 23.09 | 7.273 | 116.51 |
| 2009 | 8.388 | 54.59 | 5.125 | 47.68 | 6.756 | 102.28 |

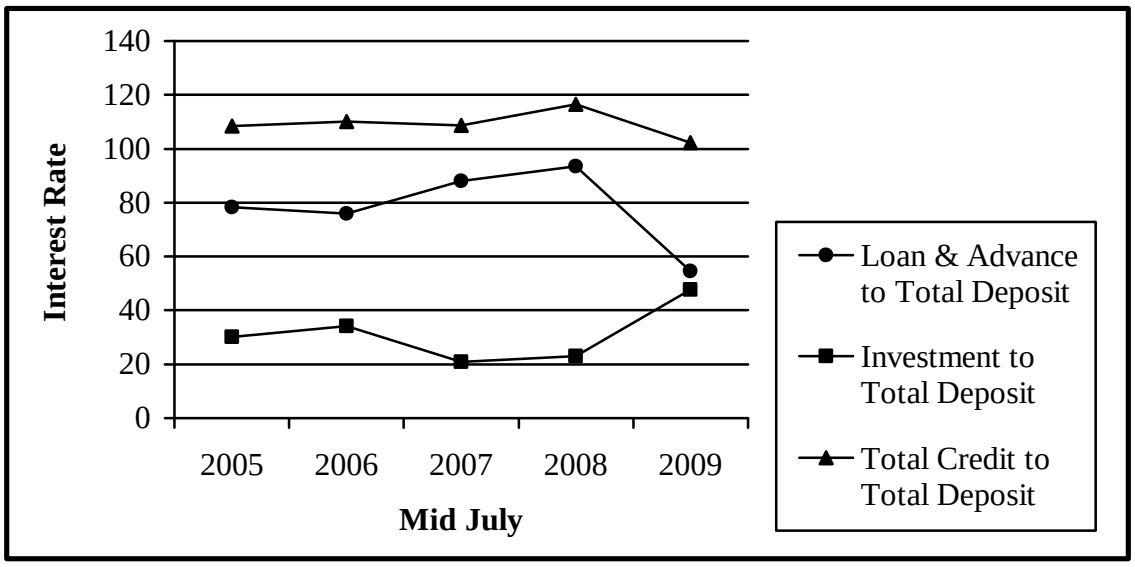
*Source : Banking & Financial Statistics Published by NRB Mid July 2009 and Annex-I*

From the above table, the average interest on credit is in decreasing and increasing 2005, total loans and advances to total deposit ratio denotes that at 9.35 percent interest on loans and advances to total deposit ratio 78.25 percent of total deposit has been mobilized towards loans and advances. Similarly, total investment was 30.16 percent of total deposit at 6.558 percent interest rate was mobilized toward investment. In the same year 108.41 percent of total deposit was mobilized towards total credit at the average rate of 7.874 percent. The loans and advances rate of NSBIBL is decreasing to 9.35 percent, 9.275 percent, 8.388 percent, 8.15 percent and 8.388 percent in Mid July 2005, 2006, 2007, 2008 and 2009 respectively but the total loans and advances to total deposit ratio at the same rate are 78.25 percent, 76.25 percent, 87.94 percent, 93.42 percent and 54.59 percent respectively, which is not in uniform way. This shows that it does not match with the real theory i.e. decrease in interest rate increases in loan amount. Higher ratio shows the better performance.

In the same table, average interest on total credit is declining up to 2007. They are 7.874 percent, 7.20 percent, 6.677 percent respectively. Similarly, the total credit to total deposit ratio are 108.41 percent, 110.12 percent and 108.72 percent in Mid July 2005 and 2007 respectively. It shows that total credit to total deposit ratio are increasing with the decreasing average interest rate apart Mid July 2008. Such a maximum extent of mobilization of credit can create crisis in the operation of the bank and can create economic imbalance.

**Figure No. 4.15**

**Funds Management Ratio of NSBIBL**




*Source : Table No. 4.21*

The above figure shows the trend lines of fund management ratio of NSBIBL. The trend line of total loan & advances to total deposit ratio is higher than the total investment to total deposit ratio. It indicates the NSBIBL has more attracted to loan & advances sectors than investment sectors. The total credit to total deposit ratio of NSBIBL is increasing Mid July 2007 to 2009.

### 4.2.4 Effect of Change in Interest Rate on Net Profit of Nepalese Commercial Banks

The interest rate risk is the exposure of a bank's financial condition. The changes in interest rates affect a bank's earning by changing its net interest income and the level of other interest-sensitive income and operating expenses. The changes in interest rates also affect the underlying value of the bank's assets, liabilities and off-balance sheet instruments. As the interest rate is very dangerous for the banking

performance, it should be managed carefully.

The effect of change in interest rate on net profit of Nepalese Commercial Banks is studied as follows:

**Table No. 4.22**

**Change in Interest Rate and Net Profit of NABIL**

| Year | Interest Rate on Deposit (in %) | Change in Interest Rate on Deposit (in %) | Interest Rate on Loan & Advance (in %) | Change in Interest Rate on Loan & Advance (in %) | Interest Rate on Investment (in %) | Change in Interest Rate on Investment (in %) | Net Profit Amount | Change in Net Profit Amount |
|---|---|---|---|---|---|---|---|---|
| 2005 | 3.196 | - | 9.354 | - | 6.558 | - | 816.5 | 181.4 |
| 2006 | 3.234 | 0.038 | 9.542 | 0.188 | 6.483 | -0.075 | 979.2 | 162.7 |
| 2007 | 2.813 | -0.42 | 8.625 | -0.917 | 5.573 | -0.91 | 654.7 | -324.5 |
| 2008 | 4.656 | 1.843 | 8.708 | 0.0983 | 6.397 | 0.824 | 750.4 | 95.7 |
| 2009 | 5.036 | 0.38 | 9.778 | 1.07 | 5.125 | -1.272 | 1033.8 | 283.4 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table helps to find out the effect of change in interest rate on net profit of NABIL Bank. In the Mid-July 2009 the NABIL Bank has increased its net profit by 283.4 million, which is great improvement for it. In the same period, the interest rates on three variables i.e. deposit rate, loans and advances rate and investment rate were increased by 0.107 percent, 0.854 percent and decreased by -0.075 percent respectively. In the Mid-July 2006 deposit rate and loan advance 0.38 percent rate increased by 0.038 and 0.188, but investment rate in decreased by -1.372 percent. As a result, net profit for this period increased by 162.7 million. In the Mid-July 2007 deposit rate, investment rate and loan and advance rate decreased by 0.42 percent, 0.917 percent and -0.91 percent respectively. As a result net profit decreased by -324.5 million. In the Mid-July 2008 the deposit rate investment rate and loan and advances rate increased by 1.843 million, 0.083 percent and 0.824 percent respectively. As a result, the net profit of bank increased by 95.7 million. Similarly, in the Mid-July 2008. This analysis shows that the little change in interest rate will affect more in net profit of bank. This table also shows a conflict result to 'effect of change in interest rate on profitability of bank' in the sense that the bank increased its net profit by 283.4 million by decreasing interest rate on investment in Mid-July 2009. In

the same way the bank decreased its net profit by 324.5 million by decreasing interest rate on three variables in Mid-July 2007.

**Table No. 4.23**

**Change in Interest Rate and Net Profit of NIBL**

| Year | Interest Rate on Deposit (in %) | Change in Interest Rate on Deposit (in %) | Interest Rate on Loan & Advance (in %) | Change in Interest Rate on Loan & Advance (in %) | Interest Rate on Investment (in %) | Change in Interest Rate on Investment (in %) | Net Profit Amount | Change in Net Profit Amount |
|---|---|---|---|---|---|---|---|---|
| 2005 | 2.661 | - | 9.045 | - | 6.558 | - | 265.5 | - |
| 2006 | 2.656 | -0.005 | 9.045 | 0 | 6.483 | -0.075 | 385.1 | 119.6 |
| 2007 | 2.656 | 0 | 9.045 | 0 | 5.573 | -0.91 | 515.7 | 130.6 |
| 2008 | 3.156 | 0.5 | 9.1375 | 0.0925 | 6.397 | 0.824 | 750.4 | 234.7 |
| 2009 | 3.093 | -0.063 | 9.1125 | -0.025 | 5.125 | -1.272 | 914.6 | 164.2 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table shows that the effect of change in interest rate on profitability of NIBL. Higher profitability of bank indicates the better performance of this bank. So, it can conclude that the NIBL performance during these periods is improving and better. In the starting of this study period Mid-July 2005, the bank was in profit 265.5 million but in the following year Mid-July 2006 it able to earn 119.6 million more than previous year by making constant interest rate on deposit and lending, when investment rate was decreased by -0.075 percent. On the same cases, in the Mid-July 2007, the NIBL able to increase it net profit by 130.6 million. Similarly, in the Mid-July 2006, the bank able to increased its net profit by 119.6 million by decreasing deposit rate by 0.005 percent and making constant lending rate, when investment rate provided by NRB is decreased by 1.272 percent. In the same way, the bank again able to increase its net profit by 130.6 million by making constant deposit rate and lending rate, when investment rate is decreased by -0.91 percent in Mid-July 2007.

**Table No. 4.24**

**Change in Interest Rate and Net Profit of SCBNL**

| Year | Interest Rate on Deposit (in %) | Change in Interest Rate on Deposit (in %) | Interest Rate on Loan & Advance (in %) | Change in Interest Rate on Loan & Advance (in %) | Interest Rate on Investment (in %) | Change in Interest Rate on Investment (in %) | Net Profit Amount | Change in Net Profit Amount |
|---|---|---|---|---|---|---|---|---|
| 2005 | 1.719 | -0.131 | 9.857 | -0.258 | 6.5558 | - | 537.9 | -18.8 |
| 2006 | 1.75 | 0.031 | 8.804 | -1.053 | 6.483 | -0.075 | 662.2 | 124.3 |
| 2007 | 1.75 | 0 | 8.804 | 0 | 5.573 | -0.91 | 692.1 | 29.9 |
| 2008 | 1.828 | 0.078 | 8.768 | -0.026 | 6.397 | 0.824 | 814.4 | 122.3 |
| 2009 | 1.9306 | 0.1026 | 8.923 | 0.155 | 5.125 | -1.272 | 1028.3 | 213.9 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

In the above table shows that the effect of change in interest rate on profitability of SCBNL for five times period. SCBNL increased its net profit by 124.3 million and 29.9 million in Mid-July 2006 and 2007 respectively. The interest structure in Mid-July 2006 for SCBNL was decreasing lending and investment and slightly increasing deposit rate and in Mid-July 2007, investment rate was still increasing but deposit and lending rate were remain constant. In 2008 and 2009 two increasing variable (deposit rate and lending rate) are increasing but interest rate on investment was increasing as well as the net profit also increasing from 122.3 to 213.9 in 2008 and 2009.

