

# **CHAPTER I**

## **INTRODUCTION**

### **1.1 General Background**

In the context of Nepal, history of banking sector is quite short. Even now the banking system is in the evolutionary phase. So far as banking is concerned, we may go back in the Nepalese history, where a merchant namely "Shankhdhar" is recorded. He was a person who alone paid all debts of the people existing in the country at that time. Since then he introduced a new era called Nepal sambat. This record proves the existence of money lending function earlier in Nepal.

During the course of development of borrowing, we further come across the term 'Tanka Dhari' at the end of the 14<sup>th</sup> century, meaning moneylenders. They are one of the 64 castes classified on the basis of occupation. In 1877 A.D. Tejarath Adda was established by the government. The main purpose of this institution was to provide credit facilities to the general public at a minimum interest rate of 5 percent. The establishment of this institution marked beginning of organized financial institution in Nepal.

The banking business in Nepal began with the establishment of Nepal Bank Limited in 1994 B.S. Nepal Bank Limited used to carry out central banking functions also beside commercial banking function until the establishment of Nepal Rastra Bank in 2013 B.S. Realizing that Nepal Bank alone was not able to extend adequate banking services in the country, another commercial bank named Rastriya Banijya Bank (2022 B.S.), followed by Agricultural Development Bank for promoting the agricultural base in the country were established. The cooperative Bank, set up in 2020 B.S., was later merged with the Agriculture Development Bank due to similar nature of their functions.

In 2046 B.S. after the success of peoples movement, a pluralistic democratic system of governance was reinstated in the country. The

democratically elected government initiated the process of economic liberalization which was in line with the winds of change blowing all over the world. The country significantly reduced control over foreign trade and foreign exchange by incorporating free convertibility of current accounts. The government declared its sincere faith and reliance on private sector led growth and in limiting the role of the government to create a conducive atmosphere for a market regulated economic process. The government also encouraged private sector participation in various sectors of the economy, which until then was controlled by the state. The regulations for establishing banks were significantly eased. This was the time when financial institutions increased its number and banking units throughout the country. They were allowed to determine their own borrowing/lending rates. Insurance was also opened for private sector participation. Technological developments have equally supported banking business to put the banks on international standard. More and more banks started coming forward with globally recognized customer friendly software offering varieties of facilities like debit and credit cards, SMS banking, and various online services. All these facilities have helped to provide service at short period of time and with reasonably good amount of accuracy. Our banks with all these facilities see it to reach another age where it has been able to fulfill the distant dream of its valuable customers. The slogan of "banking at your finger tips" was on the air throughout the year as every banks feel it has been necessity to adopt technological change of current market.

Capital in a free economy is allocated through the price system. The interest rate is the price paid to borrowed capital while in the case of equity capital investors return come in the form of dividends and capital gains. This cost is affected by various factors. The most fundamental factors that affect cost of money are production opportunity and time preference for consumption. The return available within an economy from investment in productive assets determines the cost of investment or borrowing. Similarly, the preference of customers for current consumption as opposed to saving for future consumption also determines the cost of borrowing or return on lending. The

collection of deposit and its mobilization are the two sides of the same coin. In the absence of one, another cannot work. i.e. no collection of deposit no mobilization. Moreover, interest rate is the main factor in fund activities of commercial banks. Interest rate affects the collection of deposit, its mobilization and profit position.

On August 31, 1989, commercial banks and financial institutions were granted complete autonomy in determining their own deposit and loan rates. The interest rates were completely liberalized. They had been also given complete freedom to make rules and working procedures about the kinds of deposits, time period of deposits, repayment conditions, penal interest and interest capitalization of over due loans. NRB took a flexible approach in making some adjustments in interest rate by putting control on it. However, the impact of economic liberalization in developing countries as a result of financial globalization began to influence Nepal as well. This ultimately brought deregulation in interest rate by leaving the interest rate to be determined by market force. The keen competition between the banks and financial institutions brought interest rate war to such an extent that deregulation should follow, self-regulation otherwise, economic disturbances from rising interest rate is bound to have negative impact on financial sectors.

During the last two and half decades the number of financial institutions has grown significantly. At the beginning of the 1980s there were only two commercial bank and development banks in the country. Induction of economic liberalization policy, particularly the financial sector liberalization provided impetus in the establishment of new bank and non bank financial institutions. Consequently, by the end of Mid- March 2011 there are 31 "A" class commercial banks,<sup>78</sup> "B" class Development banks,<sup>79</sup> "C" class finance companies, 18 "D" class micro-credit development banks, 16 saving and credit co-operatives, and 45 NGOS ([www.nrb.org.np](http://www.nrb.org.np)).

Banking sector has been known as the integral part of the economy. Banks and other financial institutions perform various activities. Among these,

one of the major functions of the banks and other financial institutions is to act as financial intermediaries wherein they collect funds from the surplus units and distribute as loans to those deficit units in the economy by providing interest to depositors and charging interest from the borrowers. In doing so, the financial intermediaries provide a link between saving and investment and between the present and the future. As a consequence, savers can earn higher returns from their saving and borrowers can execute their investment plans to earn future profits. Further, financial intermediation crucially affects the net return to savings and the gross return for investment too. The spread between these two returns mirrors the banks interest margins, in addition to transaction costs and taxes borne directly by savers and investors. This suggests that bank interest spreads can be interpreted as an indicator of the efficiency of the banking system.

Banks as an intermediary can influence savers to save and then deposit their money in bank by providing them attractive interest rate. Interest rate is one of the important factor which influence people to save and deposit their savings in banks for long period. “Interest is payment for the use of money”. Therefore, when savers deposit their savings in bank, the banks pays certain percentage of interest on savings. As the banks have acquired more deposits, they can lend the funds to the needy businessmen, entrepreneurs and earn interest-based income by charging certain percentage of interest on loan so that money can be used in the productive sector. The rate of interest is the price a borrower must pay to secure loanable fund from a lender for an agreed upon the time period.

### **The Interest Rate Strategies of NRB**

In the monetary system of all countries, the central bank is an apex institutions of the monetary system, which seeks to regulate the functioning of the financial institutions of the country. Nepal Rastra Bank as the central bank under the Nepal Rastra Bank Act 1955 was established in 26th April, 1956. Its function was to supervise commercial banks and to guide the basic monetary

policy of the nation. Its major aims were to regulate the issue of paper money; secure countrywide circulation of Nepalese currency and achieve stability in its exchange rates, mobilize capital for economic development and for trade and industry growth; develop the banking system in the country, thereby ensuring the existence of banking facilities; and maintain the economic interests of the general public. Nepal Rastra Bank also was to oversee foreign exchange rates and foreign exchange reserves.

Nepal Rastra Bank is an autonomous and corporate body having perpetual succession. It started its operations with a total number of 23 employees including the Governor and the Chief Accountant. In the initial years of its operation, Bank had to focus its attention on abolishing the dual currency system, regulating the circulation of Nepalese currency throughout the kingdom and maintaining stability of exchange rates of the Nepalese currency. For this purpose, the bank opened its offices and currency exchange counters in various parts of the country. Currently, NRB has 7 main offices all over Nepal. NRB is authorized to determine the interest rate charged and offered by the commercial banks and financial institutions. There was full discretion to NRB in determining interest rate structure of banks and financial institutions in the period of 1960 to 1975. The financial system reforms started after the liberalization of interest rates in 1984 when commercial banks were given autonomy to fix interest rates over and above the central banks rates by 1.5 percentage points on saving and 1 percentage point on term deposits. The financial institutions got freedom in fixing their interest rates in their deposit and loans in 1986. However, there was limitation imposed on certain sectors of lending such as the rates of maximum of 15 percent on the priority sectors loan and for the other kinds of loans financial institutions were given freedom to maintain the interest rate structure. On December 1993, Banks and finance companies were not allowed to have more than 6 percentage interest rate spread between deposit and lending rates. Commercial banks were obliged to publish their interest rates and variations were permitted only to the extent of 1

percent on deposit and 2 percent in the lending rates between borrowers for the same purpose.

Interest is both a payment and receipt for the use of money. Interest, therefore, can be considered from the above two points. If the interest is paid, it can be considered as a 'cost'. On the other hand, if interest is received, it can be considered as a 'return'. Since, money can earn a return over a period of time; interest rates are often considered as an expression of the time value of money and are expressed in percentage. All business organizations or individuals are responsive to interest rate of the banks and financial institutions in one way or another. A variety of interest rate risk exists in the financial markets. However, in the context of Nepal, interest rate is regulated by the central bank during the early stage of financial market, development taking the period from 1955 to 1965. But gradually dramatic change had been made in the regulation on the interest rate by the central bank i.e. Nepal Rastra Bank according to the compatibility of the banks and financial institutions through liberalization. In the early mid 1980's Nepal has adopted liberal economic policy as a result of which many banks and financial institutions came into existence. Regulation of the financial system aimed at control of the economy rather than foster safety and soundness of financial system. But the interest rate deregulation, curtailment or elimination of directed credits, lifting entry and exit barriers for financial intermediaries, restructuring of banking system and institution of regulatory and supervisory mechanism are some of the components which open the door of such liberalization. There was full discretions to NRB in determining interest rate structure of banks and financial institutions from the period 1960 to 1975 as it was the sole and whole institution authorized to determine the interest rate as per NRB act (Shrestha & Bhandari,2007:128).

The era of interest rate liberalization started in November 16, 1984 when NRB granted autonomy to commercial banks to fix the rates of interest over and above the NRB rates by 1.5 and 1.0 percentage points respectively on saving and term (fixed) deposit. NRB directed commercial banks to reduce the

interest rates by 2 percent points than the normal credit for agricultural and cottage industries in 18 remote districts. Interest rates policy in Nepal was characterized by an elaborate system of mandatory deposit and lending rates for commercial banks and other financial institutions before the deregulatory moves of May 1996. The interest rates were further liberalized in May 29, 1986 when commercial banks were allowed to fix rates higher than the minimum deposit rates fixed by the NRB. Commercial banks were also set free to fix lending rates except certain item in the priority sector. The minimum interest rates were 8.5 percent on saving deposit and 12.5 percent for one year fixed deposit. The interest rates on fixed deposit with a maturity period or less than one year were left to the discretion of the banks themselves. Regarding lending rates, the interest rate was at 15 percent maximum. On August 22, 1992, NRB issued some directives to commercial banks and other financial institutions to clearly spell out the interest rate on deposits. NRB also suggested to commercial banks and other financial institutions to limit the spread of interest rate at 6 percent within Mid- December 1993. A further instruction to banks and financial institution was issued in 2002 and now the interest rate spread required to be maintained by commercial banks and financial institutions has also been removed.

## **1.2 Statement of the Problem**

Capital formulation and its proper utilization are highly essential for economic development of the country. As the banks and financial institutions have a significant role to play in the economic development of a country, more emphasis should be placed in enhancing deposits from savers and lending to those potential investors/ borrowers which require financing from the banks by providing interest to the depositors and charging interest to the borrowers. Generally, when interest provided in deposits is very less, people keep their surplus fund idle. In the same way when interest charge on lending is very high the possible investors will also be unable to borrow funds for investment.

Deposit is the amount of money or a valuable item that is received into a bank as security against possible loss. Utilization of the bank deposits indicates effectiveness of management. The management should be able to raise deposit fund at the lowest cost and use maximum portion of deposits safely into loan advancement to maximize profitability. Both the cost and amount of deposits that the bank can sell to the public are heavily influenced by the interest rate schedules and competitive maneuverings of the bank. Loan is the sum lent to others for certain time period with the agreement to charge interest on principal. The interest is charged calculating certain percentage on the principal. The basic objective of loan advancement is to earn interest as the reward for lending the sum for specific period.

However, banking sector has always been promising sector giving high return and value to its shareholders, its down turn financial scenario has created very less investment alternatives and comparatively lower return. Our country showed several joint venture banks within a short period of time, competing for limited market share incurring high operational cost. Interest rate, as a major tool to change the performance of the bank, has always been modified as per the situation and economy. After commercial banks received autonomy to determine their own interest rate they have to shoulder additional responsibility. An appropriate interest rate always sought to keep both parties i.e. depositor and borrowers at profitable position, even if there are negative impacts of change in interest rate. Due to stiff competition among the banks to increase the volume of deposit and loan and investments they have been working at a less interest spread. In many instances it may not be able to cover cost. This has been because of excessive competition among financial institutions. Moreover, frequent changes in interest rate within and outside the bank has changed the banking habit of individual depositors. There has been high tendency to transfer fund from less interest bearing bank to higher interest bearing ones while lower rated lending banks are seeing huge loan applications. The change in interest rates certainly has deep impact on the activities of the commercial banks. This study basically deals with such impacts of interest rate



on the deposit mobilization and ultimately the profitability of the company. The study thus attempts at answering the following questions:

- ) What is the impact of liquidity position (demand or supply) of organization in interest rate charged and offered by commercial banks?
- ) Whether interest rate structure affects the investment of commercial bank?
- ) Is interest rate the major factor to attract customers to banks?
- ) Is there any stability on deposit mobilization policy of the bank?
- ) What is the alternative to interest rate policy if we have to increase or decrease deposit and investment level?

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

The primary objective of the study is to analyze the impact of interest rate on deposit mobilization and its long term effects on the profitability of the bank. For this, purpose two banks, namely, EBL and NABIL have been selected. A comparative study of the two banks will also be attempted. In order to achieve primary objective, the sub objectives are highlighted as below:

- i. To analyze the financial position of banks.
- ii. To know the interest rate spread and its impact on the profitability of the bank.
- iii. To find out the dominance of the interest income to the total earning of the bank.

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

Banks are major part of the economy as their policies and movements are always under financial scrutiny. Established banks have obvious advantages over new coming in terms of operational cost and expertise gained through past experience. However, new banks have obvious advantages provided by the

updated software and technology, which is definitely goes to pay back in the long run. Interest rates offered by new banks are naturally competitive, making the interest spread much narrower. For this, they don't have any other alternative in the short run. This stiff competition among banks have benefited all people relating to financial sector in terms of higher dependable interest on deposit, easy availability of modified lower rated loan and advances and wider range of products to accommodate all needy people. After the banks got autonomy to maintain their own interest rate it has to shoulder huge responsibility as they are under scrutiny on various aspects of effect of change in the interest level.