**Table No. 4.25**

**Change in Interest Rate and Net Profit of HBL**

| Year | Interest Rate on Deposit (in %) | Change in Interest Rate on Deposit (in %) | Interest Rate on Loan & Advance (in %) | Change in Interest Rate on Loan & Advance (in %) | Interest Rate on Investment (in %) | Change in Interest Rate on Investment (in %) | Net Profit Amount | Change in Net Profit Amount |
|---|---|---|---|---|---|---|---|---|
| 2005 | 2.875 | -1.139 | 9.102 | -1.656 | 6.558 | - | 752.3 | 31.9 |
| 2006 | 2.688 | -0.187 | 9.102 | 0 | 6.483 | -0.075 | 513.8 | -238.5 |
| 2007 | 2.688 | 0 | 7.909 | -1.193 | 5.573 | -0.91 | 828.4 | 314.6 |
| 2008 | 3.219 | 0.531 | 7.688 | -0.221 | 6.397 | 0.824 | 1050.8 | 222.4 |
| 2009 | 4.313 | 1.094 | 8.886 | 1.198 | 5.125 | -1.272 | 1182.1 | 131.3 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table shows that the change in net profit amount with the change in interest rate of HBL in different Mid-July. The interest rate structure on deposit rate is decreasing and constant. The changes in interest rate on deposit are -0.187 percent, 0.531 percent and 1.094 percent in Mid-July 2006, 2007, 2008 and 2009 respectively. The interest rate structure on lending is decreasing, increasing and constant. The changes in interest rate on lending are -1.193 percent, -1.193 percent, -0.221 percent and 1.198 percent in Mid-July 2006, 2007, 2008 and 2009 respectively. Similarly, the interest rate structure on investment is decreasing. The changes in interest rate on investment are -0.075 percent, -0.91 percent, 0.824 percent and -1.272 percent in Mid-July 2006, 2007, 2008 and 2009 respectively. On this structure of interest rate, the HBL has changes its net profit amount by -238.5 million, 314.6 million, 222.4 million and 131.3 million in Mid-July 2006, 2007, 2008 and 2009 respectively. It clears that the HBL has increased its net profit in each fiscal year apart Mid-July 2006.

**Table No. 4.26**

**Change in Interest Rate and Net Profit of NSBIBL**

| Year | Interest Rate on Deposit (in %) | Change in Interest Rate on Deposit (in %) | Interest Rate on Loan & Advance (in %) | Change in Interest Rate on Loan & Advance (in %) | Interest Rate on Investment (in %) | Change in Interest Rate on Investment (in %) | Net Profit Amount | Change in Net Profit Amount |
|---|---|---|---|---|---|---|---|---|
| 2005 | 3.042 | -0.583 | 9.35 | -0.15 | 6.558 | - | 4.6 | -129.2 |
| 2006 | 3.167 | 0.125 | 9.275 | -0.075 | 6.483 | -0.075 | 132 | 127.4 |
| 2007 | 3.5 | 0.333 | 8.388 | -0.887 | 5.573 | -0.91 | 359.9 | 227.9 |
| 2008 | 3.883 | 0.383 | 8.15 | -0.238 | 6.397 | 0.824 | 255.1 | -104.8 |
| 2009 | 4.25 | 0.367 | 8.388 | 0.238 | 5.125 | -1.272 | 337.1 | 82.0 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table shows that the change in net profit amount with the change in interest rate of NSBIBL and investment rate of NRB in different Mid-July. The interest rate structure on deposit rate is 0.1255, 0.333, 0.383, 0.367 in Mid-July 2006, 2007, 2008 and 2009 respectively. The interest rate structure on lending is decreasing during this study period. The change in lending rate are -0.075 percent, -0.887 percent, -0.238 and 0.238 in Mid-July 2006, 2007, 2008 and 2009 respectively. Similarly, the interest rate structure on investment is also decreasing. The changes

in interest rate on investment are -0.075 percent, -0.91 percent, 0.824 percent and -1.272 in Mid-July 2006, 2007, 2008 and 2009 respectively. On this interest structure the NSBIBL has net profit changed by 127.4 million, 227.9 million, -104.8 million and 82 million in Mid-July 2006, 2007, 2008 and 2009 respectively. It shows that this bank has most improve it performance from Mid-July 2006.

**Table No. 4.27**

**Profitability Ratio of NABIL**

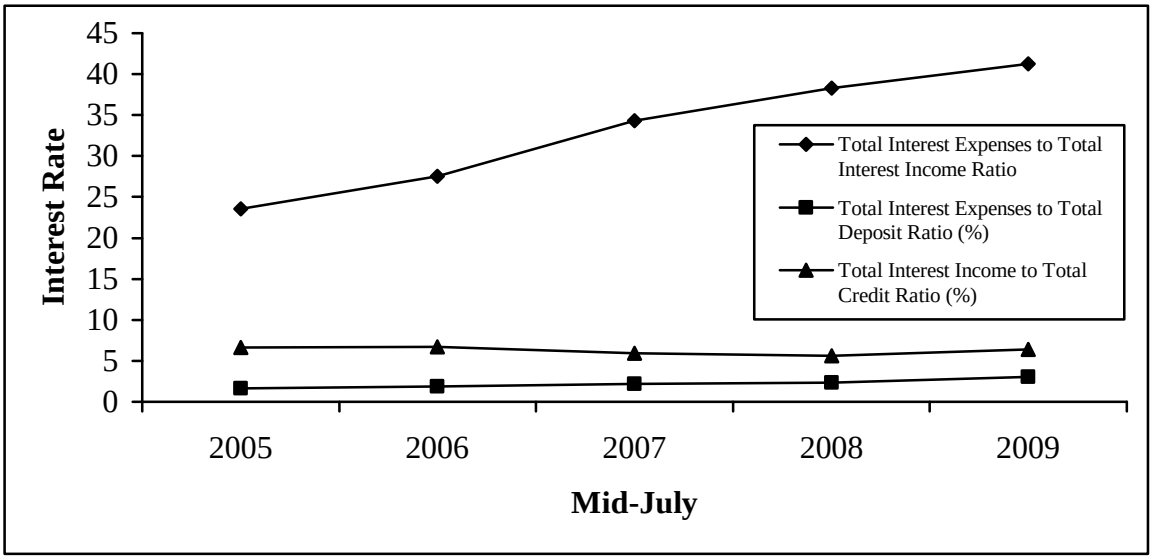
| Year | Total Interest Expenses (Rs.) | Total Interest Income (Rs.) | Total Interest Expenses to Total Interest Income Ratio | Total Interest Expenses to Total Deposit Ratio (%) | Total Interest Income to Total Credit Ratio (%) |
|---|---|---|---|---|---|
| 2005 | 243.4 | 1033.3 | 23.56 | 1.67 | 6.63 |
| 2006 | 357.0 | 1296.4 | 27.54 | 1.85 | 6.68 |
| 2007 | 502.7 | 1465.0 | 34.31 | 2.15 | 5.90 |
| 2008 | 758.4 | 1978.7 | 38.32 | 2.37 | 5.58 |
| 2009 | 1152.1 | 2794.8 | 41.22 | 3.08 | 6.42 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table shows the profitability analysis on NABIL Bank. The total interest expenses are affected by deposit rate and deposit amount. Similarly, the total interest incomes are affected by average rate and total credit amount. The interest expenses to interest incomes of banks directly related to its profitability. The higher profitability ratio indicates the good performance of banks. The total interest expenses and total interest income of NABIL bank are in increasing trends. So, the total interest expenses ratio of NABIL is increasing trend is in ups and downs trends. The total interest expenses to total interest income indicate how much total interest expenses paid out of total interest income. It is 23.56 percent, 27.54 percent, 34.31 percent, 38.32 percent and 41.22 percent in Mid-July 2005, 2006, 2007, 2008 and 2009 respectively. The total interest expenses to total deposit ratio of NABIL Bank indicates how much the interest expenses to total deposit ratio of NABIL Bank. It is 1.67 percent, 1.85 percent, 2.15 percent, 2.37 percent and 3.08 percent in Mid-July 2005, 2006, 2007, 2008 and 2009 respectively. Similarly, the total interest income to total credit ratio of NABIL Bank indicates ratio of amount earned on total credit amount of NABIL Bank. It is 6.63 percent, 6.68 percent, 5.90 percent, 5.58 percent and 6.42 percent in Mid-July 2005, 2006, 2007, 2008 and 2009 respectively.

**Figure No. 4.16**

**Profitability Ratio of NABIL**




*Source : Table No. 4.27*

The above figure shows the trend lines of profitability ratio of NABIL. The total interest expenses to total interest income ratio is higher than the total interest expenses to total deposit ratio and total interest income to total credit ratio. Similarly, the trend line of total interest expenses to total deposit ratio is lower than the trend line of total interest income to total credit ratio. It notifies that the NABIL has good earning performance.

**Table No. 4.28**

**Profitability Ratio of NIBL**

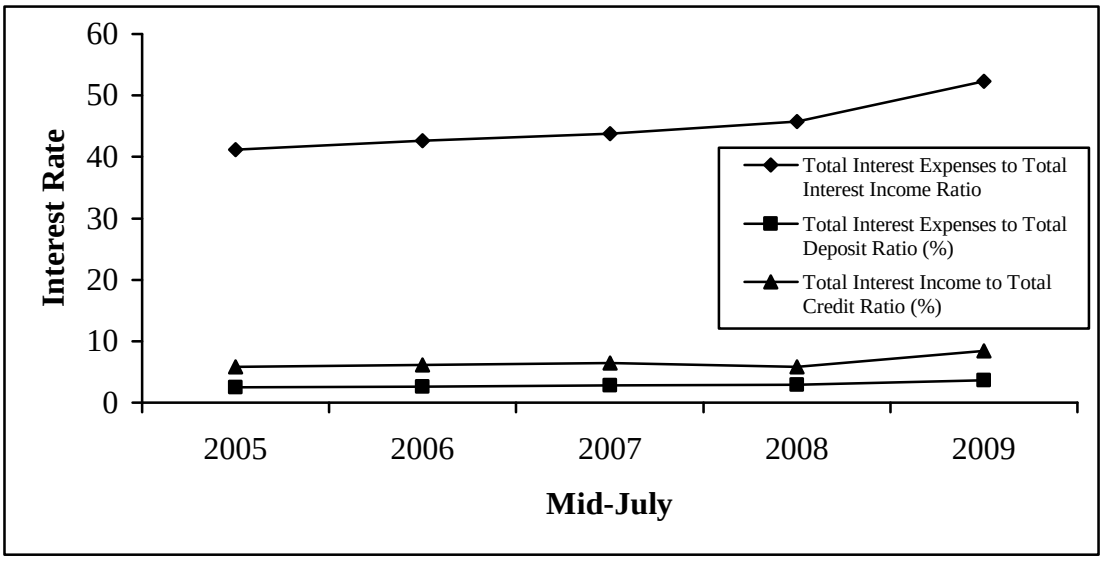
| Year | Total Interest Expenses (Rs.) | Total Interest Income (Rs.) | Total Interest Expenses to Total Interest Income Ratio | Total Interest Expenses to Total Deposit Ratio (%) | Total Interest Income to Total Credit Ratio (%) |
|---|---|---|---|---|---|
| 2005 | 350.8 | 851.4 | 41.20 | 2.46 | 5.85 |
| 2006 | 491.4 | 1153.5 | 42.60 | 2.60 | 6.12 |
| 2007 | 686.4 | 1566.3 | 43.82 | 2.80 | 6.45 |
| 2008 | 991.8 | 2166.1 | 45.78 | 2.87 | 5.80 |
| 2009 | 1686.4 | 3222.6 | 52.32 | 3.61 | 8.39 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table shows that the profitability analysis of NIBL. The total interest expenses and total interest income of NIBL Bank are increasing trends. It indicates the NIBL has utilized its collected fund in more quantity. The total interest expenses to total interest income ratio NIBL is 41.20 percent, 42.60 percent, 45.78 percent and 52.32 percent in Mid July 2005, 2006, 2007, 2008 and 2009 respectively. The total interest expenses to total deposit ratio of NIBL indicates the ratio of amount paid on deposited amount of NIBL. It is 2.46 percent, 2.60 percent, 2.80 percent, 2.87 percent and 3.16 percent in Mid July 2005, 2006, 2007, 2008 and 2009 respectively. Similarly, the total interest income to total credit ratio of NIBL indicates ratio of amount earned on total credit amount of NIBL. It is 5.85 percent, 6.12 percent, 6.45 percent, 5.80 percent and 8.39 percent in Mid July 2005, 2006, 2007, 2008 and 2009 respectively.