This study will try to help analyze the impact of interest rate structure of commercial banks in Nepal and try to develop some ideas to know whether it influences deposits and lending. This being an important aspect for the economic development of the country has not much been emphasized that means very few number of research work has been found in this topic. Hence, it is hoped that the finding of the study to some extent will help the policy makers to make strong policy regarding interest rate charged on deposits and lending in Nepalese context. Similarly, it can be fruitful resource for teachers, students, researchers and academicians in abstracting some useful information about interest rate, deposits and lending.

### **1.5 Limitation of the Study**

The study has the following limitations:

- ) The conclusions drawn on the basis of the study are based on five year data. The data are taken from annual reports of the concerned banks and report and bulletins of Nepal Rastra Bank.
- ) Deposit, loan, investment and profit are year end figures where as interest earned, interest expenses are total figure occurred throughout the year. Any calculations related to this may show differences from the actual figure because year end figures were not same over the period.

- ) There are too many factors that affect deposit mobilization decisions. However, only interest rate is considered in this study.
- ) The study is based on secondary data.

## **1.6 Organization of the Study**

Keeping the objective in mind, this study has been organized into the following five chapters.

### **Chapter I: Introduction**

The first chapter consists on introduction of the study, background of the study, statement of the problems, significance of the study, objectives of the study and limitation of the study.

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

This chapter includes review of the literature, which was obtained during the review of books, articles, journals, reports and other relevant materials.

### **Chapter Three: Research Methodology**

This chapter deals on research design, population and sample size, source of data, data collection and processing techniques and analysis of tools.

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

This chapter attempts to analyze and evaluated data with the help of analytical tools and interpret all the result into the unit of empirical findings and results.

### **Chapter Five: Summary, Conclusions and Recommendations**

This chapter covers on the results and findings and recommend some suggestions.

At the end of the chapter bibliography and appendices have been incorporated.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

The review of literature is a very important aspect of the research. A critical literature review within a specific field or interest of research is one of the most essential, but also complex activities in the process of research. This chapter highlights upon the existing literature. In this chapter, attempts have been made to review the literature related to interest rate structure and its impact on lending and deposit of commercial banks in Nepal. Both the theoretical aspect as well as findings of the previous studies has been included here so as to identify the broad aspects of interest rates structure and its impact on lending and deposit of commercial banks in Nepal. This chapter is going to show the problems posed by different researchers and writers and the solutions and strategies they exerted. The main motto of this chapter is to show how far and how much our present study is associated with different past researches. So, different journals, articles, books and research works were reviewed.

#### **2.1 The Conceptual Framework**

A rate which is charged or paid for the use of money is known as interest rate. Interest is the amount paid by a borrower to a lender above the amount (the principal) that has been borrowed. An interest rate is often expressed as an annual percentage of the principal. It is calculated by dividing the amount of interest by the amount of principal. Conceptually, interest is both a payment and receipt for the use of money. Interest, therefore, can be considered from the above two point. If interest is paid, it can be considered as a “cost”. One the other hand, if interest is received, it can be considered as a “return”. Since, money can return over a period of time, interest rates are often considered as an expression of the time value of money. It is the price of credit but unlike other price 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. For

example, if a lender (such as a bank) charges a customer Rs100 in a year on a loan of Rs1000, then the interest rate would be  $100/1000 * 100\% = 10\%$ .

The neo-classical economist however defined the interest as the price for the use of loanable funds. But the modern economist, in their effort to avoid these divergent and controversial views about the nature of interest, have explained it in terms of productivity, saving, liquidity preference and money. In other words, interest is the rewards for the pure yield of capital of saving for forgoing of liquidity and surplus of money. The rate of interest, according to Keynes, is a purely monetary phenomenon and in his theory, he has presented “a proposition that the rate of interest influences the level of economic activity by first influencing the rate of real investment in the economy”. According to him, the real investment is in fixed capital or durable machines. Schulz has also expressed his view that, “An important aspect of interest rate policy is the setting of an appropriate margin between the lending and deposit rate. If the margin is too high, bank will make excessive profits and this leads to waste of save resources. If it is too low, it will discourage intermediation and devitalize financial institutions. At the same time, the demand for credit goes on increasing being affected by the cheap loan rates. Hence, it can be concluded that changes in interest rate structure produce either positive or negative impact upon the growth of a developing economy such as ours” (Rose, 2003: 113).

A more thorough definition of an interest rate can be found in The Economist's Dictionary of Economics. In part they defined the "rate of interest" as:-

"The proportion of sum of money that is paid over a specified period of time in payment for it's loan. It is the price a borrower has to pay to enjoy the use of cash which he does not own, and the return a lender enjoys for differing his consumption or parting with liquidity. The rate of interest is a price that can be analyzed in the normal framework of demand and supply."

The interest entry by Paul Heyne at The Library of Economic and Liberty expands on this idea of interest rate as a price which is determined by market forces:

The interest rate is determined by demand and supply: the demand for present control of resources by those who do not have it, and supply from those who do have control and are willing to surrender it for a price. The question of exactly why demand and supply yield a positive rate of interest is one of the most fiercely disputed questions in the history of economic theory. It is enough to point out that when an individual acquires present command of resources; his or her set of available opportunities expands. In short run, the present command of resources is some thing that people want. Therefore, those who get it are willing to pay for it, and those who give it insist that they be compensated for doing so.

Note that when people discuss interest rates, they are generally talking about nominal interest rate. A nominal rate is one where the effect of inflation have not been accounted for. Changes in the nominal interest rate often move with changes in the inflation rate, as lenders not only have to be compensated for delaying their consumption, they also must be compensated for the fact that a dollar will not buy as much a year from now as it does today. Real interest rates are interest rates when inflation has been accounted for. This is explain in more detail in Calculating and Understanding Real Interest Rates.

J.M. Keynes in his book "The General Theory of Employed, Interest and Money" brought forward his view about the rate of interest. Community's liquidity preferences and quantity of money determine the level of or rate of interest. These three things liquidity preferences, quantity of money and rate of interest are negatively correlated. At low rated interest the liquidity preferences of community is high and it is low at big rate of interest (Keynes, 1936).

According to modern view interest rate determination depends up on the investment, the marginal efficiency of capital is the rate of interest and investment is equal to the desire volume of saving.

Thus, the total investment=Total Saving or  $I=S$

Keynes had argued that interest stems directly from the supply of and demand for money itself rather than the use of money. Liquidity is the unique characteristics of money and calls the demand for money to hold liquidity preferences. It is this which requires the payment of interest. The marginal efficiency of capital determines the degree of liquidity preference and the rate of investment and interest there on.

According to H.D. Crosse determination of interest rate depends on "when funds are plentiful, market rate generally tends to decline, bank seek loan more aggressively, and therefore lower their rates induce marginal borrower to come into the market. When funds are scare banks raise their rates and potential borrowers may differ the use of credit or seek it elsewhere.

This chapter lays the foundation of the present work. It discusses in brief about the theoretical concept of interest rate and its relation with other subjects.

### **2.1.1 Interest Rates and Investment Pattern**

According to the survey conducted by NRB (the interest rate in unorganized sector in Nepal) interest rates has increased significantly, especially in recent years, in the unorganized sector. It is for the increment in the investment because a significant part of the resources come from deposit and is used largely to provide credit for private sector.

### **2.1.2 Interest Rates and Deposit Mobilization**

Interest is the price paid for the acceptance of deposit, and remuneration received for allowing others to use unutilized deposit for their benefit. A high interest rate diverts the resources from unproductive tangible assets to financial claims. R.D. Pant mentioned that the changing interest rates in deposits change the saving habit of the Nepalese individuals. High interest rate in deposit helped to raise the saving, especially from rural area. Lower rates loan showed huge increment in sale and purchase of land building and vehicles in the recent year.

### **2.1.3 Interest Rate and Monetary Policy**

There is deep relationship between interest rate and monetary policy. Monetary policy works by controlling the cost and availability of credit. During inflation, the central bank raises the cost of borrowing and reduces the credit creating capacity of the commercial bank, this ultimately increases the interest rate of bank. Increasing the money supply can lower the interest rates.

### **2.1.4 Interest Rate and Profitability**

Schulz explains that, "an important aspect of interest rate policy is setting of an appropriate margin between the lending and deposit rate. If the margin is too high, banks will make excessive profits and this may lead to waste of saved resources. If it is low, it will discourage intermediation and devitalize financial institution (Schulz, 1978).

### **2.1.5 Interest Rates and Price Level Changes**

The changes in the interest rate and price level move together because they are interlinked with one another. The relation with each other is termed below.

- ) High interest rate accompany "high" price and "low" interest rate accompany "low" price.
- ) Interest rates tends to be high when price are rising and vice-versa.
- ) Interest rate movement lags behind price level change.

Weston and Bringham mentioned the price level trends affect interest rates-in-two important ways. The nominal interest rates the contract, or stated interest rate reflects expectation about future price level behaviour. If prices are rising and expected to rise further, the expected rate of inflation is added to the interest rate that would have prevailed in the absence of inflation to adjust for the decline in purchasing power represented by price increase (Weston and Bringham, 1984).



### 2.1.6 Function of Interest Rate

According to Maxwell the three basic functions which interest rates can perform are:

- i. The interest rate can mobilize saving. It is the price for saving used by savers to equate marginal rates of substitution between present and future consumption. Under Nepal's imperfect market conditions. It also has a strong effect on the choice of assets which saving are embodied. A rise in the interest rate produces a substitution from unproductive tangible assets held as inflation hedge into financial claims. This substitution as well as any increase in the savings rate frees resources for productive investment.
- ii. The interest rate is an efficient rationing device for the allocation of scarce resources between alternative investments. It is almost invariably superior in this respect to rationing on the basis of the decisions of a bureaucrat in a planning agency, the quantity of the collateral offered, the political influence of the borrower, "name" or the preferences of corrupt loan officers.
- iii. The interest rate can provide a social discount rate for decision to save and invest. In this role, it equates plans to save and invest. Here it acts as a market cleaning devices, influencing in an optimal manner the choices of what to produce and how to produce it interest rate can discourage highly capital incentive techniques of production in countries where capital is scarce, instead encouraging greater use of labour. Where labour is plentiful and capital scarce, the interest rate directs entrepreneurial activities into simple things with simple technologies, but with high return to capital.

Guru Prasad Neupane mentioned in his research work that interest rate varies among nations. It depends upon their economic activities and existing policies. In every economy, we find inverse relationship between investment and interest rate. Higher the interest rate, lower the investment and vice-versa.

Direct relationship may be found between interest rate and savings. With the lower interest rate, the deposit also falls down. So while determining the interest rates there should always be equality in saving and investment. Appropriate interest rates scan direct investment in the proper field. For resources, interest rates should be positive.

In Nepal, interest rate can perform the following functions:

- i. The interest rates mobilize savings;
- ii. The interest rate is an effective rationing device for the allocation of the scare resources between alternative investments.
- iii. The interest rate can provide a social discount rate for decision to save and invest.
- iv. Interest rate has the guideline for directing the investment into productive sector. The cheaper interest rate of the commercial banks diverted the capital into unproductive and speculative sectors.

### **2.1.2 Theories of Determining interest Rate**

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:-

#### **2.1.2.1 Classical theory of interest rates**

One of the oldest theories concerning the determinants of the pure or risk free interest rate is the classical theory of interest rates, developed during the eighteenth and nineteenth century by a number of British economists and elaborated by Irving Fisher in 1930. The classical theory argues that the rate of interest is determined by two forces: (1) the supply of savings, derived mainly from the households and (2) the demand for investments capital, coming mainly from the business sectors (Rose, 1997:193).

#### **Savings by Households**

Generally, most of the savings in modern industrialized economics is carried out by individuals and families. For these households, saving is simply

abstinence from consumption spending. Current saving therefore is 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 savings 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 rates also play 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 an 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.

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 so called Substitution Effect calls for positive relationship between interest rates and the volume of savings. Higher interest rates bring forth a greater volume of current savings. For example, if the rate of interest in the financial markets rises from 5 to 10 percent, the volume of current saving by households is assumed to increase from 100 million to 200 million.

## **Saving by Business Firms**

Not only households but also business saves. 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 volume of current business savings which supplies most of the money for annual investment spending by business firms.

The volume of business saving depends on two key factors: the level of business profits and the dividend policies of corporations. These two factors are summarized in the retention ratio, the ratio of retained earnings to net income after taxes. This ratio indicates the proportion of business profits retained in the business for investment purposes rather than paid out as dividends to the owners.

The critical element in determining the amount of business savings 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 markets for funds. The result is a reduction in the demand for credit and a tendency toward lower interest rates. On the other hand, when profits fall but firms do not cut back on their investment plans, they are forced 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 profits, interest rates also play a role in the decision of what proportion of current operating cost 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 businesses. 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 2.1: The Substitution Effect Relating Saving and Interest Rate**

Volume of current savings

#### **The Demand for Investment Funds**

The savings made by household, business, government are important determinants of interest rate but they are only one side of determinants. The other factor is investment spending made by business firms government and in some case by households. Business requires huge amounts of funds each year to purchase equipment, machinery and inventories and to support to 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 investing fund have inverse relationship (Rose, 1997:195).

At low rate of interest more investment project becomes economically viable. On the other hand, if the rate of interest rises to high levels, fewer investment projects will be pursued and fewer funds will be required from the financial markets as figure no. 2.

## **Figure 2.2: The Investment Demand Schedule**

Volume of investment spending

### **The Equilibrium Rate of Interest in the Classical Theory of Interest**

According to the classical economists, the interest rate in the financial market and determined by the interplay of the supply of saving and demands for investment. Specifically, the equilibrium of interest is determined at the point where the quantity of saving supplied to the market is exactly equal to quantity of funds demanded for investment. As shown in the figure below this occurs at point E, where the equilibrium rate of interest is IE and the equilibrium quantity of capital funds traded in the financial markets is QE.

### **Figure 2.3: The Equilibrium Rate of Interest in Classical Theory**

**Volume of Saving and Investment**

The market rate of interest moves toward 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 towards that equilibrium. If the market rate is temporarily above equilibrium, the volume of savings exceeds 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 to 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.

#### **2.4.2 The Loanable Funds Theory of Interest**

Developed by Swedish economist Knut Wicksell (1851-1926), the loanable funds theory of interest states that interest rates are determined by the supply and demand of loanable funds in the capital markets. This explanation emphasizes the flow of funds by suppliers of loanable funds (lenders) and the flow of funds by the demanders of loanable funds (borrowers). It is a monetary theory of interest since it focuses on the financial factors that influence interest rate (i.e. borrowing and lending). In addition, loanable funds theory of the rate of interest suggests that investments and savings determine the long-term level of interest rates, whereas short-term rates are determined by financial and monetary conditions in the economy. The loanable fund theory is a short-run, partial equilibrium explanation in which some factors produce a change in the interest rate and on the level of employment, income and production of the resulting impact. Rather, the loanable funds theory focuses on the factors that underlay the supply and demand schedules for loanable funds and on their interaction (Cooper & Fraser, 1983:160).

## **Supply of Loanable funds**

The major sources of supply of loanable funds are from two sources: (1) The amount of saving by households business, governments and (2) 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 forgo current consumption in order to have a larger quantity of consumption in the future. Individual or households save 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 the saver for postponing current consumption and thus might be expected to produce a higher quantity of saving for some individuals. In general case, the quantity of saving supplied by individuals is principally determined by the level of income and it is influenced to a 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 a 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 exist which revenues exceed expenditures such that saving exists when revenues exceed expenditures (a budget surplus).

To summarize, saving (the postponement of current consumption) may be done by households, business and governments. The volume of saving of each of these units is influenced by a variety of factors of which the interest rate is one. As a result, we might expect that the relationship between the interest rate and the volume of saving. For example, at interest rates of 'r', the volume of saving would be Q. The responsiveness of saving to change in interest rates is quite small.



## Figure 2.4: The Interest Rate and Volume of Savings

*New Money-* Although the volume of saving is the principal source of loanable funds in financial markets, the supply of loanable fund 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 central bank. Commercial banks use any excess reserves to make loans and purchase securities and create money (demand deposit) through the credit creation process. However, the ability of commercial banks to create money is limited by the central bank through the use of its monetary policy tools like open-market operations, reserve requirement change and discount rate changes.

There is little evidence that either the central bank or commercial banks are substantially influenced in the money creation process by the level of interest rates. The principal Factor that determines the volume of new money created by the banking system is the amount of reserves and the principal factors that determine the amount of reserve is central bank monetary policy. Neither of these factors could be directly influenced by the level of interest rates. We may therefore, draw the relationship between the amount of new money created and interest rate as shown in figure 2.5. The volume of new money supplied is  $Q$  and at the higher interest rate 'r', the amount of new

money created is the same  $Q$ . essentially, change in the money supply are determined by factors other than the interest rate.

### **Figure 2.5 The Supply of Loanable Funds**

#### **Total Supply for Loanable Fund**

In summary, the total supply of loanable fund is the sum of the supply of savings and the amount of new money created. This supply schedule of loanable fund may be increased either by an increase in the desire to save by business, households and governments or by the creation of more new money by commercial banking system. Conversely, the supply of Volume of saving of loanable fund may fall because of a reduction in the desire to save.

### **Figure 2.6 Total Supply of Loanable Funds**

## **The Demand for Loanable Fund**

The demand for loanable fund is composed of the demand by household, business and governments.

***Consumer (Household) Demand-*** Domestic consumers demand loanable funds to purchase a wide variety of goods and service on credit. Recently research indicates that consumers are not particularly responsive to the non price terms of a loan such as the down payment, maturity and size of installment payments. This implies that consumer demand for credit is relatively inelastic with respect to the rate of interest. Certainly a rise in interest rate leads to some reduction in the quantity of consumer demand for loanable fund (particularly when home mortgage credit is involved) whereas a decline in interest rate stimulates some additional consumer borrowing. However, along the consumer's relatively inelastic demand schedule, a substantial change in the rate of interest must occur before the quantity of consumer demand for funds changes significantly.

***Domestic Business Demand-***The credit demands of domestic business 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. As noted earlier, in our discussion of the classical theory of interest, high interest rate eliminates some business investment projects from consideration because their expected rate of return is lower than the cost of funds. On the other hand, at lower rate of interest, many investment projects look profitable with their expected returns exceeding the cost of funds. Therefore, the quantity of loanable funds demanded by the business sector increases as the rate of interest falls. The total demand for loanable fund is shown in the following figure 2.7 where DT is total demand.

***Government Demand-***Government demand for loanable funds is a growing factor in the financial market 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 interest elastic because many local governments are limited in their borrowing activities by legal interest rate ceilings. When open market rates rises above these ceiling, some state and local governments are prevented from offering their securities to the public.

***Total Demand for Loanable Fund***-The total demand for the loanable fund is the sum of domestic consumer, business and government credit demands. These demand curve slopes downward and to the right with respect to the rate of interest. Higher rate of interest lead some businesses, consumers and governments to curtail their borrowing plans; lower rates bring forth more credit demand.

### **Figure 2.7 Total Demand of Loanable Funds**

#### **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 in the economy but also the rate of interest. The interest rate tends towards the equilibrium point at which the supply of loanable funds equals the demand for loanable funds. If the interest rate is temporarily above equilibrium, the quantity of loanable funds supplied by domestic savers and foreign lenders, by banking system, and from the dishoarding of money exceeds the total demand for loanable funds and the rate

of interest will be bid down. On the other hand, if the interest rate is temporarily below equilibrium, loanable funds demand will exceed the supply. The interest rate will be bid up by borrowers until it settles at equilibrium once again.

### **Figure 2.8: Equilibrium Rate of Interest in Loanable Fund Theory**

#### **2.4.3 The Liquidity Preference Theory of Interest Rate**

The loanable funds approach to interest rate determination focuses on supply and demand for loanable fund. The liquidity preference theory is an alternative approach which focuses on the liquidity preference instead of the supply and the demand for money. It is assumed that individuals inherently prefer money among all financial assets since money can be used to make payments and provide perfect liquidity. Wealth holders are persuaded to hold financial assets other than money only because these non-money assets are money less the demand for money holdings and greater the income, greater the demand for other financial assets and vice versa (*Rose, 1997:209*). The demand schedule for money can thus be depicted as a function of the rate of interest as shown in figure 2.9.

**Figure 2.9 The demand of Money as a function of rate of interest**

**Figure 2.10: Quantity of Money Demanded**

**Figure 2.11: Quantity of Money Supplied**

Thus, the greater the income, the greater will be the quantity of money demanded at a given rate of interest and vice versa. The relationship is depicted in fig 2.10 where MDY1, MDY2, MDY3 represent the demand for money at

the successively higher income level  $Y_1$ ,  $Y_2$ ,  $Y_3$ . Thus for a given income level, say  $Y_2$  and a given money supply the rate of interest ( $r_E$ ) is viewed as determined by the supply-demand equilibrium depicted in fig 2.11 where  $M_S$  is the supply of money. The equilibrium interest rate  $r_E$  is obtained by action of individuals seeking to maintain desired levels of cash balances. Since the amount of desired money holding is a function of the rate of interest, there is only one rate of interest at which the demand for money balance is the same as the amount of the money supply. At a rate of interest higher than  $r_E$ , say  $r_H$  in fig 2.11 individual in the aggregate will be holding more money ( $M_S$ ) than they desire  $MDH$  at that rate of interest (the total supply of money must be held by the public). To rid them of “excess” cash, individual purchase interest bearing financial assets, driving their prices up and their interest rate down. This occurs until the rate of interest falls to  $r_E$  at which  $MDE=MS$ .

The outcome of course is that public still holds in the aggregate, the same amount of money but at the lower rate of interest, this is now the desired amount. On the other hand, if the interest rate is lower than  $r_E$  say  $r_L$  in fig 2.11 the public will be holding smaller money balance ( $M_s$ ) that they desire ( $MDL$ ) at that rate of interest. As a result, in order to obtain more cash in this situation, individual sell interest bearing securities, the aggregate effect of which is lower security prices and higher interest rates. The interest rate will thus rise to  $r_E$  at which point desired cash holdings equals the supply of cash.

A principal aspect of the liquidity preference model is that changes in the money affect the rate of interest. In the liquidity preference framework, with income and the price level assumed to be constant, an increase in the money supply will lower  $r_E$  the equilibrium rate of interest (fig 2.12) and decrease in the money supply will rise  $r_E$  (fig 2.13).

**Figure 2.12: Effect of an increase in the money Supply on the rate of interest**

**Figure 2.13: Effect of decrease in the money supply on the rate of interest**

In summary, when the money supply is MS1, the rate of interest is  $r_1$ . As the money supply expands to MS2 and MS3, the rate of interest falls to  $r_2$  and  $r_3$  respectively. The process by which interest rates fall as M3 expands can again be interpreted in terms of public preference for money holding relative to other financial assets such as interest bearing securities. For example, as in fig 2.14, when the money supply expands from MS1 and MS2, individual find themselves holding larger cash balance than they desire at interest rate  $r_1$ . As they seek to reduce money holding by purchase of security, security price rise and interest rate fall until a new equilibrium is established at interest rate  $r_2$  where MD=MS.

**Figure 2.14: Money Supply and Interest Rate**



## 2.5 Factors Affecting the Difference in Interest Rates

Although it is assumed that deposit increase as interest increases but interest rate is affected by numerous factors. In real world, different financial institutions quote different interest rate. It means that the same type of instrument carries different interest rate at the same time, so there is presence of interest spread (*Kohn, 1993:169*). For this, there are various factors affecting the difference in interest rate:-

- ) Credit or Default Risk
- ) Liquidity Risk
- ) Marketability Risk
- ) Call or Prepayment Risk
- ) Servicing Costs
- ) Exchange Rate Risk
- ) Taxability

***Credit or Default Risk-*** The credit risk is the most commonly associated risk. It determines the different amount individuals or firms pay based on their credit worthiness. Different parties will be offered different rates on debt obligations (such as loans). The measure of credit worthiness of an individual is called a credit rating or credit score. Other entities (such as governments and companies) will acquire a bond rating if they are active in bond markets. Credit

risk requires making estimates of the possibility of loss due to this reason. This probability is then converted into an interest rate premium, the credit or default risk premium and added to the saver's required nominal yield. The credit spread between an instrument and its risk free equivalent is called the risk premium.

**Liquidity Risk-** A desirable quality of assets that are to be part of a precautionary reserve is liquidity. An asset is liquid if it can be turned into cash quickly without loss. But the risk that the lender might not be able to get cash on short notice is called the liquidity risk. The difference in interest rate due to liquidity risk is called liquidity spread.

**Marketability risk-** Marketability is the capacity of being sold quickly at low transaction cost. Marketability risk deals with the degree of difficulty in being able to convert a financial into cash at its most recent transaction price or very close to it. Savers who purchase poorly marketable investments expect to be compensated for the lack of marketability. This represents an additional interest spread and is referred to as the marketability risk premium.

**Call or Prepayment risk-** Some financial claims offer the borrower the right to repay the principal debt prior to maturity. On financial claims like bond, these provisions are referred to as call provision and on some financial claims such as home mortgage and installment auto loan, they are called prepayment provisions. These provisions are options. The borrower has the option to call or repay the debt before the maturity date. The investor in such callable financial claim must accept repayment risk. The repayment risk is that if interest rates fall, the borrower will call the bond or prepay the mortgage. The investor receiving cash cannot reinvest it at an interest rate as high as risk. The compensation that investors demand to accept this risk is an additional interest spread offered as the call premium.

**Servicing Cost-** Some financial claims are difficult to service. This means that the process of collecting interest and principal payment providing accurate records or monitoring the ongoing credit position of the borrowing involves

considerable operating costs. This cost is included in the interest rate charged and is referred to as the servicing cost.

***Exchange Rate Risk-***

A foreign company establishing manufacturing facility in Nepal might be inclined to issue shares and or bonds denominated in Nepalese rupees rather than foreign dollars. Investors also have available to them many investments involving exchange rate risk. This risk refers to the potentiality that the rate of exchange between the domestic currency and foreign denominated currency will change as a result of any factors. The primary risk for the borrower is the devaluation of 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 currency. This potential change in currency values must be reflected in computing the cost of borrowing.

***Taxability-*** The final factor influencing the change in interest rate is taxability. Financial claim income is typically subject to taxation. Since the value of the financial claim is based on it's anticipate cash flow, taxation acts to reduce those cash flows. Not all incomes are taxable equally. Thus, higher the tax, lower will be the cash flow and higher the interest rate and vice versa.

**2.2 Review of Articles and Journal**

Rameshwori Pant (2056), in *Nepal Bank Patrika* viewed the management of internal loan is directly affected by the interest rate. According to her, the interest rate determines the level of investment which can be invested by the investors. In case of perfect financial market, interest rate is determined by the supply of money (which can be invested) and its demand (from private sector, government sector). But in developing countries interest rate must be higher because of governments' high demand for capital.

Sahindra Shrestha (2000), in *Prashasan: The Nepalese Journal of Public Administration* mentioned that top banks have comparatively lower dependency than smaller banks; smaller banks are prone to face higher impact

of interest rate on mobilization of its fund. This is the reason why smaller banks need to increase deposit interest rate and decrease lending rate to minimize the expected negative impact of interest rate. He came to the following findings:

- The wider spread of interest rate help the commercial banks to manage the higher liquidity position and good profitability.
- A high interest in deposit and low in lending is important to attract customer to the bank but facilities offered by banks also plays an important role for the success of banks.
- An appropriate and realistic interest rate on lending can help in the optimum utilization of available resources.

Deepak Raj Bhandari (2001) in *Prashashan : The Nepalese Journal of Public Administration* mentioned that "Impact of Interest Rate structure on investment portfolio of Commercial Banks of Nepal." He found the deposit rate and lending rate increased slightly immediately after liberalization of interest rate on Aug. 31, 1999 but started to decline thereafter. To point out his findings:

- i. Interest rate structure of commercial banks greatly influenced their profitability which depends upon their interest spread.
- ii. Deposit rate is still the most important determinant of the deposit collection of the commercial banks.
- iii. Lower rate of interest helped increase the credit flow.
- iv. Commercial banks investment in government and other securities dramatically increased in the following year of the interest rate liberalization.
- v. Many commercial banks invest a small part of their resource in non-fund based area.
- vi. The study showed decreasing trend of increasing ratio of loan and advance of commercial banks to their resources.

- vii. The study also shows the increasing demand for credit can be met only increasing deposit collection.