**Figure No. 4.17**

**Profitability Ratio NIBL**




*Source : Table No. 4.28*

The above figure shows the trend line of profitability ratio of NIBL. The trend line of total interest expenses to total interest income ratio is ups and downs nature. The lower ratio is favourable from point of view of profitability. The trend line of total interest expenses to total deposit ratio is lower than the trend line of total interest income to total credit ratio. It indicates the NIBL has god earning performance.

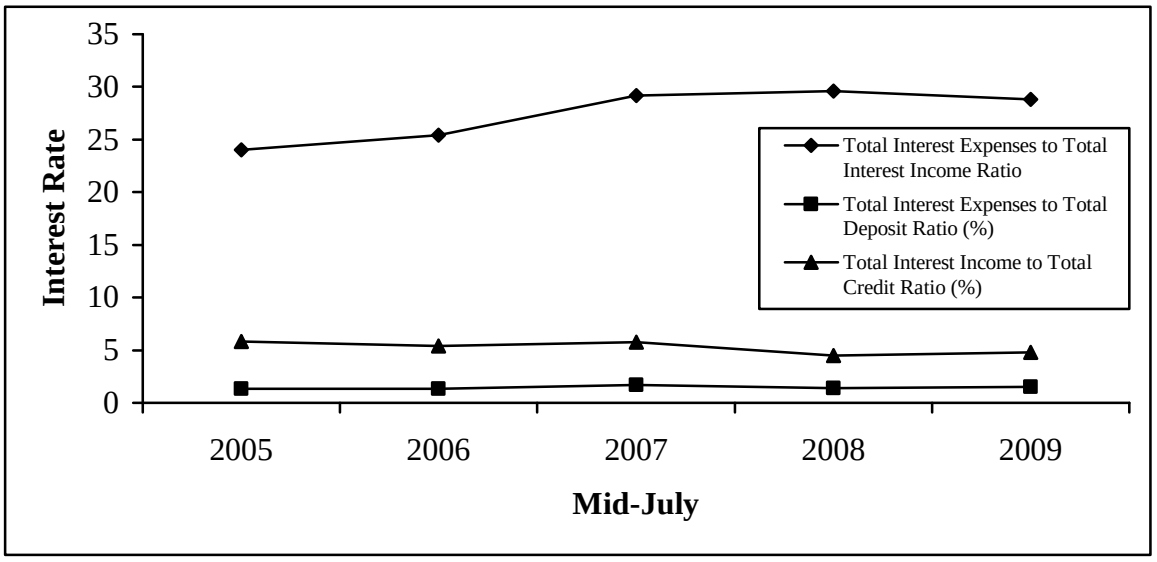
**Table No. 4.29**
**Profitability Ratio of SCBNL**

| Year | Total Interest Expenses (Rs.) | Total Interest Income (Rs.) | Total Interest Expenses to Total Interest Income Ratio | Total Interest Expenses to Total Deposit Ratio (%) | Total Interest Income to Total Credit Ratio (%) |
|---|---|---|---|---|---|
| 2005 | 254.2 | 1058.6 | 24.01 | 1.31 | 5.81 |
| 2006 | 302.2 | 1189.1 | 25.41 | 1.31 | 5.39 |
| 2007 | 411.4 | 1410.8 | 29.16 | 1.67 | 5.79 |
| 2008 | 471.7 | 1591.2 | 29.60 | 1.40 | 4.46 |
| 2009 | 543.8 | 1887.2 | 28.81 | 1.51 | 4.77 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

The above table represents the profitability analysis of SCBNL. The total interest expenses and total interest income are bank's expenditure and earning on deposit collection and deposit mobilization respectively. The total interest expenses to total interest income ratio of SCBNL is 24.01 percent, 25.41 percent, 29.16 percent, 29.60 percent and 28.81 percent in Mid July 2005, 2006, 2007, 2008 and 2009 respectively. The total interest expenses to total deposit ratio of SCBNL is 1.31 percent, 1.31 percent, 1.67 percent, 1.40 percent and 1.51 percent in Mid July 2005 to 2009 respectively. Similarly, the total interest income to total credit of SCBNL indicates ratio of amount earned on total credit amount of SCBNL. It is 5.81 percent, 5.39 percent, 5.79 percent, 4.46 percent and 4.77 percent in Mid July 2005 to 2009 respectively.

**Figure No. 4.18**
**Profitability Ratio of SCBNL**




*Source : Table No. 4.29*

The above figure represents the trend line of profitability ratio of SCBNL. The trend line of total interest expenses to total interest income ratio is ups and downs nature. The lower ratio is favourable from point of view of profitability. The trend line of total interest expenses to total deposit ratio is lower than the trend line of total interest income to total credit ratio. It indicates the SCBNL has good earning performance.

**Table No. 4.30**

**Profitability Ratio of HBL**

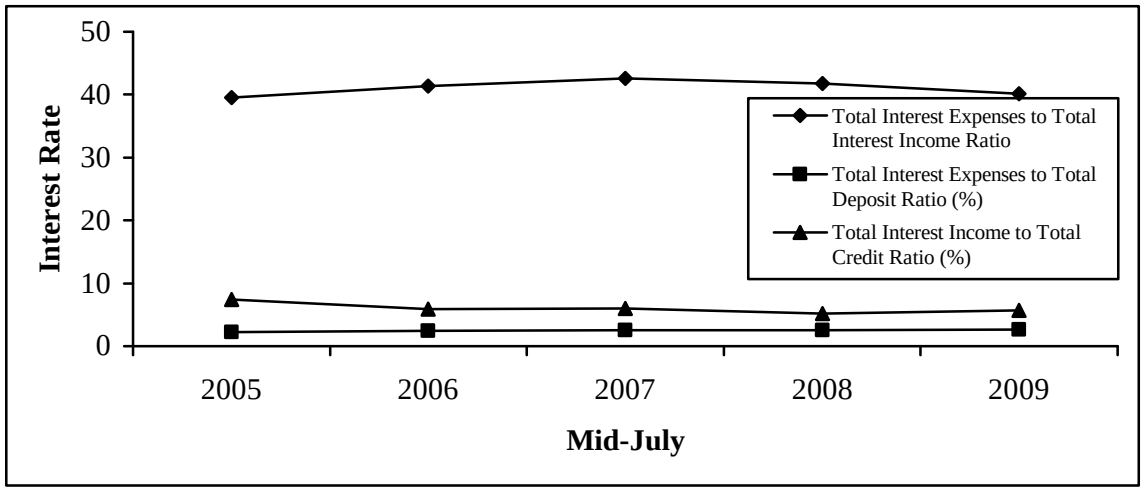
| Year | Total Interest Expenses (Rs.) | Total Interest Income (Rs.) | Total Interest Expenses to Total Interest Income Ratio | Total Interest Expenses to Total Deposit Ratio (%) | Total Interest Income to Total Credit Ratio (%) |
|---|---|---|---|---|---|
| 2005 | 556.3 | 1407.7 | 39.52 | 2.24 | 7.37 |
| 2006 | 645.8 | 1562.1 | 41.34 | 2.44 | 5.86 |
| 2007 | 755.5 | 1776 | 42.54 | 2.53 | 5.99 |
| 2008 | 824.0 | 1970.9 | 41.80 | 2.57 | 5.16 |
| 2009 | 934.8 | 2330.5 | 40.11 | 2.69 | 5.65 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

Above table explains up and down trend of total interest expenses and total interest income in each Mid July 2005 to 2009. That indicates the performance of HBL is not progressing. The total interest expenses to total interest income ratio of HBL is 39.52 percent, 41.34 percent, 41.8 percent, 41.8 percent and 40.11 percent in Mid July 2005 to 2009 respectively. The total interest expenses to total deposit ratio of HBL is 2.24 percent, 2.44 percent, 2.53 percent, 2.57 percent and 2.69 percent in Mid July 2005 to 2009 respectively. Similarly, the total interest income to total credit ratio is 7.37 percent, 5.86 percent, 5.99 percent, 5.16 percent and 5.65 percent in Mid July 2005 to 2009 respectively.

**Figure No. 4.19**

**Profitability Analysis of HBL**




*Source : Table No. 4.30*

The above figure represents the trend line of profitability ratio of HBL. The trend line of total interest expenses to total interest income ratio is decreased in Mid July 2005 and then increased slightly. The lower ratio is favourable from point of view of profitability. The trend line of total interest expenses to total deposit ratio is lower than the trend line of total interest income to total credit ratio. It indicates the HBL has good earning performance.

**Table No. 4.31**

**Profitability Ratio of NSBIBL**

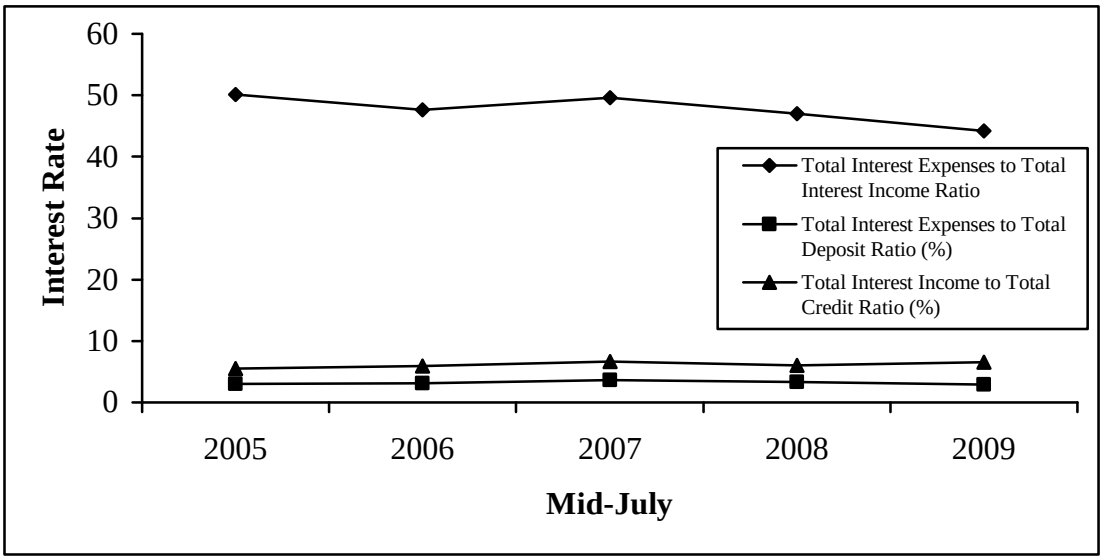
| Year | Total Interest Expenses (Rs.) | Total Interest Income (Rs.) | Total Interest Expenses to Total Interest Income Ratio | Total Interest Expenses to Total Deposit Ratio (%) | Total Interest Income to Total Credit Ratio (%) |
|---|---|---|---|---|---|
| 2005 | 258.4 | 516 | 50.08 | 2.99 | 5.51 |
| 2006 | 334.8 | 703.1 | 47.62 | 3.09 | 5.88 |
| 2007 | 412.2 | 831 | 49.60 | 3.60 | 6.68 |
| 2008 | 454.9 | 966.9 | 47.04 | 3.31 | 6.05 |
| 2009 | 824.2 | 1864.2 | 44.21 | 2.94 | 6.52 |

*Source : Various Banking & Financial Statistics Published by NRB Mid July and Annex-I*

Above table depicts that the total interest expenses and total interest income of NSBIBL Bank is increasing and decreasing trend. Even this bank has increased its total interest expenses from Rs. 258.4 million to Rs. 824.2 million and total interest income from Rs. 516 million to Rs. 1864.2 million. The total interest expenses to total interest income ratio of NSBIBL bank is 50.08 percent, 47.62 percent, 49.60 percent, 47.04 percent and 44.21 percent in Mid July 2005 to 2009 respectively. The total interest expenses to total deposit ratio of NSBIBL bank is 2.99 percent, 3.09 percent, 3.60 percent, 3.31 percent and 2.54 percent in Mid July 2005 to 2009 respectively. Similarly, the total interest income to total credit ratio is 5.51 percent, 5.88 percent, 6.68 percent, 6.05 percent and 6.52 percent in Mid July 2005 to 2009 respectively.

**Figure No. 4.20**

**Profitability Ratio of NSBIBL**




*Source : Table No. 4.31*

The above figure displays the trend line of profitability ratios of NSBIBL. The trend line of total interest expenses to total interest income ration is decreasing, which is favourable from the point of view of profitability. The trend line of total interest expenses to total deposit ratio is lower than the trend line of total interest income to total credit ration. It indicates the NSBIBL has good earning performance.

## 4.3 Presentation and Analysis of Primary Data

In this section primary data is analyzed. The primary data provide more accurate and uniform information in research. The primary data can be collected with using different method. In this study, the primary data are collected from the direct personal interview and information through correspondents' methods with the Bankers, financial managers and lecturer whose have a good knowledge upon the effect of interest rate. Please see annex-III for questionnaire and respondents' viewpoints.

### 4.3.1 Suitability of Interest Rate Determining Process in Nepalese Commercial Banks

On the questionnaires collection, the first questionnaire is setup to get the result on suitable of interest rate determining process in Nepalese Commercial Banks. The following results are obtained by research.

**Table No. 4.32**

**Suitable of Interest Rate Determining Process**

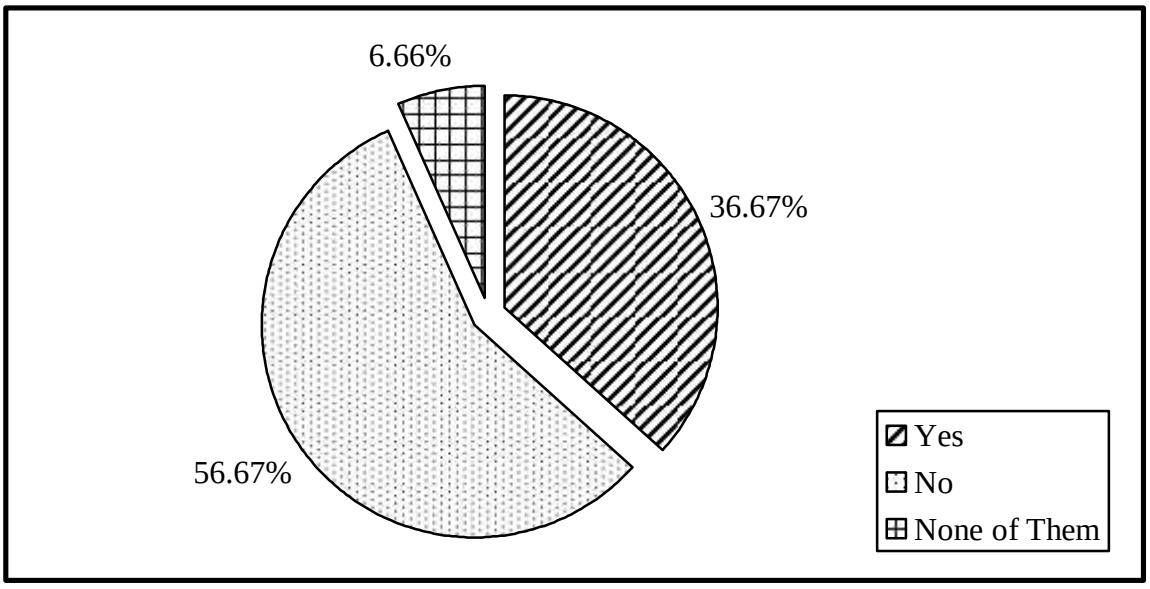
| Opinion / Respondent | Yes | No | None of Them | Total |
|---|---|---|---|---|
| Bankers | 6 | 4 | - | 10 |
| Finance Managers | 3 | 7 | - | 10 |
| Lecturer | 2 | 6 | 2 | 10 |
| Total | 11 | 17 | 2 | 30 |
| Percentage (%) | 36.67 | 56.67 | 6.66 | 100 |

*Source : Field Study, 2010*

The above table shows the respondents' viewpoints on suitability of interest rate determining process in Nepalese Commercial Banks. The total respondents viewpoints on 'Yes', 'No' and 'None of them' are 11 numbers, 17 numbers and 2 numbers respectively. The percentages of respondents are shown in following figure.

**Figure No. 4.21**

**Suitability of Interest Rate Determining Process**




*Source : Table No. 4.32*

The above figure represents the suitability of interest rate determining process in Nepalese Commercial Banks. The respondent viewpoint on 'Yes', 'No' and 'None of them' is 36.67 percent and 6.66 percent respectively. The total respondent viewpoint in 'No' result is greater than 'Yes' and 'None of them' result.

### 4.3.2 Trend Line of Interest Rate Structure of Nepalese Commercial Bank

The second questionnaire is setup to know the outcomes on interest rate structure of Nepalese Commercial Bank. The following results are obtained by research.

**Table No. 4.33**

**Interest Rate Structure of Nepalese Commercial Banks**

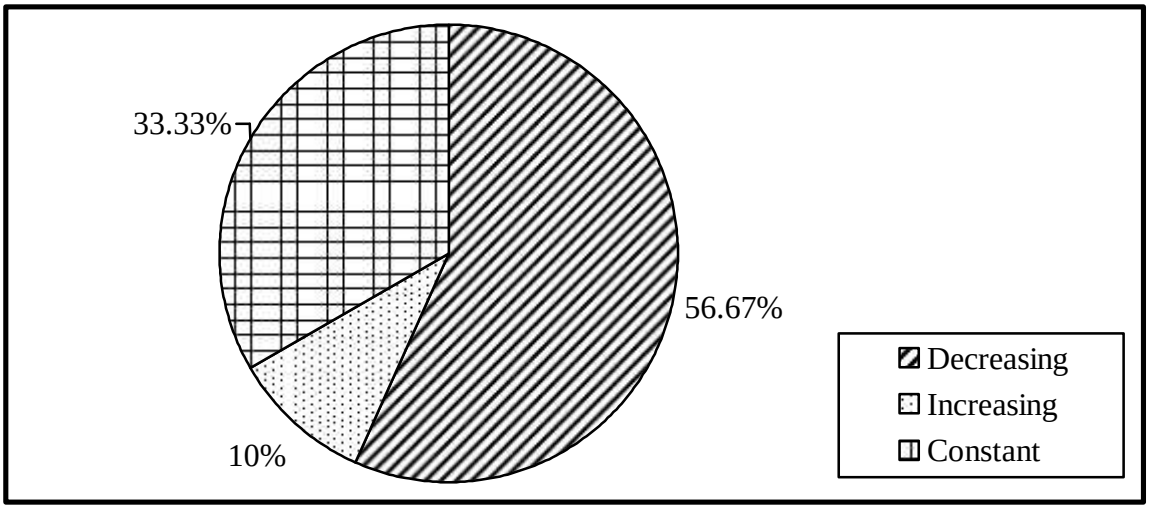
| Opinion / Respondent | Decreasing | Increasing | Constant | Total |
|---|---|---|---|---|
| Bankers | 6 | - | 4 | 10 |
| Finance Managers | 7 | 1 | 2 | 10 |
| Lecturer | 4 | 2 | 4 | 10 |
| Total | 17 | 3 | 10 | 30 |
| Percentage (%) | 56.67 | 10 | 33.33 | 100 |

*Source : Field Study, 2010*

The above table shows the respondents' opinions on trend line of interest rate structure in Nepalese Commercial Banks. The total respondents opinion on 'Decreasing', 'Increasing' and 'Constant' are 17 numbers, 3 numbers and 10 numbers respectively. The percentages of respondent are shown in following figure.

**Figure No. 4.22**

**Interest Rate Structure of Nepalese Commercial Banks**




*Source : Table No. 4.33*

The above figure represents the interest rate structure of Nepalese Commercial Banks. The respondents' viewpoint in decreasing, increasing and constant is 56.67 percent, 10 percent and 33.33 percent respectively. The total respondent viewpoint in 'Decreasing' trend in greater than 'Increasing' trend and 'Constant' trend.