Kishor Kumar Khatri (2004), in *Nepal Bank Patrika* viewed to share, according to him the overall performance of commercial banks is satisfactory and NRB has to pay more active role to enhance the operation. He further writes:

- Liquidity position of commercial banks is satisfactory.
- The coefficient of correlation of deposit and lending and investment of commercial banks have better position.
- The coefficient of interest rates and deposits of commercial banks do not have better position.
- The trend of deposit, loan and advances and investment and investment to deposits is in decreasing trend.

He concluded his thesis mentioning that the interest rate has played important role in deposit mobilization of the bank. So, the structure of interest rate should be changed according to the need of nation.

Devlal KC (2064), in *Nepal Bank Patrika* published an article on "Interest Rate Policies." In his article he mentioned interest rate is one of the main weapons of monetary policy.

He mentioned the following facts regarding interest rate. The level of interest rate depends upon the internal liquidity, situation of external interest rates, change in exchanging 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.

The desire to save money of the general people is closely related with the rate of interest on deposit but the rate of interest on deposit of financial institution itself depends up on the liquidity position of the bank and the amount of loan demanded low rate of interest adversely affects the saving

mobilization, flexibility of capital and effective utilization of capital resources while higher interest rate affects investment negatively.

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.

### **2.3 Review of Theses**

For the depth understanding of interest rate and its impact some relevant books, research paper, articles and genuine thesis are also reviewed to share knowledge left by past researcher and books. The review of the old but valuable literatures is done in following order:

Rajbhandary (2000) conducted a study entitled “The Interest Rate Structure of Commercial Banks in Nepal.” The objective of his study was to show the relation of interest rate with saving and fixed deposits; with loans and advances and with interest earning (i.e. interest received on loan minus interest paid on deposits).

His analysis concludes that the time deposits are positively and significantly correlated with the interest rates. There is significant correlation between the saving deposits and the rate of interest. Fixed deposit is more sensitive to the interest rate revision done by NRB. The correlation between the growth of fixed deposits and the interest rate particularly from 1994 and 2000 is most significant but the relation between interest rate and loan and advances is less significant. Among the entire sector, the private sector seems most sensitive to interest rate change. Most of the loans too correlated positively if absolute cumulative figure are taken. But the growth rate of total loans and advances except investment on government securities is negatively correlated more with the weighted average rate of interest since 1994. The growth of loan to private sector is also negatively correlated with interest rate since 1991. Negative correlation between loans and interest rate meant that loan decrease at higher interest rate and vice versa.

The net interest earning is depended upon interest coverage. The total interest received and the total interest paid significantly correlated in the case of both of the banks i.e. Nepal Bank Limited and Rastriya Banijya Bank, the

sample organizations of the study. In his view that NRB can well monitor the credit flow and profits of the commercial banks in Nepal by manipulating the rates of interest. It can manipulate the demand for and supply of money.

Kshetry (2001) conducted a study entitled “Interest rate structure and its relation with deposits, inflation and credits in Nepal” in with the following objectives:

- ) To present a concrete picture of the interest rate structure in Nepal
- ) To predict the relationship between interest rate and other economic variable like deposit, inflation, and credit flow in Nepal
- ) To analyze the impact and the implication of the policy of interest rate of NRB

With the above mentioned objectives, he was of the view that deposit depends upon numerous factors besides income, inflation and interest rates and he concluded his study as:

- ) If other variable are kept constant, institutional interest rate is important explanatory variable to influence the volume of deposit in Nepal.
- ) Interest rates play an important role in under developed country like Nepal where the demand for capital is increasing at each level of income. An appropriate interest rate can divert investment in proper field. This means that the upward movement in the deposit rates increases the volume of deposits.
- ) According to him, the fixation of attractive interest rates on deposit has been responsible for the substantial growth in the volume of deposits in recent years.
- ) He also opines that most of the commercial banks in Nepal are concentrated only in the urban areas. Regarding deposit mobilization in the present context, the urban areas have occupied major parts of the credit and the credit is concentrated in urban areas. The volume of deposit has overcome the volume of credit.
- ) Finally, the relationship between credit flow and loan rates is found out to be negative. If the loan rate of interest is in concession, there is the possibility of raising investment and thus the volume of credit.

Bhatta (2004) conducted a study entitled “Interest Rate and its effect on Deposit and Lending” with the following objectives:-

- ) To examine the relationship between interest rate and deposits
- ) To examine the relationship between interest rate and loans
- ) To present and analyze interest rate structure of various commercial banks in different time period
- ) To show the relationship between inflation and interest rate on deposit and lending

The conclusions drawn by Bhatta are as follows:-

- ) Deposit rates of all the sample banks under study are in decreasing trend; means that every year deposit rates of sample banks under study have decreased.
- ) Lending rates of all the sample banks under study are also in decreasing trend; means that every year lending rates of sample banks under study have decreased.
- ) Analysis shows that interest rates on lending are far higher than deposit rates of sample banks. The correlation coefficient between these two variables (deposit rate and lending rate) of sample banks comes highly positive.
- ) The simple correlation coefficient between deposit rate and deposit amount of sample banks were highly negative. But out of them, correlation coefficient analysis of one sample bank is found to be negative. It means that in that case the theory doesn't match the analysis. So, writer concludes that case the result appears in that study was different than the theory.
- ) The correlation analysis between lending rate and lending amount of all sample banks under study comes highly negative. This relation between two variables (lending rate and lending amount) of sample banks matches with the theory which says with the increase in lending rate, lending amount decreases and vice-versa. So, he concluded that lending rate is the most important determinant of loan and advances of all commercial banks. This makes clear that borrower's seem more interest conscious.



Parajuli (2005) has conducted a research on “Interest rate and its relation with Deposit, Lending and Inflation in Nepal.” In this study, the disseminator tries to portrait the relation of interest rate with deposit and lending amount (i.e. existence of substitution effect). The findings drawn by Mr. Parajuli from his study were as follows:-

- ) The interest rate on both deposit and lending of all the sample banks are found to be in decreasing trend. Theoretically, there is positive relationship between saving amount and saving interest rate but here negative relationship is found. It states that there is no substitution effect in Nepalese financial market.
- ) Analysis of fixed deposit amount and fixed interest rate shows negative relationship except RBB and NBL. Theoretically, there is negative relationship between lending interest rate and lending amount. In this study for the 5 sample banks except NBL have negative correlation between these two variables.
- ) The relationship between interest rate on deposit and inflation rate is positive. Similarly, the correlation between interest rate on lending and inflation rate is found to be moderately positive. He also concluded that the spread between deposit interest rate and lending interest rate is in decreasing trend.

Khanal (2067) has conducted a research work on "Impact of Interest Rate on Deposit Mobilization in Nepalese Commercial Banks." The objective of the study was to understand and analyze the impact of interest rate on deposit mobilization and its long term effects on the profitability of the selected banks. Beside the main objectives following are the specific objectives:

- i. To study the interest rate spread and its impact on the profitability of the bank.
- ii. To study the dominance of the interest income to the total earning of the bank.
- iii. To find out the perception of bankers regarding impact of interest rate on deposit collection and mobilization.

To achieve the objective of this study, analytical as well as comparative research design was used. Some statistical accounting tools have been applied

to examine facts and analytical techniques were adopted to evaluate the impact of interest rate on deposit mobilization and profitability of the banks. From the study following major findings are obtained:

- ) The figures of interest earned to total assets showed banks are behaving in similar patterns. This ratio is in increasing pattern. Over the years the ratio lies between 5 to 7 percent.
- ) Interest coverage ratio reveals that these banks are maintaining comparatively higher interest coverage ratio than others. Here the Nabil Banks is comparatively in strong position.
- ) The total loan to total deposit ratio of Everest Bank Limited and Nabil Bank Limited shows that EBL has comparatively invested high portion of its deposit funds into lending than NABIL. So EBL has been much aggressive in lending larger portion of its deposit funds.
- ) Total investment to total deposit shows fluctuating investment pattern. NABIL has invested higher than EBL. Bigger banks do not depend on lending of its deposit, they foresee the future prospects in investments and take risk to uncertain venture that's why they invested as high as in investment.
- ) Net interest income of these banks shows NABIL has maintained comparatively higher net interest income than EBL. Both banks have positive growth rates.

Ghimire (2067) has conducted a research study on Interest Rate of Commercial Banks and Its Impact on Deposit And Lending of Money." The primary objective of this study was to identify the structure of the interest rate of commercial banks and its impact on deposit and lending. In order to achieve primary objective, the sub objectives are highlighted as below:-

- i. To study and analyze the relationship of interest rate on the volume of deposits of commercial banks
- ii. To study and analyze the relationship of interest rate structure on the volume of lending of commercial banks

The thesis will cover and include the financial and statistical tools to analyze the data in order to reach to the conclusion of the research. In order to

get the concrete results from this research, data are analyzed, by using different types of tools.

On the basis of above entire presentation and analysis of relevant data of sample banks using various analytical tools, the major findings are as follows:

- ) The interest rate on both deposit and lending of all sample banks are found to be in fluctuating (generally decreasing) trend. But, on the contrary to this, deposit amount and lending amount is increasing every year.
- ) The saving deposit amount and saving interest rate have inverse relationship of all sample banks (except NABIL). The value of correlation coefficient between saving deposit rate and saving deposit amount of sample banks under study is found as 0.431192, -0.745084, -0.810354 for NABIL, EBL and BOK respectively. These values show that there is high degree of inverse relationship except NABIL.
- ) Analysis of fixed deposit amount and fixed interest rate shows positive relationship for NABIL, EBL and BOK. The correlation coefficient is found as 0.99026, 0.628976, 0.660947, for NABIL, EBL and BOK. This shows that the people depositing more money in fixed deposit are affected by yield rate on fixed deposit.

### **Research Gap**

Above relevant reviews contribute to enhance the fundamental understanding and knowledge which require to make study meaningful and purposive a research. Most of the previous research studies were based on interest rate on deposit mobilization. Most of them have indicated the association between deposit. There are a few research in the topic impact of interest rate on deposit mobilization and profitability. However, no one has done study on "Impact of Interest Rate on Deposit Mobilization and Profitability" with reference to EBL and Nabil Bank Limited. Therefore, the researcher attempts to study in this area.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

Research Methodology is a way to systematically solve the research problem (Kothari, 1990:10). It is understood as a science of studying how the research is done scientifically. In it we study the various steps that are generally adopted by a researcher, studying the research problem along with the logic behind them.

With a view to attain the overall objective of examining the interest rate and its impact on deposit mobilization and profitability, this study attempts to identify the impact of interest rate on lending and deposit of commercial banks in Nepal. To achieve the stated objectives certain methodology should have to be followed which is discussed in this chapter. It provides a description of methods and procedures for collecting and analyzing the data.

#### **3.1 Research Design**

“A research design is the arrangement of continuous collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure” (Kothari 1992). To achieve the objective of this study, analytical as well as comparative research design have been used. Some statistical accounting tools have been applied to examine facts and analytical technique have been adopted to evaluate the impact of interest rate on deposit mobilization and profitability of the banks.

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

Out of thirty-one commercial banks operating in Nepal only two commercial banks, namely, Everest Bank and Nabil Bank Ltd. Both of these banks are quite well performing in the present context. We have used our judgement in selecting these two banks.

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

As per nature of the study, the study is solely based on secondary data. According to the need and objective, secondary data are compiled, processed and tabulated in the time series. Formal as well as informal discussions were

also held with the concerned staff of the banks. A set of questionnaire will be administered to obtain additional information of the related problem. Questionnaire has been appended at the end of the study.

Similarly, various information are also collected from related periodicals, magazines and other published and unpublished reports and documents.

### **3.4 Methods of Analysis**

To achieve the objectives of the study various financial, statistical and accounting tools have been used. The analysis of data will be done according to pattern of data available. Data collected will be brought under statistical scrutiny after the raw data is edited, coded and tabulated. Data will be analyzed in descriptive form interpreting each part systematically so that each and every person is able to understand as per their need.

The data covered from different sources will go through two different approaches:

1. Financial tools,
2. Statistical tools.

Under financial tool simple growth patterns and highly sophisticated tool like ratio analysis will be used while under statistical tools graph, Karl Pearson's coefficient of correlation and method of least square will be used and corresponding hypothesis will be drawn.

#### **i. Financial Tools**

Out of various financial tools the analysis of the following ratios has been used for the evaluating the performance of the bank.

- a. Loan and advances to total deposit ratio.
- b. Total investment to total deposit ratio.
- c. Return on total deposit ratio.
- d. Interest earning to total assets ratio.
- e. Interest coverage ratio.

- f. Net interest margin (NIM)
- g. Analysis of net interest income.
- h. Analysis of effective interest rate ( $\Leftrightarrow$ )
- i. Analysis of interest rate spread.
- j. Growth ratio.

## ii. Statistical tools used

### a. Coefficient of Correlation (r)

Correlation may be defined as the degree of linear relationship existing between two or more variables. Two variables are said to be correlated when the changes in the value of one variable is accompanied by the change of another variable. Simple correlation coefficients measure the degree of simple relationship between the two variables. Among the various method of finding out coefficient of correlation, Karl Pearson's method is applied in the study. The result of coefficient of correlation is always between + 1 and -1, when,  $r = +1$ , it means there is perfect relationship between two variables and vice-versa. When  $r = 0$ , it means there is no relationship between two variable. The Pearson's formula is:

$$r = \frac{xy}{x^2 y^2}, \text{ Where } \begin{array}{l} x = x - \bar{x} \\ y = y - \bar{y} \end{array}$$

The correlation will be determined for the following group variables.

1. Coefficient of correlation between average deposit interest rate and deposit.
2. Coefficient of correlation between average lending interest rate and total lending.
3. Coefficient of correlation between interest spread rate and net profit after tax.

### b. Probable Error

The probable error is used to measure the reliability and test of significance of correlation coefficient. It is calculated by the following formula:

$$P.E. = 0.6745 \times \frac{1 Z r^2}{\sqrt{n}}$$

Where,

r = the value of correlation coefficient

n = No. of pairs of observation.

P.E. is used in interpretation whether the calculated value of r is significant or not.

- If  $r < P.E.$ , it is insignificant, i.e., there is no evidence of correlation.
- If  $r > 6 P.E.$  it is significant.
- If  $P.E. < r < 6 P.E.$  no thing can be concluded.