### 4.3.3 Relationship of Interest Rate with Deposit Collection

The third questionnaire is related to relationship of interest rate with deposit collection of Commercial Banks in Nepal. The outcomes from different respondents are presented in table and figure below:

**Table No. 4.34**

**Relationship between Interest Rate and Deposit**

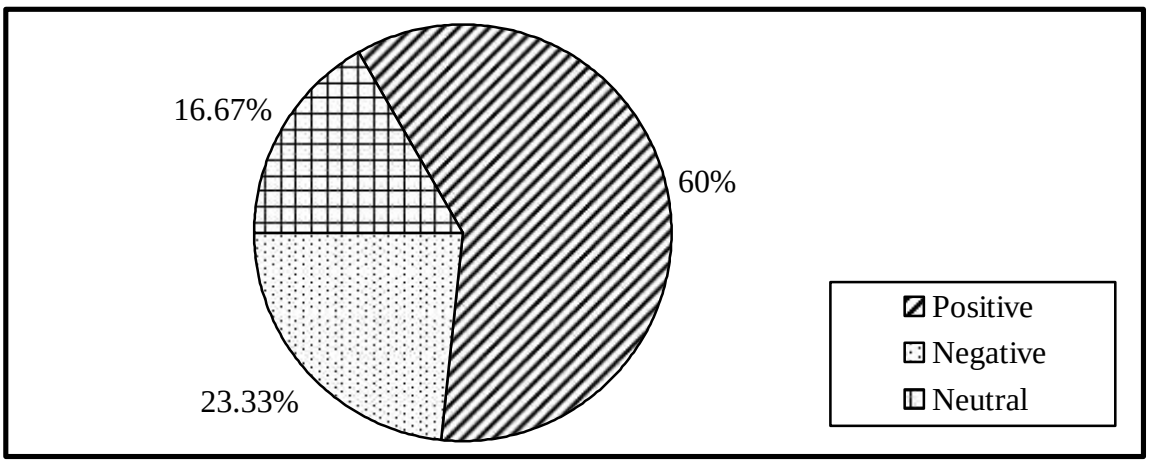
| Option / Respondent | Positive | Negative | Neutral | Total |
|---|---|---|---|---|
| Bankers | 6 | 2 | 2 | 10 |
| Finance Managers | 4 | 4 | 2 | 10 |
| Lecturer | 8 | 1 | 1 | 10 |
| Total | 18 | 7 | 5 | 30 |
| Percentage (%) | 60 | 23.33 | 16.67 | 100 |

*Source : Field Study, 2010*

The above table shows the respondents' opinion on relationship of interest rate with deposit collection. The total respondents opinion on 'Positive', 'Negative' and 'Neutral' and 18 numbers, 7 numbers and 5 numbers respectively. The percentages of respondent are shown in following figure.

**Figure No. 4.23**

**Relationship between Interest Rate and Deposit**




*Source : Table No. 4.34*

The above figure respondents the relationship of interest rate with deposit collection. The respondent viewpoint on 'Positive', 'Negative' and 'Neutral' is 60 percent, 23.33 percent and 16.67 percent respectively. The total respondent viewpoint in 'Positive' is greater than 'Negative' and 'Negative' is greater than 'Neutral'.

### 4.3.4 Relationship of Interest Rate with Bank Investment

The forth questionnaire is related to relationship of interest rate with Banks' Investment. The outcomes from different respondents are presented in table and figure below.

**Table No. 4.35**

**Relationship between Interest Rate and Bank Investment**

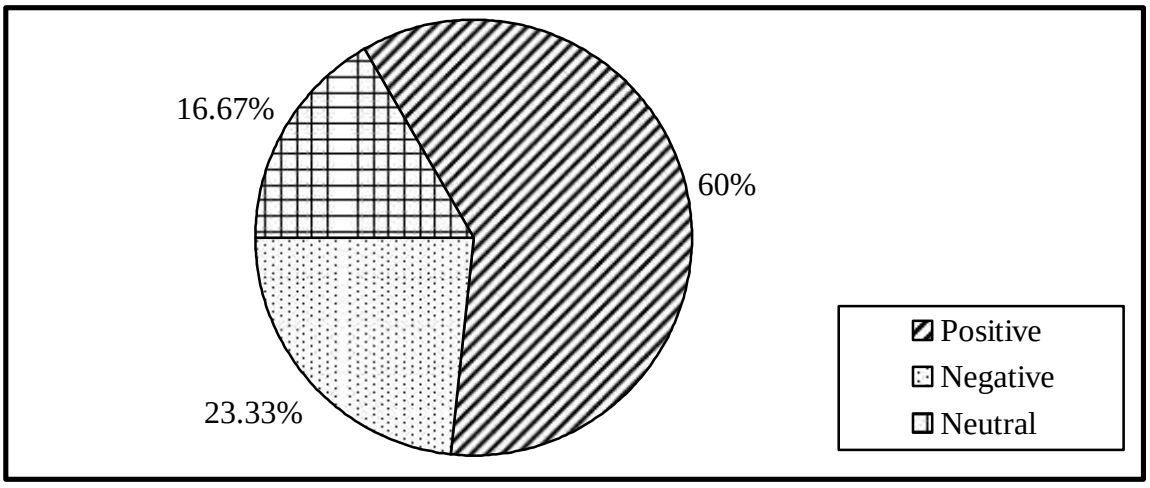
| Opinion / Respondent | Positive | Negative | Neutral | Total |
|---|---|---|---|---|
| Bankers | 6 | 2 | 2 | 10 |
| Finance Managers | 4 | 4 | 2 | 10 |
| Lecturer | 8 | 1 | 1 | 10 |
| Total | 18 | 7 | 5 | 30 |
| Percentage (%) | 60 | 23.33 | 16.67 | 100 |

*Source : Field Study, 2010*

The above table shows the respondents' viewpoint on relationship of interest rate with deposit collection. The total respondents viewpoint on 'Positive', 'Negative' and 'Neutral' are 18 numbers, 7 numbers and 5 numbers respectively. The percentages of respondent are shown in following figure.

**Figure No. 4.24**

**Relationship between Interest Rate and Bank Investment**




*Source : Table No. 4.35*

The above figure represents the relationship of interest rate with Bank Investment. The respondent viewpoint in 'Positive', 'Negative' and 'Neutral' are 60 percent, 23.33 percent and 16.67 percent respectively. The total respondent viewpoint in 'Positive' is greater than 'Negative' and 'Negative' is greater than 'Neutral'.

### 4.3.5 Relationship of Interest Rate with Loan and Advance

The fifth questionnaire is related to relationship of interest rate with loan and advances. The options on this questionnaire are 'Positive', 'Negative' and 'Neutral'. The viewpoints of different respondents are depicted in table and figure below.

**Table No. 4.36**

**Relationship between Interest Rate and Loan and Advances**

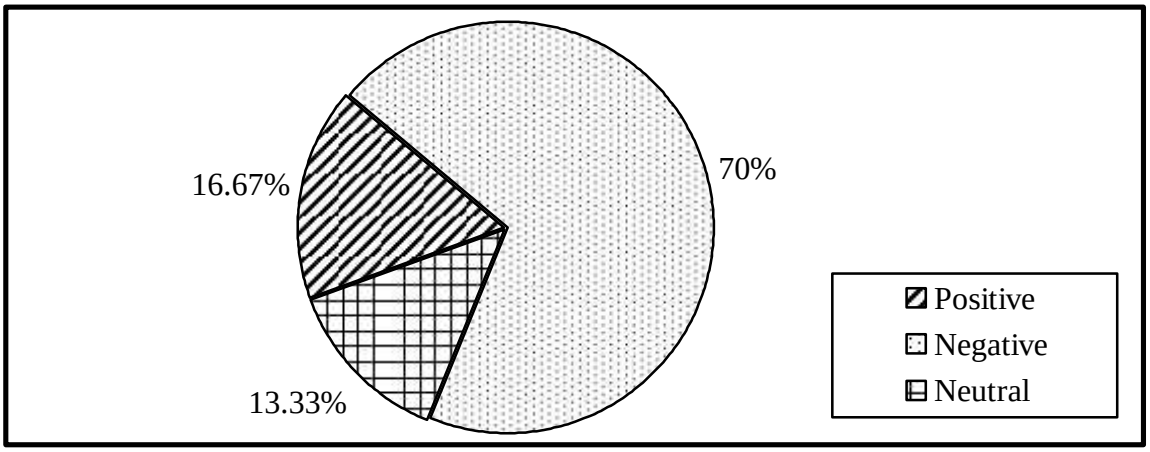
| Opinion / Respondents | Positive | Negative | Neutral | Total |
|---|---|---|---|---|
| Bankers | 1 | 8 | 1 | 10 |
| Finance Managers | 2 | 6 | 2 | 10 |
| Lecturer | 2 | 7 | 1 | 10 |
| Total | 5 | 21 | 4 | 30 |
| Percentage (%) | 16.67 | 70 | 13.33 | 100 |

*Source : Field Study, 2010*

The above table shows the respondents' opinion on relationship of interest rate with loan and advances. The total respondents opinion on 'Positive', 'Negative' and 'Neutral' are 5 numbers, 21 numbers and 4 numbers respectively. The percentage of respondent are shown in following figure.

**Figure No. 4.25**

**Relationship between Interest Rate and Loan and Advances**




*Source : Table No. 4.36*

The above figure represent the relationship of interest rate with Bank Investment. the respondent viewpoint on 'Positive', Negative' and 'Neutral' is 16.67 percent, 70 percent and 13.33 percent respectively. The total respondent viewpoint on 'Negative' is greater than 'Positive' and 'Neutral'.

### 4.3.6 Impact of Interest Rate on Fund Management of Commercial Banks

The sixth questionnaire is concerned with the how for the interest rate impact on the fund management of Nepalese Commercial Banks. The viewpoints of different respondent on 'Yes', 'No' and 'None of them' are depicted in following table and figure.

**Table No. 4.37**

**Impact of Interest Rate on Fund Management**

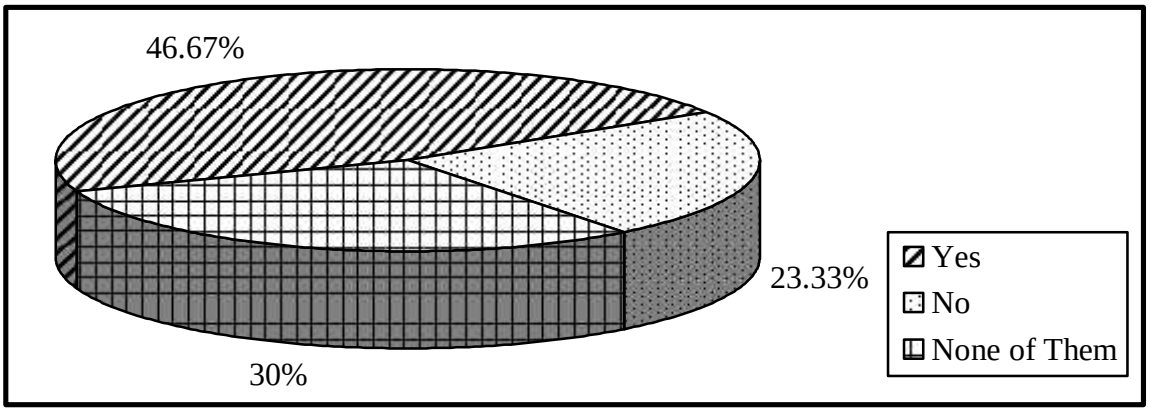
| Opinion / Respondents | Yes | No | None of Them | Total |
|---|---|---|---|---|
| Bankers | 5 | 3 | 2 | 10 |
| Finance Managers | 3 | 3 | 4 | 10 |
| Lecturer | 6 | 1 | 3 | 10 |
| Total | 14 | 7 | 9 | 30 |
| Percentage (%) | 46.67 | 23.33 | 30 | 100 |

*Source : Field Study, 2010*

The above table shows the respondents the viewpoint of respondent on impact of interest rate on fund management of Commercial Banks. Among the total respondents, 14 members and 7 members are agree and disagree respectively with the interest rate impact the fund management of Commercial Banks. Similarly, 9 members are not believed that only interest rate impact the fund management of Commercial Banks. The percentages of respondent are shown in following figure.

**Figure No. 4.26**

**Impact of Interest Rate on Fund Management**




*Source : Table No. 4.37*

Above figure shows most of respondent agree on the interest rate impact the fund management of Commercial Banks. The 46.67 percent of respondent followed by the interest rate impact the fund management, 23.33 percent of respondent followed

by interest rate do not impact the fund management of Commercial Banks and 30 percent of respondent followed by not only the interest rate impact the fund management of Commercial Banks.

### 4.3.7 Role of Interest Rate in Success of Commercial Banks

The seventh questionnaire is related to the interest rate play a vital role in success of Commercial Banks than other factors. The respondent viewpoints are shown in following table.

**Table No. 4.38**

**Role of Interest Rate in Success of Commercial Banks**

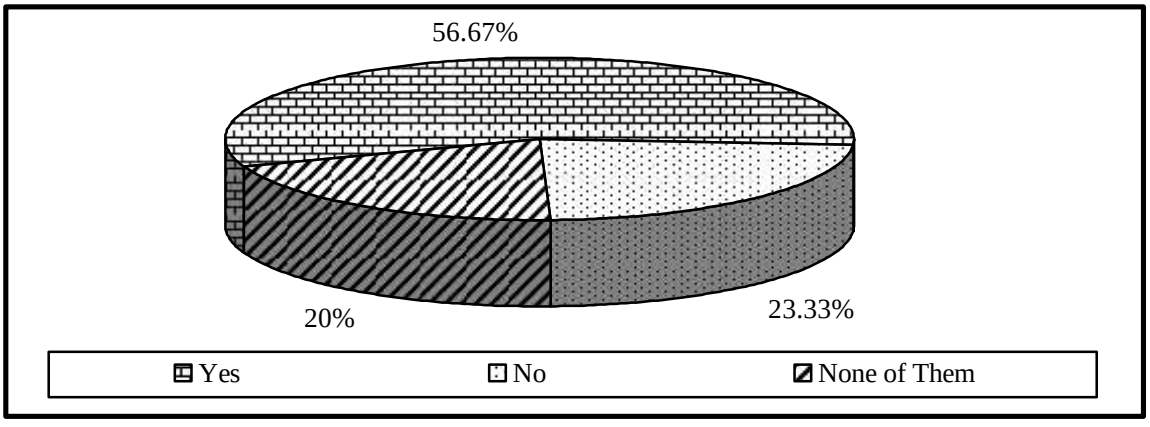
| Opinion / Respondents | Yes | No | None of Them | Total |
|---|---|---|---|---|
| Bankers | 4 | 3 | 3 | 10 |
| Finance Managers | 5 | 3 | 2 | 10 |
| Lecturer | 8 | 1 | 1 | 10 |
| Total | 17 | 4 | 6 | 30 |
| Percentage (%) | 56.67 | 23.33 | 20 | 100 |

*Source : Field Study, 2010*

The above table shown the viewpoint of respondents on role of interest rate in success of Commercial Banks. The total respondents followed by 'Yes' and 'No' and 'None of them' are 17 numbers, 7 numbers and 6 numbers respectively. The percentage of respondents are shown in following figure.

**Figure No. 4.27**

**Role of Interest Rate in Success of Commercial Banks**




*Source : Table No. 4.38*

The above figure shows that most of respondents are agree with the interest rate play a vital role in success of Commercial Banks than other factors. According to this figure 56.67 percent of respondent believe that the interest rate play a vital role in success of Commercial Banks, 23.33 percent of respondent believe that the interest

rate do not play a vital role in success of Commercial Banks and 20 percent of respondent believe that not only the interest rate play a vital role in success of Commercial Banks.

### 4.3.8 Effect of Interest Rate on Deposit, Loan and Advances and Investment of Commercial Banks

The eighth questionnaire is composed to know how far the interest rates affect the deposit, loan and advances and investment of Commercial Banks. The respondent viewpoints are shown in following table.

**Table No. 4.39**

**Effect of Interest Rate on Deposit, Loan and Advances and Investment**

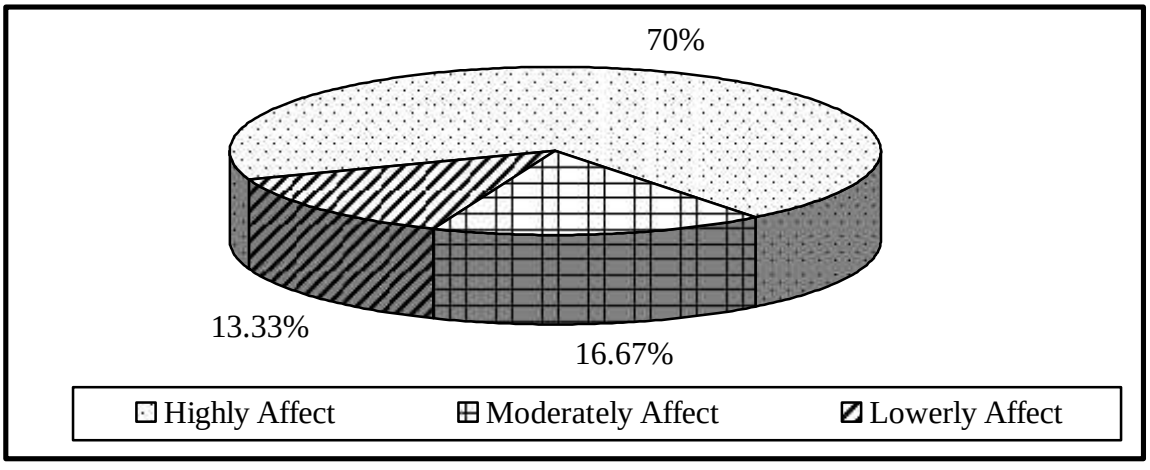
| Opinion / Respondents | High Affect | Moderately Affect | Lowerly Affect | Total |
|---|---|---|---|---|
| Bankers | 6 | 2 | 2 | 10 |
| Finance Managers | 7 | 2 | 1 | 10 |
| Lecturer | 8 | 1 | 1 | 10 |
| Total | 21 | 5 | 4 | 30 |
| Percentage (%) | 70 | 16.67 | 13.33 | 100 |

*Source : Field Study, 2010*

The above table shown the viewpoints of respondents on how far the interest rate affect the deposit collection and mobilization of Commercial Banks. The respondents followed by 'Highly Affect', 'Moderately Affect' and 'Lowerly Affect' are 21 numbers, 5 numbers and 4 numbers respectively. The percentage of respondents are shown in following figure.

**Figure No. 4.28**

**Effect of Interest Rate on Deposit, Loan and Advances and Investment**




*Source : Table No. 4.39*

The above figure depicts 70 percent of respondent agree with the interest rate highly

affect the deposit collection and deposit mobilization, 16.67 percentage of respondent agree with the interest rate moderately affect the deposit collection and deposit mobilization and only 13.33 percent of respondent agree with the interest rate lowerly affect the deposit collection and deposit mobilization of Commercial Banks.

### 4.3.9 Effect of Interest Rate on Net Profit of Commercial Banks

The ninth questionnaire set up to know the change in interest rate changes the net profit of Commercial Banks. The respondent viewpoints are shown in following table.

**Table No. 4.40**

**Effect of Interest Rate on Net Profit**

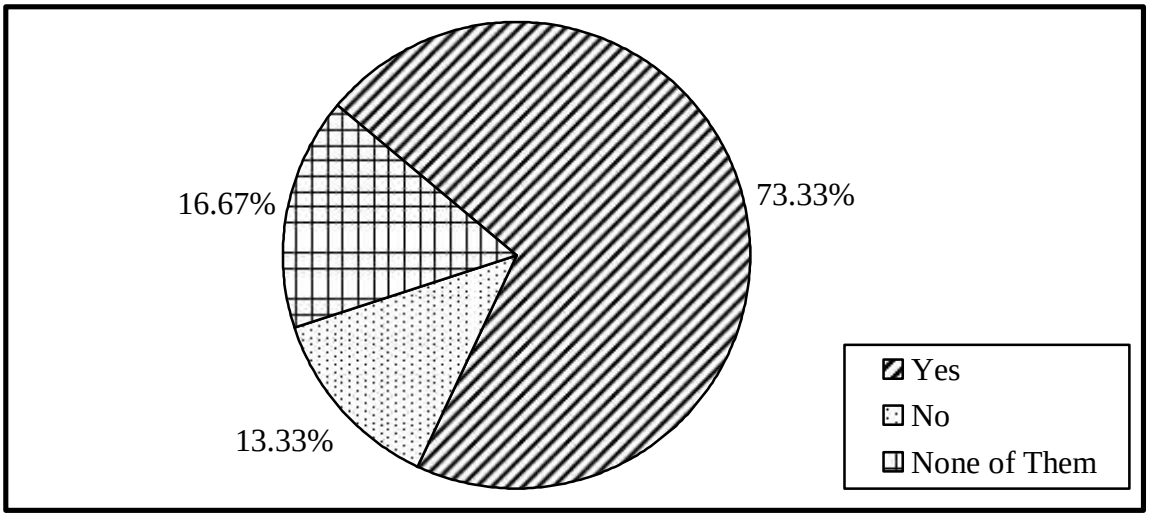
| Opinion / Respondent | Yes | No | None of Them | Total |
|---|---|---|---|---|
| Bankers | 4 | 3 | 4 | 10 |
| Finance Managers | 8 | 1 | 1 | 10 |
| Lecturer | 10 | - | - | 10 |
| Total | 22 | 4 | 5 | 30 |
| Percentage (%) | 73.33 | 13.33 | 16.67 | 100 |

*Source : Field Study, 2010*

The above table shows the viewpoints of respondents of respondents on the change on interest rate change the net profit of Commercial Banks. The respondents followed by 'Yes', 'No' and 'None of them' are 22 number, 4 numbers and 5 numbers respectively. The percentage of respondent are shown in following figure.

**Figure No. 4.29**

**Effect of Interest Rate on Net Profit**




*Source : Table No. 4.40*

The above figure show 73.33 percent of information followed by the interest rate affect the net profit of Commercial Banks. 13.33 percent of information followed by the interest rate to not affect the net profit of Commercial Banks, but 16.67 percent of information followed not only the interest rate affect the net profit of Commercial Banks.