### c. Regression Analysis

Regression analysis studies the statistical relationship between the variables. The main objective of regression analysis is to predict or estimate the value of dependent variable. Corresponding to a given value of independent variables. When there is one predictor variable, it is simple regression analysis. It is multiple regression analysis, where there are two or more predictor variables. A regression analysis provides us the more information about the slope of the relationship.

In our study, we will be doing regression analysis of the following dependent and independent variables.

1. Between deposit collection (dependent variable) and deposit interest rate (independent variable) of banking industry.
2. Between lending (dependent variable) and lending interest rate (independent variable) of banking industry.
3. Between NPAT (dependent variable) and interest spread rate (independent variable) by banking industry.

Regression equation of y on x is given by,

$$y = a + bx \dots\dots\dots (i)$$

Where,

y = dependent variable

x = independent variable

a = intercept line

b = slope of the line (it measures the average changes of value of y as a result of one unit change in value of x.

It is also called regression coefficient of y on x. In other words, it measures the rate of relationship.

The value of the constant a and b can be determined by solving following two normal equations (applying principle of least squares).

$$\sum y = na + b\sum x \dots\dots\dots (ii)$$

$$\sum xy = a\sum x + b\sum x^2 \dots\dots\dots (iii)$$

Now, substituting the value of a and b in equation (i), we get required estimated regression equation of y on x.

**d. t-statistic**

The t-test is appropriate when the sample size is less than 30 and the population's standard deviation is unknown. For applying t-test in the context of small sample, the t-value is calculated first and compared with the table of t at a certain level of significant for value of t exceeds the table value (say 0.005) we infer that the difference is significance at 5% level. But if 't' is less than the concerning table value of the t the difference is not treated as significant.

The test of following null hypothesis will be examined to draw the conclusion.

- Deposit interest rate does not play a significant role in deposit collection.
- Lending interest rate does not play a significant role in loan disbursements.
- Interest spread does not play a significant role in total net profit after tax.



## **CHAPTER IV**

### **DATA PRESENTATION AND ANALYSIS**

The main objective of this chapter is detailed presentation, analysis and their interrelationship of the data and other available information concerning interest rate of commercial banks (sample banks) and their impact in deposit and lending of money from which result of Nepalese commercial banks and their market can be obtained. The relevant data and information necessary for the study and to show the relationship between variables i.e. between interest rate on deposit and deposit amount and interest on lending and lending amount are presented analyzed and interpreted keeping the objectives set in mind. This chapter is categorized into three parts; presentation, analysis, interpretation and findings. The analysis is fully based on secondary data. Firstly, data are presented in terms of table, graph chart of figures according to the need. The presented data are then analyzed using various statistical tools as mentioned in chapter three according to the requirement of the study and at last interpretation is made as per properties of presented data and calculated value.

#### **4.1 Ratio Analysis**

Simply, an arithmetical relationship between two figures is known as ratio. The ratio analysis is adopted to make rational decision of financial variability of the companies. The significance of financial ratio analysis may be viewed in different ways. Every interested party such as creditors, investors or company strengths and weaknesses of the company as well as historical and current financial position of concerned can be determined. In this study, following ratios are calculated and analyzed.

##### **4.1.1 Loan and Advances to Total Deposit Ratio**

This ratio measures how successfully the banks are able to mobilize the total deposit on loan and advances for profit generating purpose. Higher the ratio indicates the better mobilization of total deposits, but too high is not be better from its liquidity point of view. A higher ratio is usually preferred by the

bank. This ratio can be calculated by dividing loan and advances by total deposits. This ratio can be stated as:

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

In the following table we have presented loan and advances to total deposit ratio of two sampled banks.

**Table 4.1**

**Loan and Advance to Total Deposit**

**(Rs. in million)**

**Everest Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Deposit	13802	18186	23976	33323	36932
Loan and advances	9801	13664	18339	23884	27556
Loan and advance/ deposit	0.7101	0.7513	0.7648	0.7167	0.7461
Growth rate	-	0.0580	0.0179	-0.0628	0.0410

**NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Deposit	19347	23342	31915	37348	46410
Loan and advances	12922	15545	21365	27589	32268
Loan and advance/ deposit	0.6679	0.6659	0.66943	0.7387	0.6952
Growth rate	-	-0.0029	0.0053	0.1034	-0.0588

Source: Annual Report of Related Bank.

Table 4.1 shows that the clear picture of loan and advances to total deposit ratio of NABIL and EBL. In the year 2005/06 EBL has maintained the ratio 71.01%, then it is increased in the year 2006/07 and 2007/08 and slightly decreased in the year 2008/09, and then it is increased in the year 2009/10. Nabil Bank maintained the ratio upto 66.79% in year 2005/06, and slightly decreased in the year 2006/07. It increased in year 2007/08 and 2008/09, but decreased in the year 2009/10.

Deposit figures of two banks have been in increasing trend and in the same way loan and advances have also been increasing. Due to higher amount of remittance, deposits have been increasing and along with the peace process

investment opportunities have been also increasing so that the loan and advances have been increasing.

EBL maintained the ratio above 70% but Nabil maintained above 66% only. Thus, EBL is in good position due to the proper mobilization of deposit.

#### 4.1.2 Total Investment to Total Deposit Ratio

The commercial banks must mobilize its deposit fund by investing in different securities issued by government and other financial, non financial sectors. This ratio measures the extent to which the banks are capable to mobilize their deposits on investment in various securities. This ratio is computed by dividing total investment by total deposit ratio. It can be stated as:

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

The total investment consists of government securities, investment on debentures and bonds, shares in subsidiary companies, shares in other companies and other investments.

**Table 4.2**  
**Total Investment to Total Deposit Ratio**

(Rs. in million)

##### Everest Bank Limited

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Deposit	13802	18186	23976	33323	36932
Investments	4200	4984	5060	5948	5008
Investments/deposits	0.3043	0.2741	0.2110	0.1785	0.1356
Growth rate	-	-0.0992	-0.2302	-0.1540	-0.2403

##### NABIL Bank Limited

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Deposit	19347	23342	31915	37348	46410
Investments	6178	8945	9939	10826	13670
Investments/deposits	0.3193	0.3832	0.3114	0.2898	0.2945
Growth rate	-	0.2001	-0.1873	-0.0693	0.0162

Source: Annual Report of Related Bank.

Table 4.2 shows the total investment to total deposit ratio of NABIL and EBL. In the year 2005/06 EBL maintained the ratio 30.43%, then it is in decreasing trend. The reason may be poor investment environment of the country. Nabil maintained the ratio upto 31.93% in the year 2005/06, then it increased in year 2006/07 after that it decreased in year 2007/08 and 2008/09, it is increased in year 2009/10.

From the above calculation it can be said that the overall position of NABIL is better than EBL due to higher ratio. The higher the ratio better the performance and vice-versa. The higher ratio indicates higher investing capacity of the deposit.

#### 4.1.3 Return on Total Deposit

This ratio measures the degree of NPAT earned by using total deposits. In other words, it reveals the relationship between NPAT and total deposits with an explanation of the ability of management in efficient utilization of deposits. This ratio is the mirror of banks' overall financial performance as well as its success in profit generation. The reason is that deposits and earning from its utilization are the main aspects of Nepalese commercial banks. Return on total deposit ratio can be stated as:

$$\text{Return on total deposit ratio} = \frac{\text{Net profit after tax}}{\text{Deposits}}$$

**Table 4.3**

#### **Return on Total Deposit**

##### **Everest Bank Limited**

**(Rs. in million)**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Deposit	13802	18186	23976	33323	36932
Net profit after tax	237	296	451	639	832
NPAT/deposit	0.0172	0.0162	0.0188	0.0192	0.0225
Growth rate	-	-0.0581	0.1605	0.0213	0.1718

## **NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Deposit	19347	23342	31915	37348	46410
Net profit after tax	635	674	746	1031	1139
NPAT/deposit	0.0328	0.0288	0.0234	0.02760	0.0245
Growth rate	-	-0.1219	-0.1875	0.1795	-0.1123

Source: Annual Report of Related Bank.

The above table represents return on total deposit of EBL and NABIL. The data shows EBL maintained return on total deposit ratio 1.72% in year 2005/06, it decreases on year 2006/07 upto 1.62%. After year 2007/08 it follows increasing trend. NABIL maintained this ratio 3.28% on the year 2005/06, it decreases in year 2006/07 and 2007/08 but increases in year 2008/09 then it decreased in year 2009/10.

Overall performance of NABIL is better than EBL because NABIL has higher ratio than EBL. Higher ratio indicates higher earning capacity of bank by using deposit. That reveals NABIL properly mobilizes its deposit than EBL. Reasons may be excellent investing area and competent human resources.

### **4.1.4 Interest Earned to Total Assets**

This ratio reveals how much interest mobilizing the assets in the banks has generated. Interest occupies significant place in income for the banks. Generally banks earn interest through the provision of loans and advances, overdraft and investment in securities.

Higher ratio indicates higher efficiency in the mobilization of resources and ability of interest earning and vice-versa.

This ratio can be stated as following ways:

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

Where Interest earned represents the total interest earned in income statement of related banks.

**Table 4.4**  
**Interest earned to total Deposit**

**Everest Bank Limited**

(Rs. in million)

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Total Assets	15959	21433	27149	36916	41383
Interest earned	903	1144	1548	2187	3102
Interest earned / Total Assets	0.0566	0.0534	0.0570	0.0592	0.0749
Growth rate	-	-0.0565	0.0674	0.0386	0.2652

**NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Total Assets	22330	27253	37133	43867	52150
Interest Earned	1310	1588	1979	2798	4048
Interest earned / total Assets	0.0586	0.0583	0.0533	0.0638	0.0776
Growth rate	-	-0.0051	-0.0857	0.1969	0.2163

Source: Annual Report of Related Bank.

The above table shows the ratio of interest earned to total deposits of Everest Bank Limited and Nabil Bank Limited. The data shows Nabil Bank Limited had good figures as it earned as compare to EBL.

**4.1.5. Interest Coverage Ratio**

Interest Coverage ratio also called time interest earned ratio. This ratio measures the extent to which interest on debt capital is covered by EBIT. It is the measure of debt serving capacity / ability to make interest on long term debt. The higher the ratio, the better able is firm to fulfill its interest obligation. This ratio is calculated as follows.

$$\text{Interest coverage ratio} = \frac{\text{Earning before interest and tax}}{\text{Interest}}$$

**Table 4.5**  
**Interest coverage ratio**

**(Rs. in million)**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest	401	517	633	1012	1573
EBIT	746	971	1290	1902	2762
Interest coverage ratio	1.8603	1.8781	2.0379	1.8794	1.7558
Growth rate	-	0.00956	0.0851	-0.0777	-0.0657

#### **NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest	357	555	758	1153	1960
EBIT	1255	1549	1846	2632	3585
Interest coverage ratio	3.5154	2.7909	2.4353	2.2827	1.8290
Growth rate	-	-0.2061	-0.1274	-0.06266	-0.1987

Source: Annual Report of Related Bank.

The above table shows the interest coverage ratio of Everest Bank Limited and Nabil Bank Limited. NABIL Bank Limited has maintained comparatively higher interest coverage ratio than Everest Bank Limited. The ratio lower than 2 times is not sufficient to desirable standard. Thus, Nabil Bank Limited maintained above standard except in year 2009/10. But Everest Bank Limited is not able to meet the standard except year 2007/08.

#### **4.1.6 Net Interest Margin (NIM)**

NIM is the difference between interest charged on loan and advances and investments and interest paid on the deposits of the bank. This ratio is derived by employing the following formula:

$$\text{NIM} = \frac{\text{Interest income} - \text{Interest expenses}}{\text{Loan \& advances} + \text{Investment on securities}}$$

**Table 4.6**  
**Net Interest Margin**

**(Rs. in million)**

**Everest Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest income	903	1144	1549	2187	3102
Interest expenses	401	517	634	1013	1573
Loan and advances	9801	13664	18339	23885	27556
Investment	4201	4984	5059	5948	5008
Net interest margin	0.0359	0.0336	0.0391	0.0623	0.0470
Growth rate	-	-0.0641	0.1637	0.5934	-0.2456

**NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest income	1309	1588	1978	2798	4048
Interest expenses	357	556	758	1153	1960
Loan and advances	12922	15545	21365	27589	32269
Investment	6178	8945	9939	10826	13671
Net interest margin	0.0498	0.0421	0.0390	0.0428	0.0455
Growth rate	-	-0.1546	-0.0736	0.0974	0.0631

Source: Annual Report of Related Bank.

The above table shows the net interest margin for Everest Bank Limited and Nabil Bank Limited. Nabil Bank Limited has higher net interest margin in year 2005/06 and 2006/07 as compared to EBL. But after year 2007/08, 2008/09, and 2009/10 Everest Bank Limited has higher net interest margin as compared to Nabil Bank Limited.

Growth ratio of EBL has decreased in year 2006/07 and 2009/10 but increased in 2007/08 and 2008/09 and growth ratio of NABIL has decreased in year 2006/07 and 2007/08 after that growth rate is increased.



#### 4.1.7 Analysis of Net Interest Income

Net interest income is the difference between the interest earned and interest paid. It is the excess of interest income over interest expenses borne by the bank. Higher the spread between interest income and interest expenses shows the effective and efficient mobilization of deposits.

The table below shows the net interest income of sample commercial banks, which is calculated as:

**Table 4.7**  
**Net Interest Income**

(Rs. in million)

##### **Everest Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest income	903	1144	1549	2187	3102
Interest expenses	401	517	634	1013	1573
Net interest income	502	627	916	1174	1529
Growth rate	-	0.249	0.4609	0.2816	0.3024

##### **NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest income	1309	1588	1978	2798	4048
Interest expenses	357	556	758	1153	1960
Net interest income	952	1032	1220	1645	2088
Growth rate	-	0.0840	0.1822	0.3484	0.2693

Source: Annual Report of Related Bank.

The above table shows the net interest income of EBL and NABIL. NABIL has maintained comparatively higher net interest income than EBL. NABIL showed high 2088 million in 2009/10 and lower 952 million in 2005/06 likewise EBL has maintained in high 1529 million in 2009/10 and low 502 million in 2005/06.