### 4.3.10 Interest Rates Send a Price Signal to Depositor, Lenders, Investors and Borrowers

The tenth and last questionnaire is set up to get the knowledge on the interest rates send a price signal to depositors, lenders, investors and borrowers. The respondent viewpoints are shown in following table.

**Table No. 4.41**

**Interest Rates Send a Price Signal**

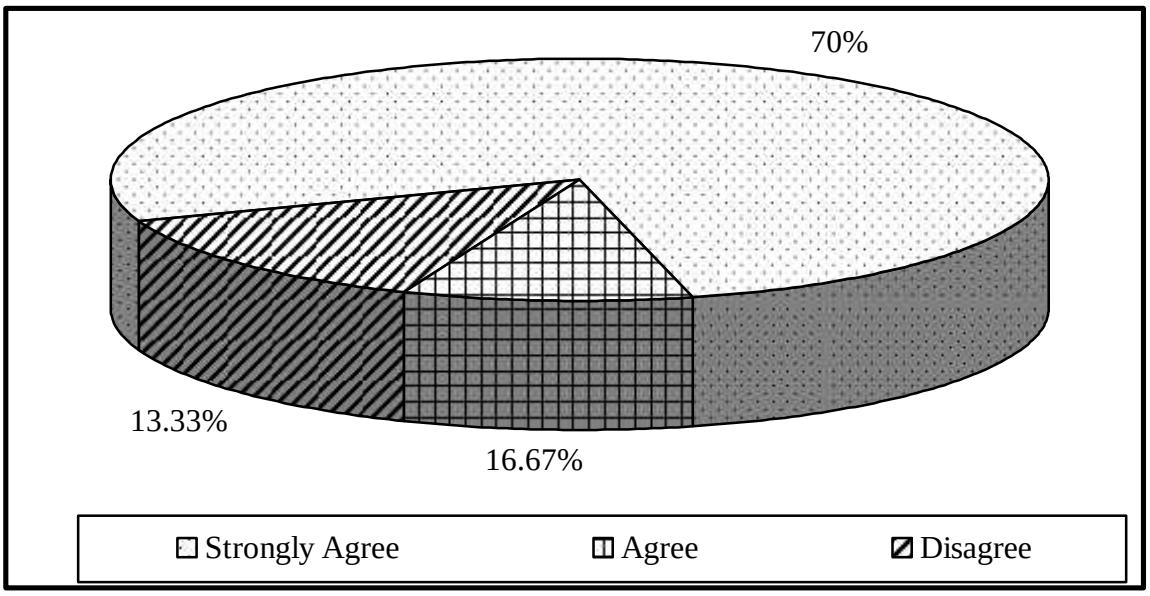
| Opinion / Respondents | Strongly Agree | Agree | Disagree | Total |
|---|---|---|---|---|
| Bankers | 5 | 2 | 3 | 10 |
| Finance Managers | 8 | 1 | 1 | 10 |
| Lecturer | 10 | - | - | 10 |
| Total | 23 | 3 | 4 | 30 |
| Percentage (%) | 76.67 | 10 | 13.33 | 100 |

*Source : Field Study, 2010*

The above table shows the viewpoints of respondents on the interest rate send a price signal to depositors, lenders, investors and borrowers. The respondents followed by 'Strongly Agree', 'Agree' and 'Disagree' are 23 numbers, 3 numbers, 3 numbers and 5 numbers respectively. The percentage of respondents are shown in following figure.

**Figure No. 4.30**

**Interest Rates Send a Price Signal**




*Source : Table No. 4.41*

The above figure shows more respondent about 76.67 percent are strongly agree, about 10 percent just agree and about 13.33 percent disagree with the interest rate send a price signal to depositors, lenders, investors and borrowers.

## 4.4 Major Findings of the Study

The major findings from the presentation and analysis of secondary and primary data are as follows:

### 4.4.1 Findings from Secondary Data

The major findings from the presentation and analysis of secondary data are a follows:

(i) The average interest rate structure on deposit, loan and advance and investment of five sample banks is fluctuated in time to time during this study period.

(ii) The study found that the standard deviation on average deposit rate and loan and advance of NABIL is higher than other samples banks i.e. 0.89 and 0.78 respectively. The standard deviation on investment rate is 0.657.

(iii) The simple correlation coefficient between deposit rate and deposit amount of NABIL, NIBL,, HBL, SCBNL and NSBIBL have high degree of positive correlation. The correlation analysis between interest rate on loans and

advances and loan amount of NSBIBL has high degree, SCBNL have moderate degree and HBL have low degree of negative correlation. But, NABIL has low degree and NIBL has high degree of positive correlation between interest rate on loans and advance and loan amount. The correlation analysis between investment rate and investment amount of HBL and SCBNL have low degree of negative correlation while NABIL & NIBL have moderate, and NSBIBL have high degree of negative correlation. The correlation analysis between deposit rate and lending rate of NIBL has perfect positive correlation. SCBNL and NSBIBL have moderate and high negative correlation respectively. But NABIL and HBL has low degree of positive correlation.

(iv) The simple coefficient of determination analysis between deposit rate and deposit amount ($r_{12}^2$) of HBL is 0.63 which is the lowest and SCBNL is 0.9664 which is the highest among all sample banks. The simple coefficient of determination between lending rate and lending amount ($r_{34}^2$)of NIBL is 0.9274, which is very high than other sample banks. The simple coefficient of determination between investment rate and investment amount ($r_{56}^2$) of HBL is 0.0002, which is very uncountable portion. The coefficient of determination between loans and advances rate and deposit rates of NIBL is nearly 1, it means the total variation in dependent variable by one independent variable cent percentage and the variation due to the other factors is nil, which is not possible in real theory.

(v) Test of significance for correlation between deposit rate and deposit amount of SCBNL and NSBIBL result significant. Test of significance for correlation between lending rate and lending amount of NIBL is significant. Test of significance for correlation between interest rate on investment and investment amount of al five sample banks resulted insignificant. Test of significance for correlation between interest rate on loan and advances and interest rate on deposit of NIBL is highly significant, which calculated value of 't' is 15.1744.

(vi) In this study, the turnover ratios are not matched with the general financial theory that decrease in interest rate increases loans and advances amount and increase in interest rate increases the investment amount of bank. The higher ratio shows a better mobilization of fund and vice-versa. Here, the

SCBNL has lower ratio of total loans and advances to total deposit than other sample banks but NABIL has higher ratio of total investment to total deposit than other sample banks.

(vii) The interest rate structure of five sample banks are not constant (NABIL, NIBL, SCBNL, HBL and NSBIBL). It uses different techniques to determine bank's interest rate according to the situation of country and bank itself to mobilize the collected fund and increases the financial performance. The banks increase, decrease and make constant it interest rate according their needs. From this job, the banks have also changed its net profit.

(viii) Among these sample bank, NSBIBL is in better position incase of total interest expenses to total interest income and total interest expenses to total deposit ratio. NIBL has the highest total interest expenses to total interest income ratio on Mid July 2009. Similarly, in case of the total interest income to total credit the NIBL has high ratio of 8.39 percent in Mid July 2009 and SCBNL has low ratio of 4.46 percent in Mid July 2008.

### 4.4.2 Findings from Primary Data

The major findings from the presentation and analysis of primary data are as follows.

(i) The respondents' viewpoint on suitability and unsuitability of interest rate determining process in Nepalese Commercial Banks are 36.67 percent and 56,67 percent respectively. 6.66 percent of respondent followed by 'none of them'.

(ii) The respondents' viewpoints on decreasing, increasing and constant trend line of interest rate structure of Nepalese Commercial Banks are 56.67 percent, 10 percent and 33.33 percent respectively.

(iii) The respondents' viewpoints on relationship of interest rate with deposit are 60 percent, 23.33 percent and 16.67 percent respectively in positive, negative and neutral.

(iv) The respondents' viewpoints on relationship of interest rate with bank investment are same as relationship of interest rate with deposit.

(v) The respondents' viewpoints on relationship of interest rate with loan & advances are 16.67 percent, 70 percent and 13.33 percent respectively in positive, negative and neutral.

(vi) The respondents agree and disagree with the interest rate impact the fund management of Commercial Banks is 46.67 percent and 23,33 percent, About 30 percent of respondent are followed by none of them,

(vii) About 56.67 percent and 23.33 percent of respondents respectively agree and disagree with the interest rate play a vital role in success of Commercial Banks. But 20 percent of respondents believe that not only the interest rate play a vital role in success of Commercial Banks.

(viii) About 70 percent, 16.67 percent and 13.33 percent of respondents respectively believe that the interest rate highly, moderately and lowerly affect the deposit, loan & advances and investment of Commercial Banks.

(ix) The 73.33 percent of informant followed by the interest rate affect the net profit of Commercial Banks, 13.33 percent of informant followed by the interest rate do not affect the net profit of Commercial Banks, but 16.67 percent of informant followed not only the interest rate affect the net profit of Commercial Banks.

(x) The informant viewpoint on strongly agree, agree and disagree with the interest rate send a price signal to depositors, lenders, investors and borrowers are 76.67 percent, 10 percent and 13.33 percent respectively.

# CHAPTER - FIVE

## SUMMARY, CONCLUSION AND RECOMMENDATION

Finally, the research study comes to the very end. This is the last part of the study, which is file most important chapter for the research because this chapter extracts of all the previously discussed chapters. This chapter comprises summary, conclusion and recommendations. Summary part includes the briefing about the all four chapters. They are introduction, review of literature, research methodology and data presentation & analysis chapter. Conclusion part is drawn from the analysis part and comparing the theoretical aspect and analysis. Similarly, recommendation part is made based on the conclusion, result and experience of thesis. Recommendations are made to the concern authorities and further researcher to improve and solve the present situation of interest rate structure so that Commercial Banks progress better its financial performance.

### 5.1 Summary

Nepal is a small country situated in the heart of Asia. It lie between two economically powerful countries China and India. Nepal is one of the least developed, least-industrialized countries of the world. Its economic condition is characterized by the declining interest rate, high inflation and slow growth in per capita income, low income, low saving and low investment along with very low growth rate. Political unrest and capital inadequacy are the major barriers in the development process. Even rich in nature resource, Nepal could not take advantages fromit due to lack of technical knowledge and capital formation. Now a day, the financial institution plays a vital role in economic development of a country. They act as an intermediary between the surplus units and deficit units. It pools the funds scattered in the economy and mobilizes them to productive sector. After the restoration of democracy, government adopted open and liberal policy, many financial institutions established in a country. Among them, Commercial Banks are one of the major components in the financial system. They work as intermediary between depositors and lenders and facilitate in overall development of the economy. The Commercial Banks are the heart of the economic system. They hold the deposits of million of persons, government and business units, exchanges money, grants loan and operates commercial transaction. The commercial bank survive by making profit,

which is the interest spread i.e. difference between interest received and interest charged. Interest is the payment made for the use of money and interest rate is the amount of interest paid per unit of time expressed as a percentage of the amount borrowed.

Interest rate being the most important variable in financial literature, this study has been undertaken to depict the effect of interest rate on financial performance of commercial bank in Nepal viz. NABIL, NIBL, SCBNL, HBL and NSBIBL, This study has focused on the structure of interest rate, which has interrelationship between deposit, credit and investment. Its effect on various aspect of economy has been a matter of discussion for a long time. Deposit collection and mobilization are also not an exception. Deposit collection and its effective mobilization being the top most function of every commercial bank, shouldn't neglect (he determining factors of interest. The proper interest rate provided and charged on deposit, lending and investment activities affects the profit position of bank and even lure depositors and borrowers to deposit and borrow. Various theories of interest rate and various factors in the economy that affects in deposit collection and mobilization of banks have been clearly stated in previous chapters.

With the impact of such theories and economic factors, interest rate fluctuates time to time. Such fluctuation on interest rate has been studied with help of financial tools and statistical tools in systematic manner. The financial statements of the five years i.e. from Mid July 2005 to 2009 have been examined for these subject matters. Since, this study is based on historical data, the research design designated is historical and of explanatory type.

The interest rate structure of all sample banks in deposit, loans and advance and investment are not in uniform nature. It is increased, decreased and constant during this study period. Statistical analysis of this sample banks' correlation coefficient between deposit rate and lending rate are moderate, higher and perfectly positive correlation. Test of significance for correlation coefficient between deposit rate and deposit amount, lending rate and lending amount, investment rate and investment amount and deposit rate and lending rate of sample banks' are come to significant and insignificant, but the NIB has higher significant between deposit rate and lending rate. Similarly, financial analysis shows that total credits to total deposit ratios of all

sample banks are increasing, which shows that all sample banks during study are able to mobilize its deposit in the maximum extent. Almost all bank financial performance is not so bad during this study period, but the NIB has increased its net profit in each and every fiscal year. Thus, the interest rate structure of Commercial Banks' has greater influences over its financial performance but however the Commercial Banks of Nepal not yet fully success in this regard. By analyzing the primary research, it was found that the interest rates highly affect the financial performances of Commercial Banks.

## 5.2 Conclusion

From the studies and analysis made in the previous chapters following conclusion has been drawn.

### Interest Rate Structure

The average interest rate structure of all sample banks on deposit rate, loan and advances are different. But the average interest rate structure on investment of all sample banks is same given by the NRB.

### Standard Deviation

The standard deviation of sample banks signifies that the scatteredness among the interest rates within the five years time period. In this study, the NABIL has the higher standard deviation on average deposit rate and loan and advance. Similarly, NIBL has the lower standard deviation on average deposit rate and average deposit rate and average loans and advances.

### Simple Correlation Coefficient

The simple correlation coefficient between deposit rate and deposit amount of samples banks has high degree of positive correlation. The correlation analysis between interest rate on loans and advances and loan amount of NIBL has high degree of negative correlation. NABIL has low degree of positive correlation & SCBNL, HBL & NSBIBL has negative correlation. The correlation analysis between investment rate and investment amount of HBL has low degree of negative correlation. NABIL and NIBL have moderate degree & NSBIBL has high degree of negative correlation. Similarly, SCBNL has low degree of negative correlation. The correlation analysis between deposit rate and lending rate of NIBL has almost perfect positive correlation. NABIL has moderate positive correlation. NSBIBL have

high degree of negative correlation. HBL has low degree of positive correlation& SCBNL has moderate degree of negative correlation.

**Simple Coefficient of Determination**

The simple coefficient of determination analysis between deposit rate and deposit amount ($r_{12}^2$) of five samples banks clear that the total variation in dependent variable (deposit amount) of all sample banks have been explained by one independent variable (deposit rate) to more extent and less percentage of variation is due to the effect of other factor in the economy.

The analysis of simple coefficient of determination between lending rate and lending amount ($r_{34}^2$) of five sample banks clear that the total variation in dependent variable (lending amount) of NABIL, SCBNL & HBL has been explained by one independent variable (lending rate) to small extent and more percentage of variation is due to the effect of other factor in the economy. It is opposite in case of NIBL and NSBIBL.

The analysis of simple coefficient of determination between investment rate and investment amount ($r_{56}^2$) analyse that the total variation in dependent variable (investment amount) of all five sample banks have been explained by independent variable (investment rate) to small extent and more percentage of variation is due to the other factors in the economy.

The analysis shows that interest rate on loans and advances are far higher than deposit rates of this five sample banks. In case of NIBL & NSBIBL the total variation in dependent variable (lending rate) by one independent variable (deposit rate) to large extent and less percentage of variable is due to the other factors in the economy. It is opposite in case of NABIL, SCBNL and HBL.

**Test of Significance**

Test of significance for correlation between deposit rate and deposit amount of SCBNL and NSBIBL result significant means that there is correlation between deposit rate and deposit amount. NABIL, NIBL and HBL results are insignificant that means there is no correlation between deposit rate and deposit amount.

Test of significance for correlation between lending rate and lending amount of NIBL is significant means there is correlation between interest rate on lending rate and lending amount. But the NABIL, SCBNL, HBL and NSBIBL have insignificant result.

Test of significance for correlation between interest rate on investment rate and investment amount of all sample banks are insignificant, meaning there is no correlation between these variable.

Test of significance for correlation between interest rate on loan and advances and interest rate on deposit rate of NIBL has higher significance. It means there is correlation between interest rate on loan and advances and interest rate on deposit rate. Test of significance for correlation between interest rate on loans and advances and interest rate on deposit of NABIL, SCBNL, HBL, NSBIBL comes insignificant, meaning there is uncorrelated between these variable.

**Funds Management Ratios Analysis**

The higher ratio shows a better mobilization of fund and vice-versa. The total loans and advances to total deposit ratio of five sample banks are not constant, it is increased in some Mid July during this study period ignoring the interest rate. In some case, this ratio is not matched with the general financial theory that decreases in interest rate increasing loans and advances. Comparing this sample banks the SCBNL has the less ratio.

The total investment to total deposit ratios indicates the deposit mobilization towards investment in government securities. This ratio is also not matched with the general financial theory that increases in investment rate increases the investment amount. The SCBNL has the higher ratio than other banks.

The total credit to total deposit ratios indicates the collected fund mobilized into total credits. The total credits to total deposit ratios of most sample banks are increasing but some of sample banks in later year extended its credit beyond the total deposit collected. This may create economic crises in near future and affects daily operation of bank.

**Effect of Change in Interest Rate on Net Profit of Banks**

The interest rate structures of five sample banks are not constant. It uses different technique is bank's interest rate according to the situation of country and bank itself to mobilize the collected fund and increases the financial performance. The banks increase, decrease and make constant its interest rate according to their needs. It shows that the financial performance of NIBL is better than other sample banks as it

has greater net profit changes and it has increases its net profit each and every fiscal year more and more during this study period.

**Profitability Ratio**

Profitability is the end result of a number of corporate policies and decision. It measures how effectively the firm is being operated and managed. Besides owners and manages, creditors are also interested to know the financial soundness of the firm. Owners are eager to know their return whereas managers are interested in their operating efficiency. So they calculate profitability ratios because expectation of both owner and manager are evaluated in term of profit earned by the firm.

The bank paid interest on its collected deposit and earned interest from its mobilized fund. Lower ratio is favourable from point of view of profitability. The total interest expenses and total interest income of SCBNL is lower than other sample banks. In comparing this sample banks, SCBNL has able to maintain almost same ratio of total interest expenses to total deposit ratio during this study period. This ratio expresses, how much interest expenses paid to depositor in term of various deposit collection. Lower ratio is favourable from point of view of profitability.

The total interest income to total credit of all samples bank is ups and downs. During this study period the NIBL has high ratio of 8.39 percent in Mid July 2009. Similarly, SCBNL has low ratio of 4.46 percent in Mid July 2008. This ratio indicates how much interest income earned from total investment. So, the higher ratio is favourable from point of view of profitability.

**Research Questionnaire**

By researching ten questionnaires among the different respondent/information such as bankers, finance manager and lecturer various viewpoint are collected on the effect of interest rate. Even in the primary research, there is unmatched the theoretical aspect of the interest rate with the practical one in some cases.

The most of respondents believe that the interest rate determining process of Nepalese Commercial Banks are unsuitable, the trend line of interest rate structure is decreasing. The relationship of interest rate with deposit and bank investment is positive. The relationship of interest rate with loan and advances is negative, the interest rate impact the fund management of Commercial Bank, the interest rate play

a vital role in success of Commercial Banks, the interest rate highly affect the deposit, loan & advance and investment of Commercial Banks, the interest rates affect the net profit of Commercial Banks and last interest rate send a price signal to depositors, lenders.; investors and borrowers.

## 5.3 Recommendations

Based on the analysis, interpretation, Findings and conclusion on the effect of interest rate on performance of Commercial Banks (NABIL, NIBL, SCBNL, HBL and NSBIBL), offer some few suggestion and recommendation, which would be helpful in near future for the bankers', researchers and academicians, which are as follows:

**Effective Guideline for Banks:**

NRB, the information house for public and other concerned parties, has authority to control and stimulate the financial system. It should issue prudential guideline/directives to discipline Commercial Banks in order to maintain effective interest rate with minimum spread.

**Setting a Practical Interest Rate:**

Capital and investment is considered as the key to success of any Commercial Banks, which is affected by the interest rate structure of these Commercial Banks. So, Commercial Banks are suggested to set proper and practical interest rate policy.

**Optimal Liquidity:**

Increasing deposit trend of deposit that pressure down the interest rate shows that Commercial Banks are facing over liquidity problem to insecurity, lack of investment opportunities and political instability. Commercial Banks are suggested to manage the over liquidity through the application of various techniques of liquidity management.

**Effective Service:**

Success of Commercial Banks largely depends on effective delivery of service, for this Commercial Banks should be made its' human resources vibrant with obtaining modern banking facilities in everywhere of the banks' branches.

**Create and Analyze the Investment Opportunity:**

Due to the lack of investment opportunity in productive sectors, most of the banks diverted its saving towards retail banking at cheaper interest rate such an unhealthy competition should be avoided in near future.

**Repayment of Loan:**

Commercial Banks should convince borrowers to repay loan by offering services, facilities, fine waivers discount etc. collection of more savings from the private sectors and its effective mobilization is possible only through good repayment of loans. Good repayment of loans ensures the strength of the Commercial Banks.

**Political Instability:**

Political instability is the main barrier to progress the financial performance of each and every financial institution and also country's economic condition. Political leader are recommended to make a political stability, which create various opportunities to financial institution and definitely progress its' financial performances in large extent

**Recommended to Future Researcher:**

This study focuses on the limit areas of effect of interest rate financial performance of Commercial Banks due to time limits. So, it is recommended to future researchers to conduct deeply in this topic because the interest rate affects other more financial performances of Commercial Banks in large extent directly and indirectly.

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