#### 4.1.8 Analysis of Effective Interest Rate

Effective interest rate is the percentage of interest earned over interest earning assets. This indicates the earning capacity of earning assets. In this study, earning assets of commercial bank is taken as loan and advances and investment in shares and debentures.

Effective interest rate is calculated by using following formula:

$$\text{Effective interest rate} = \frac{\text{Interest earned}}{\text{Interest earning assets}}$$

**Table 4.8**  
**Effective Interest Rate**

**(Rs. in million)**

##### **Everest Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest income	903	1144	1549	2187	3102
Loan and advances	9801	13664	18339	23885	27556
Investment	4201	4984	5059	5948	5008
Effective interest rate	0.0645	0.0613	0.0662	0.0733	0.0953
Growth rate	-	-0.0496	0.0799	0.1073	0.3001

##### **NABIL Bank Limited**

Year	2005/06	2006/07	2007/08	2008/09	2009/10
Interest income	1309	1588	1978	2798	4048
Loan and advances	12922	15545	21365	27589	32269
Investment	6178	8945	9939	10826	13671
Effective interest rate	0.0685	0.0648	0.0632	0.0728	0.0881
Growth rate	-	-0.0540	-0.0247	0.1519	0.2102

Source: Annual Report of Related Bank.

The above table shows the effective interest rate of EBL and NABIL. Effective interest of EBL is decreased in year 2006/07 then after it is increased. Whereas effective interest rate of NABIL is decreased in year 2006/07 and 2007/08 then it is in increasing trend.

#### 4.1.9 Analysis of Interest Rate Spread

Interest rate spread is the difference in rate which a bank earns through investments, and the rate offered in attracting deposits and borrowings. In other words, rate of interest income on loan and investments less rate of interest expenses on deposits and borrowings. Higher the spread rate higher will be the income of the bank and vice-versa.

**Table 4.9**  
**Interest Rate Spread**

Year	EBL	Nabil
2005/06	3.99	4.9
2006/07	3.92	4.15
2007/08	4.40	3.94
2008/09	4.37	4.16
2009/10	4.78	4.40
Average	4.292	4.31

Source: Annual Report of Related Bank.

The above table shows the interest spread of EBL and NABIL. The interest rate spread of EBL is 3.99, 3.92, 4.40, 4.37, 4.78 in year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively. The interest rate spread of NABIL is 4.9%, 4.15%, 3.94%, 4.16%, 4.40% in year 2005/06, 2006/07, 2007/08, 2008/09 and 2009/10 respectively.

EBL has maintained 5 years average of 4.292% and high 4.78% in year 2009/10 and low 3.92 in year 2006/07. NABIL has maintained 5 years average at 4.31% and high 4.9% in year 2005/06 and low 3.94% in year 2007/08.

#### 4.1.10 Growth Rate

It represents how well the commercial banks those growth rates are maintaining their economic and financial position. Here those growth rates are analyzed and interpret ate, which are related to the fund mobilization and investment management of a bank. In this topic, there are four types of growth rate and under this section growth rate of total deposit, total investment, loan

and advances and net profit are calculated. The equation of the growth rate is given by:

$$A_n = A_0(1+g)^{n-1}$$

Where,

$A_n$ =Total amount in the n year

$A_0$ =Total amount in the initial year

G=Growth rate of the amount during the study period

n=Total no. of study period

Here, n=5

To examine and analysis following growth rates are calculated in this study.

#### 4.1.10.1 Growth Rate of Total Deposit

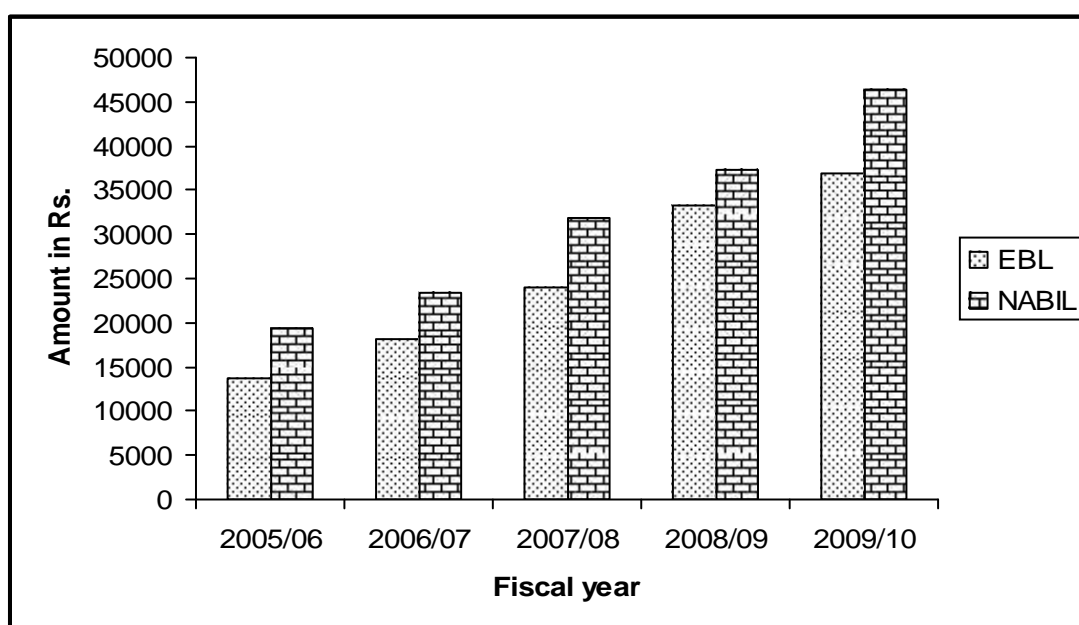
**Table 4.10**  
**Total Deposit**

**(Rs. In Million)**

Year	EBL	NABIL
2005/06	13802	19347
2006/07	18186	23342
2007/08	23976	31915
2008/09	33323	37348
2009/10	36932	46410
Growth rate %	0.2790	0.2445

The above table shows the growth rate of total deposit of EBL and NABIL from 2005/06 to 2009/10. EBL has higher growth rate than NABIL. The deposit collection for last year of EBL and NABIL were 36932 and 46410 million respectively.

**Figure 4.1: Total Deposit of NABIL and EBL**



We also can see the above diagram to understand about the total deposit position and growth rate of two banks comparatively.

#### 4.1.10.2 Growth Rate of Loan and Investment

Growth rate of total loan and investment of sample banks are calculated to find out the trend of growth of total loan and investment to detect better position of banks. The growth rates are derived from the interpolation of the factor, which is calculated by dividing final loan and advances with initial loan and advances.

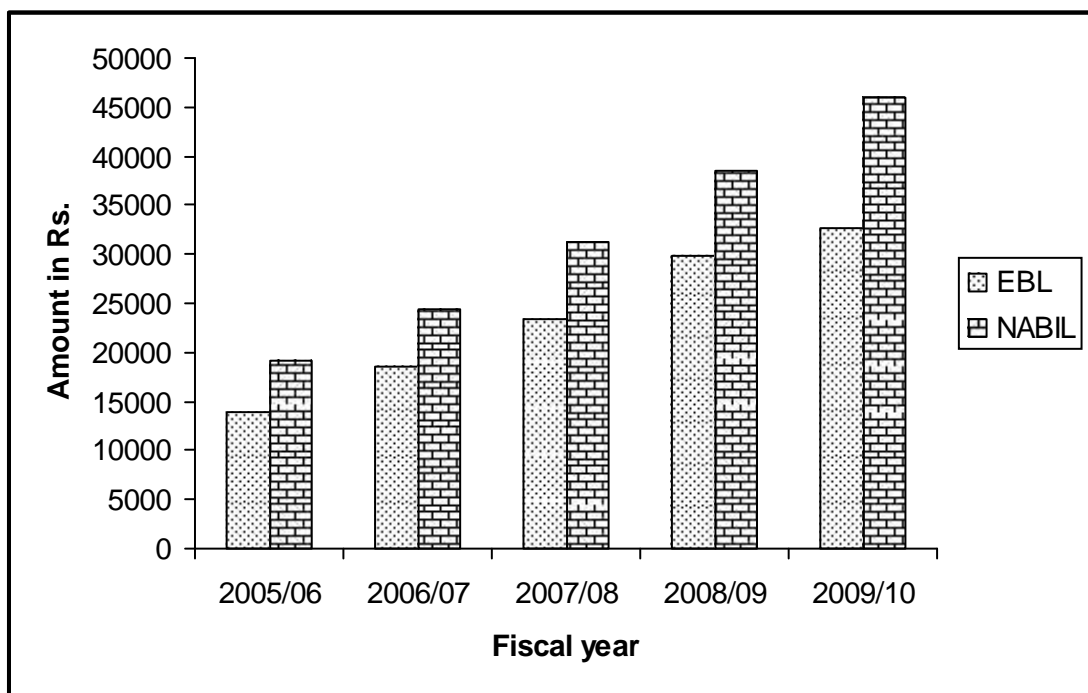
**Table 4.11  
Total Loan and Investment**

	<b>Rs. in million</b>	
Year	EBL	NABIL
2005/06	14002	19100
2006/07	18648	24490
2007/08	23398	31304
2008/09	29833	38415
2009/10	32564	45940
Growth rate %	0.2349	0.2453

Source: Annual Report of Related Bank.

The above table shows the growth rate of loan and investment from 2005/06 to 2009/10. The growth ratio for EBL for the period of five year was 23.49% on the contrary its growth rate for deposit for same period was 27.90%. Similarly, rate for NABIL for the period of five year was 24.53% on the other side its growth rate for deposit for same period was 24.45%. Total loan and investment for EBL and NABIL reached 32564 and 45940 million in 2009/10 respectively.

**Figure 4.2: Total Loan and Investment**



We also can see the above diagram to understand about the total loan and investment and its growth rate over 5 years period of these banks.

#### **4.1.10.3 Growth Rate of Interest Income**

Growth rates of interest income of sample banks are calculated to find out the trend of Growth of interest income and to detect better position of banks. The growth rates are derived from the interpolation of the factor, which is calculated by dividing final net profit with interest income.

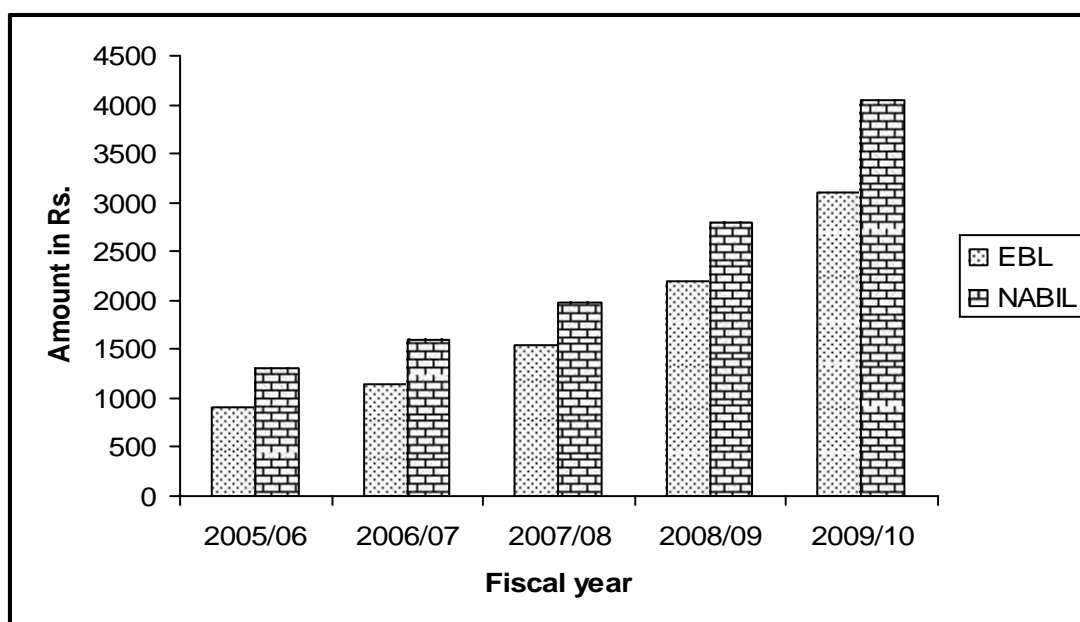
**Table 4.12**  
**Interest Income**

**(Rs. in million)**

Year	EBL	NABIL
2005/06	903	1309
2006/07	1144	1588
2007/08	1549	1978
2008/09	2187	2798
2009/10	3102	4048
Growth rate %	0.3614	0.3261

The above table shows the growth rate of interest income of Everest Bank Limited and Nabil Bank Limited from 2005/06 to 2009/10. EBL and NABIL both maintained growth rate for 36.14% and 32.61% respectively over five year period. Interest income of EBL and NABIL reached 3102 and 4048 million respectively in the last year.

**Figure 4.3: Interest Income of NABIL and EBL**



The above diagram shows that the total interest income and growth position of EBL and NABIL from 2005/06 to 2009/10.

#### 4.1.10.4 Growth Rate of Interest Expenses

Growth rates of interest expenses of sample banks are calculated to find out the trend of growth of interest expenses and to detect better position of banks.

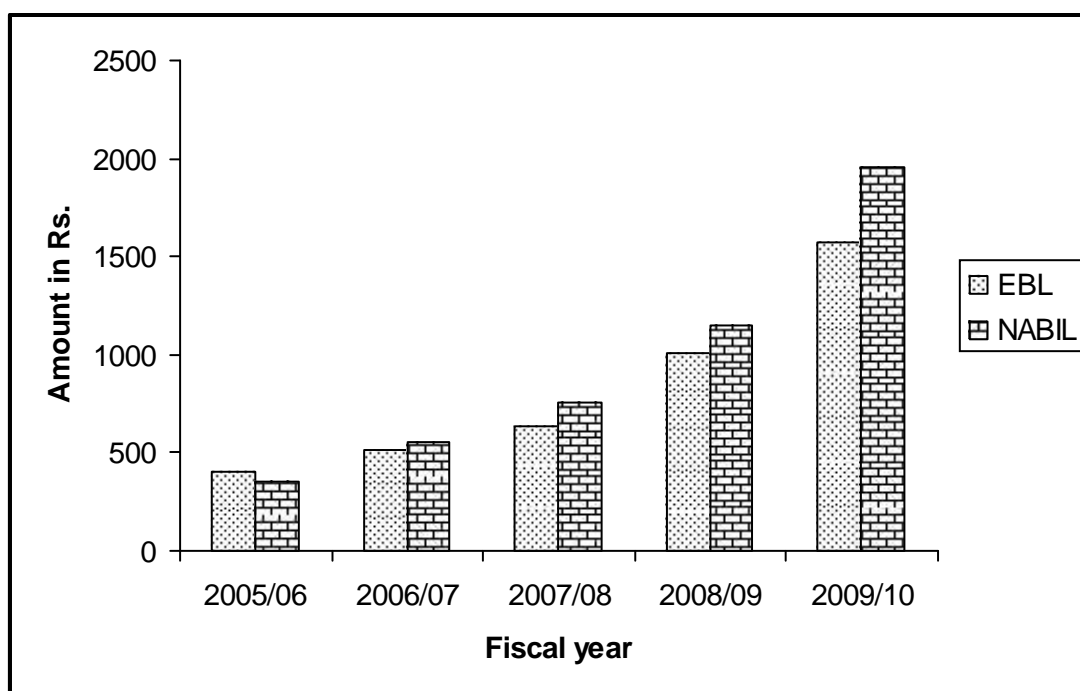
**Table 4.13**  
**Interest Expenses**

(Rs. in million)

Year	EBL	NABIL
2005/06	401	357
2006/07	517	555
2007/08	632	758
2008/09	1013	1153
2009/10	1573	1960
Growth rate %	0.4073	0.5307

The above table shows the growth rate of interest expenses of EBL and NABIL from 2005/06 to 2009/10. EBL and NABIL showed growth rate of interest expenses 40.73% and 53.07% respectively for the five year period and reached 1573 and 1960 million in last year respectively.

**Figure 4.4: Interest Expenses of NABIL and EBL**





We can also see the above diagram to know about the interest expenses over five year period and growth rate of its of two banks form 2005/06 to 2009/10.

## 4.2 Coefficient of Correlation Analysis

In this section coefficient of correlation analysis is done for the purpose of finding relation between interest and deposit and lending and lending rate and net profit after tax and interest spread rate.

### 4.2.1 Correlation Coefficient between Average Deposit Interest Rate and Total Deposit

The following table shows the deposit interest and total deposit of EBL and Nabil Bank Limited.

**Table 4.14**  
**Summary of Calculation**

(Rs. In Million)

Year	EBL		NABIL	
	Int. Rate	Deposit	Int. Rate	Deposit
2005/06	3.10	13802	3.31	19346
2006/07	3.07	18186	2.50	23342
2007/08	2.82	23976	2.69	31915
2008/09	3.52	33323	3.22	37348
2009/10	4.78	36932	4.42	46410

Source: Appendix III and IV.

The following table shows the relationship between deposit interest rate and total deposit. The objective of calculating  $r$  is whether deposit interest rate has the relationship to deposit collection or not. Principally interest rate and deposit have positive relationship but due to increment of income (specially remittance) deposit has been increased when interest rate is low.

**Table 4.15**  
**Summary of Calculation**

Banks	Evaluation Criterion			
	$r$	$r^2$	P.E. (R)	6.P.E.(r)
EBL	0.7712	0.5947	0.1223	0.7338
NABIL	0.6901	0.4762	0.1580	0.9480

Source: Appendix III and IV.

We have interest rate (independent variable) and deposit amount (dependent variable) from the above table. We can conclude that both banks have positive correlation i.e. interest rate and amount deposit are positively correlated. While testing the significance of  $r$  we find EBL has greater value of  $r$  than  $6PE(r)$  (i.e.  $r > 6PE(r)$ ) which indicates there is significant relationship between deposit interest rate and deposit of EBL. While testing significance of  $r$  we find NABIL has  $PE < r < 6PE(r)$  that means nothing can be concluded on the context of NABIL.

#### **4.2.2 Correlation Coefficient between Average Lending Interest Rate and Total Lending**

The following table shows the lending interest and total lending of EBL and Nabil Bank Limited.

**Table 4.16**  
**Summary of Calculation**

**(Rs. In Million)**

Year	EBL		NABIL	
	Int. Rate	Loan	Int. Rate	Loan
2005/06	7.09	9801	8.21	12922
2006/07	6.99	13664	6.65	15545
2007/08	7.22	18339	6.63	21365
2008/09	7.89	23885	7.38	27589
2009/10	9.53	27556	8.82	32269

Source: Appendix V and VI.

The following table shows the relationship between lending interest rate and total lending. The objective of calculating  $r'$  is whether lending interest rate has the relationship to loan disbursement or not. However the interest rate and loan have reverse relationship but due to increment in investment loan has been increased when interest is increased. Now in Nepal, investment opportunities have been growing up along with the peace process, this is the main cause of investment.

**Table 4.17**  
**Summary of Calculation**

Banks	Evaluation Criterion			
	R	r <sup>2</sup>	P.E. (R)	6.P.E.(r)
EBL	0.8599	0.7394	0.0786	0.4716
NABIL	0.1585	0.0251	0.02941	1.7646

Source: Appendix V and VI.

From the above table, it has been found that correlation coefficient between lending interest rate (independent variable) and total lending amount (dependent variable) of EBL and Nabil have positive correlation i.e. lending interest rate is increased and lending amount is in increasing trend.

We know, higher the interest rate lower the lending and lower the interest rate higher lending interest rate. So, interest rate and lending have reverse relationship in other words lending depends on interest rate.

At the same time while testing the significance of r i.e. 6 P.E. (r) EBL has lower value than r. It proved the significant. But NABIL has  $PE < r < 6 PE$  so nothing can be concluded on the context of NABIL bank.

#### **4.2.3 Correlation Coefficient between Interest Spread Rate and Net Profit after Tax**

The following table shows the interest spread rate and net profit after tax of EBL and NABIL

**Table 4.18**  
**Correlation Coefficient between Interest Spread Rate and Net Profit after Tax**

Year	EBL		NABIL	
	Int. Spr. Rate	NPAT	Int. Spr. Rate	NPAT
2005/06	3.99	237	4.9	635
2006/07	3.92	296	4.15	674
2007/08	4.40	451	3.94	746
2008/09	4.37	639	4.16	1031
2009/10	4.78	832	4.40	1139

Source: Appendix VII and VIII.

The following table shows the relationship between interest spread rate and net profit after tax. The objective of calculating 'r' is whether interest spread rate has the relation to earn net profit after tax or not.

**Table 4.19**

**Summary of Calculation**

Banks	Evaluation Criterion			
	r	r <sup>2</sup>	P.E. (R)	6.P.E.(r)
EBL	0.9413	0.8860	0.0344	0.2063
NABIL	-0.1846	0.0341	0.2941	1.7484

Source: Appendix VI and VIII.

From the above table, it has been found that correlation coefficient between interest spread rate (independent variable) and net profit after tax (dependent variable) of EBL have positive correlation where at the same time NABIL has negative correlation. While testing the significant of i.e. 6 PE (r) of EBL has proved to significant as r is greater than 6 P.E. But NABIL has proved to be insignificant as r is less than P.E.

Interest spread rate is the difference between interest rate of lending and interest rate on deposit. So higher the interest spread rate higher the income and lower the interest spread rate lower the income. So interest spread rate and net profit after tax has direct relationship.

Hence, it can be concluded that EBL has significant relation between interest spread rate and net profit after tax. But NABIL has no significant relationship between interest spread rate and NPAT.

**4.3 Regression Analysis**

In this section regression analysis is done for the purpose of findings relation between interest and deposit, lending and lending rate and net profit after tax and interest spread rate.

**4.3.1 Regression Analysis of Total Deposit (Y) on Deposit Interest Rate (X)**

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$y=na+b x$$

$$xy=a x+b x^2$$

Solving these two normal equations, we get

$$b = \frac{\sum XY - \frac{\sum X \sum Y}{n}}{\sum X^2 - \frac{(\sum X)^2}{n}} = \frac{5998061.83 - \frac{16.73 \times 284580}{5}}{558.22 - \frac{(16.73)^2}{5}}$$

$$= \frac{229285.75}{11.2071} = 20458.9724$$

$$a = \bar{Y} - b\bar{X} = 56916 - 20458.9724 \times 3.346 = -11539.7217$$

Now substituting the value of a and b in equation (i), we get required estimated regression equation of Y on X is,

$$Y = -11539.7217 + 20458.9724X$$

### **Test of Significance of the Regression Coefficient**

#### **Setting of Hypothesis**

**Null Hypothesis  $H_0$ :**  $b=0$  i.e. Value of regression coefficient is insignificant (Deposit interest rate does not play a significant role in deposit collection)

**Alternative Hypothesis  $H_1$ :**  $b \neq 0$  i.e. value of regression coefficient is significant. (Deposit Interest rate plays a significant role in deposit collection).

Since the no. of observation is less than 30, we use t-test to know the significance of the regression coefficient.

$$T = \frac{b}{SE}$$

The standard deviation of the Deposit rate

$$s_x = \sqrt{\frac{\sum X^2 - \frac{(\sum X)^2}{n}}{n-1}}$$

$$= \sqrt{\frac{2.2441}{5}} = 0.45$$

$$s_x = \sqrt{0.45} = 0.67$$

The standard deviation of the total deposit

$$t_y^2 = \frac{\sum (Y - \bar{Y})^2}{n}$$

$$= \frac{1690292494}{5}$$

$$= 338058498.8$$

$$\exists y = \sqrt{338058498.8}$$

$$= 18386.3672$$

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

$$= \frac{5 \times 998061.83 - \frac{1673 \times 284580}{5}}{\sqrt{5 \times 57.22 - \frac{(16.73)^2}{5}} \sqrt{5 \times 17887447770 - \frac{(284580)^2}{5}}}$$

$$= \frac{229285.75}{\sqrt{11.2071} \sqrt{8451462450}}$$

$$= \frac{229285.75}{307760.2717}$$

$$= 0.745$$

$$r^2 = 0.555$$

$$\text{Standard Error (SE)} = \frac{t_y}{t_x} \sqrt{\frac{1 - r^2}{n}}$$

$$= \frac{18386.3672}{0.67} \sqrt{\frac{1 - 0.555}{5}}$$

$$= 27442.3391 \times 0.2983$$

$$= 8186.0498$$

Value of t when b=20458.9247 and S.E.= 8186.0498

$$T = \frac{20458.9247}{8186.0498}$$

$$= 2.4992$$

$$\text{Degree of Freedom (D.F.)} = n - 2 = 5 - 2 = 3$$

Critical Value: The tabulated value of t at 5% level of significance for 3 d.f. is 2.353

**Decision:** Since calculated value of t at 5% is higher than its tabulated value, alternative hypothesis H1 is accepted. That is, value of regression coefficient is significant for increase in interest rate. So deposit interest rate plays a significant role in deposit collection (Source: Appendix IX).

#### 4.3.2 Regression Analysis of Total Lending (Y) on Lending Interest Rate (X)

According to the principle of least squares, two normal equations for estimating two numerical constants a and b are given by,

$$y = na + b x$$

$$xy = a x + b x^2$$

Solving these two normal equations, we get

$$b = \frac{\sum XY - \frac{\sum X \cdot \sum Y}{n}}{\sum X^2 - \frac{(\sum X)^2}{n}} = \frac{5 \times 1590639.91 - \frac{38.22 \times 202935}{5}}{5 \times 295.69 - \frac{(38.22)^2}{5}}$$

$$= \frac{197023.85}{17.6816} = 11142.8745$$

$$a = \bar{Y} - b\bar{X} = 40587 - 11142.8745 \times 7.644 = -44589.1327$$

Now substituting the value of a and b in equation (i), we get required estimated regression equation of Y on X is,

$$Y = -44589.1327 + 11142.8745X$$

#### Test of Significance of the regression coefficient:

Setting of hypothesis

**Null Hypothesis H<sub>0</sub>:** b=0 (i.e. value of regression coefficient is insignificant)

(Lending interest rate does not play a significant role in loan disbursements)

**Alternative Hypothesis  $H_1$ :**  $b \neq 0$  (i.e. value of regression coefficient is significant.)

(Lending interest rate plays a significant role in loan disbursements.)

Since the no. of observation is less than 30, we use t-test to know the significance of the regression coefficient.

Formula of t-test is given by

$$t = \frac{b}{SE}$$

The standard deviation of the lending rate

$$s_x^2 = \frac{\sum (X - \bar{X})^2}{n}$$

$$= \frac{3.5481}{5}$$

$$= 0.7096$$

$$s_x = \sqrt{0.7096}$$

$$= 0.8424$$

The standard deviation of the total lending

$$s_y^2 = \frac{\sum (Y - \bar{Y})^2}{n}$$

$$= \frac{937988482}{5}$$

$$= 187597696.4$$

$$s_y = \sqrt{187597696.4}$$

$$= 13696.6308$$

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



$$= \frac{5 \times 1590639.91 \times 38.22 \times 202935}{\sqrt{5 \times 295.69 \times (38.22)^2 \times \sqrt{5 \times 9174511327 \times (202935)^2}}$$

$$= \frac{197023.85}{\sqrt{17.6816} \mid \sqrt{4689942410}}$$

$$= \frac{197023.85}{287968.2026}$$

$$= 0.6842$$

$$r^2 = 0.4681$$

$$\text{Standard Error (SE)} = \frac{\dagger y}{\dagger x} \mid \frac{\sqrt{1 - Zr^2}}{\sqrt{n}}$$

$$= \frac{13696.6368}{0.8424} \mid \frac{\sqrt{1 - 0.4681}}{\sqrt{5}}$$

$$= 16259.0584 \times 0.3262$$

$$= 5303.7049$$

Value of t when b=11142.8745 and S.E.= 5303.7049

$$T = \frac{11142.8745}{5303.7049}$$

$$= 2.1010$$

Degree of Freedom (D.F.) = n-2 = 5-2=3

Critical Value: The tabulated value of t at 5% level of significance for 3 d.f. is 2.353

**Decision:** Since calculated value of t at 5% is lower than its tabulated value, therefore null hypothesis  $H_0$  is accepted. That is, value of regression coefficient is insignificant. This indicates lending of loan does not depend upon the rate of interest. It is quite strange to note that higher lending rate have been recorded at a higher rate of interest. A number of factors like liquidity crisis in business sector, good business environment, new business opportunities, higher rate of interest on deposit etc. may be responsible for this. In fact shortage of funds

have been often heard in the market, and also reported in the newspapers as well. Thus, it is quite natural to borrow even at a rising rate of interest (Source: Appendix-X).

### 4.3.3 Regression Analysis of Total Net Profit After Tax (y) on Interest Spread Rate (x)

According to the principle of least square, two normal equations for estimating two numerical constants a and b are given by:

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

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

Solving these two normal equations, we get,

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2} = \frac{5 \times 29041.74 - 21.52 \times 66.80}{5 \times 92.81 - (21.52)^2}$$

$$= \frac{145208.70 - 143753.60}{464.05 - 463.1104} = \frac{1455.10}{0.9396} = 1548.6377$$

$$a = \bar{y} - b\bar{x} = 5103.20 - 1548.6377 \times 4.3040$$

$$= 5103.20 - 6665.3367$$

$$= -1562.1367$$

Now, substituting the value of a and b in equation (i) we get, required estimated regression equation of y on x is,

$$y = -1562.1367 + 1548.6377x$$

Test of significance of the regression coefficient

#### Setting of hypothesis:

Null hypothesis,  $H_0$ :  $b = 0$ , i.e. value of regression coefficient is insignificant (interest spread rate does not play a significant role in net profit after tax).

Alternative hypothesis,  $H_1$ :  $b \neq 0$ , i.e. regression coefficient is significant (Interest spread rate plays a significant role in net profit after tax).

Since the no. of observation is less than 30, we use t-test to know the significance of the regression coefficient.

Formula of t-test is given by,

$$t = \frac{b}{SE}$$

The standard deviation of the interest spread rate

$$\exists_x^2 = \frac{(x - \bar{x})^2}{n} \times \frac{0.1920}{5} = 0.0384$$

$$\exists_x = \sqrt{0.0384} = 0.1960$$

The standard deviation of the total net profit after tax,

$$\exists_y^2 = \frac{(y - \bar{y})^2}{n} \times \frac{71842333.20}{5} = 14368466.64$$

$$\exists_y = \sqrt{14368466.64} = 3790.576$$

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

$$= \frac{5 \mid 29041.74 - 21.52 \mid 6680}{\sqrt{5 \mid 92.81 - (21.52)^2} \sqrt{5 \mid 9807834 - (6680)^2}}$$

$$\frac{1455.10}{\sqrt{0.9396} \sqrt{4416770}}$$

$$\frac{1455.10}{203715.4165}$$

$$= 0.0071$$

$$r^2 = 0.0001$$

$$\text{Standard Error (S.E.)} = \frac{t_y}{t_x} \mid \frac{\sqrt{1 - r^2}}{\sqrt{n}}$$

$$= \frac{3790.576}{0.1960} \frac{\sqrt{1 - 0.0001}}{\sqrt{5}}$$

$$= 19339.6735 \times 0.4472$$

$$= 8648.702$$

Value of t when b = 1548.6377 and S.E. = 0.4472

$$t = \frac{1548.6377}{8648.702} = 0.1791$$

Degree of freedom (D.F.) = n - 2 = 5 - 2 = 3

Critical value: The tabulated value of t at 5% level of significance for 3 d.f. is 2.353.

**Decision:** The calculated value of  $t$  at 5% is lower than its tabulated value, therefore null hypothesis  $H_0$  is accepted. This signifies that the value of regression coefficient is insignificant. Moreover, this indicates the net profit after tax does not depend upon the interest spread rate. It is quite strange to note that only higher spread rate increases the net profit after tax. The reason may be that overall performance of bank not only depends upon the interest spread rate but also other factors, such as management of the bank, popularity of bank, investing quality, excellent human resources, good service and so on (Source: Appendix-XI).

#### 4.4 Primary Data Analysis

A small survey was conducted to know about the perception of respondents regarding impact of interest on deposit collection and mobilization. There were 20 respondents who provided their valuable opinion about the matter. The sources however were collected from literate bankers and service holders and none of the people representing other fields were involved in it. All the questions asked in the survey were close ended except one asking the respondents to comment on the impact of interest rate on deposit mobilization. The set of close ended questions and their alternative answers asked in the survey are presented below.

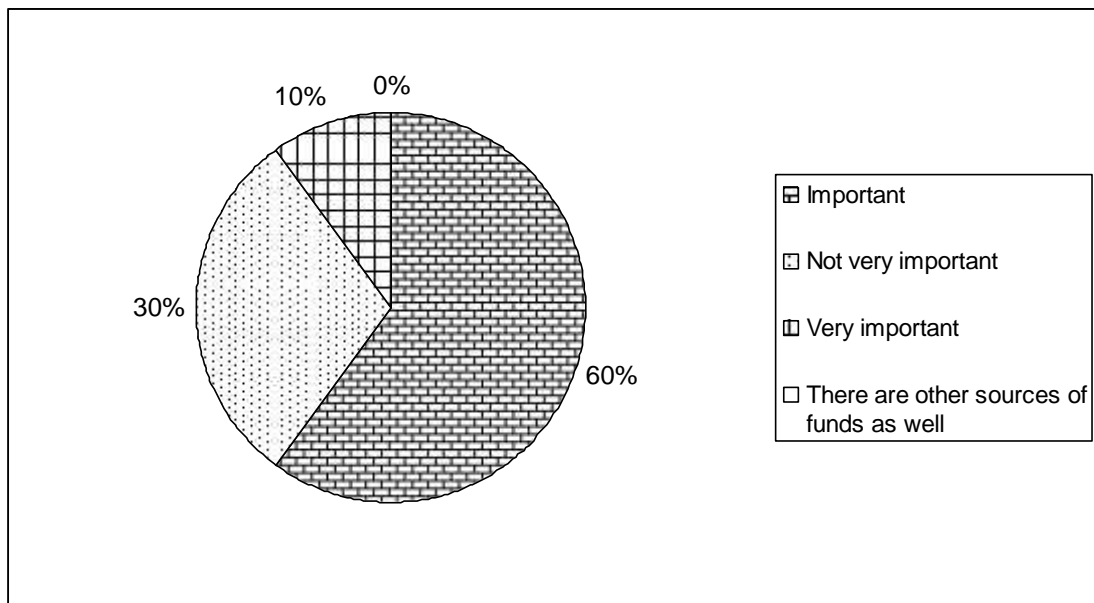
##### 1. How important is deposit for the commercial banks?

S.N.	Options	Number	Percentage
1	Important	12	60
2	Not very important	6	30
3	Very important	2	10
4	There are other sources of funds as well	0	0
Total		20	100

Source: Opinion survey, 2011.

Out of total respondents 60% believed the deposit is important for bank while 30% said it is very important and 10% said it is not very important to run the bank. From this result, it is clear that deposit is the important factor for commercial banks. Following pie-chart depicts the importance of deposit for commercial banks.

**Figure 4.5: Pie-Chart Showing Importance of Deposit for Commercial Banks**



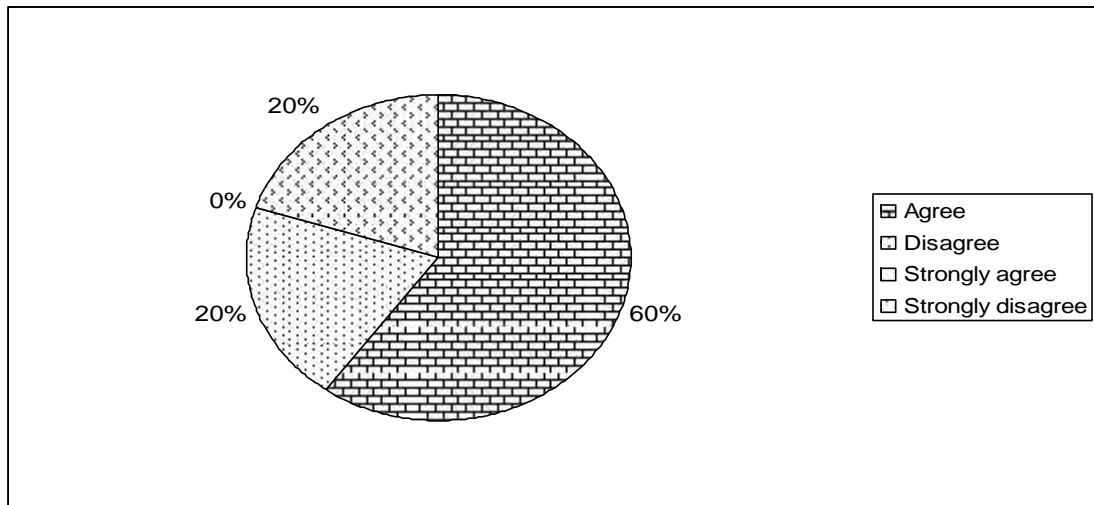
**2. Interest rate is main factor for deposit collection?**

S.N.	Options	Number	Percentage
1	Agree	12	60
2	Disagree	4	20
3	Strongly agree	0	0
4	Strongly disagree	4	20
Total		20	100

Source: Opinion survey, 2011.

Out of total respondents 60% agreed that interest rate is main factor for deposit collection. 20% who were interest conscious believed that interest are driving forces for deposit collection. But 20% disagreed that interest rate are prime factor. Following pie-chart shows the opinion of respondents regarding interest rate is main factor for deposit collection.

**Figure 4.6: Pie-Chart Showing Interest Rate is Main Factor for Deposit Collection**



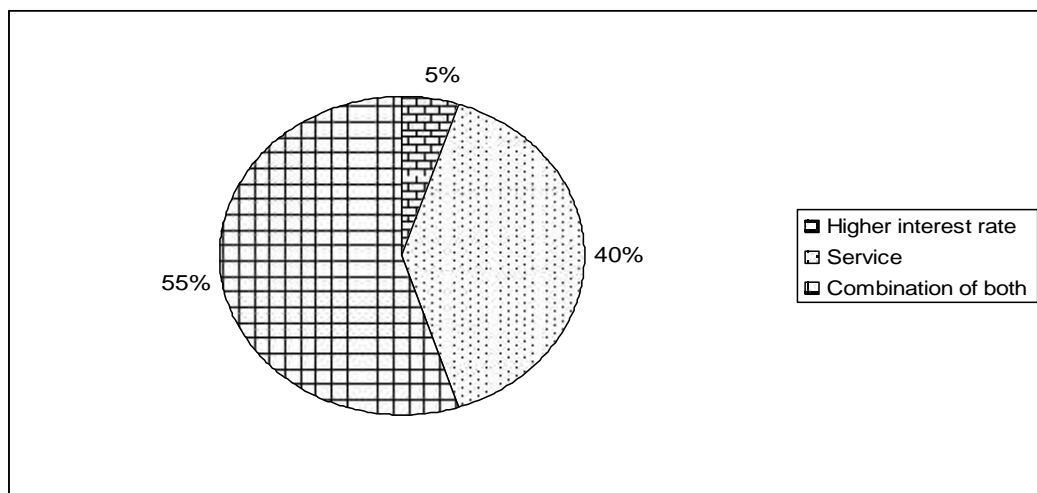
3. What do you prefer higher interest rate or different services provided by commercial banks?

S.N.	Options	Number	Percentage
1	Higher interest rate	1	5
2	Service	8	40
3	Combination of both	11	55
Total		20	100

Source: Opinion survey, 2011.

Out of total respondents 55% said both are equally important for them to transact in the bank, 40% said its service what matters and last comes those preferring higher interest 5%. Following pie-chart shows the preference regarding higher interest rate or different services provided by commercial banks.

**Figure 4.7: Pie-Chart Showing the Preference of Higher Interest Rate or Different Services Provided by Commercial Banks**



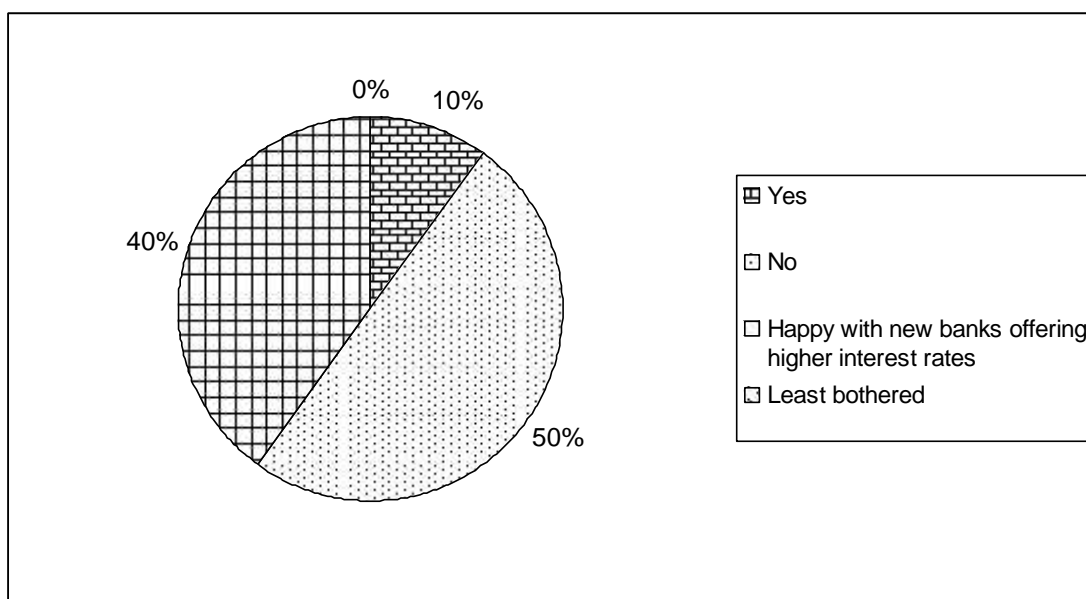
4. Are you happy with interest rates offered by commercial banks?

S.N.	Options	Number	Percentage
1	Yes	2	10
2	No	10	50
3	Happy with new banks offering higher interest rates	8	40
4	Least bothered	0	0
Total		20	100

Source: Opinion survey, 2011.

Half of the respondents were not happy with the interest rates offered by commercial banks. 40% said new banks are providing good interest rates. And they are happy to bank with them. 10% do not care about interest rate they are happy with service provided by the bank. Following pie-chart shows the happy with interest rates offered by commercial banks.

**Figure 4.8: Pie-Chart Showing Satisfaction with Interest Rates Offered by Commercial Banks**



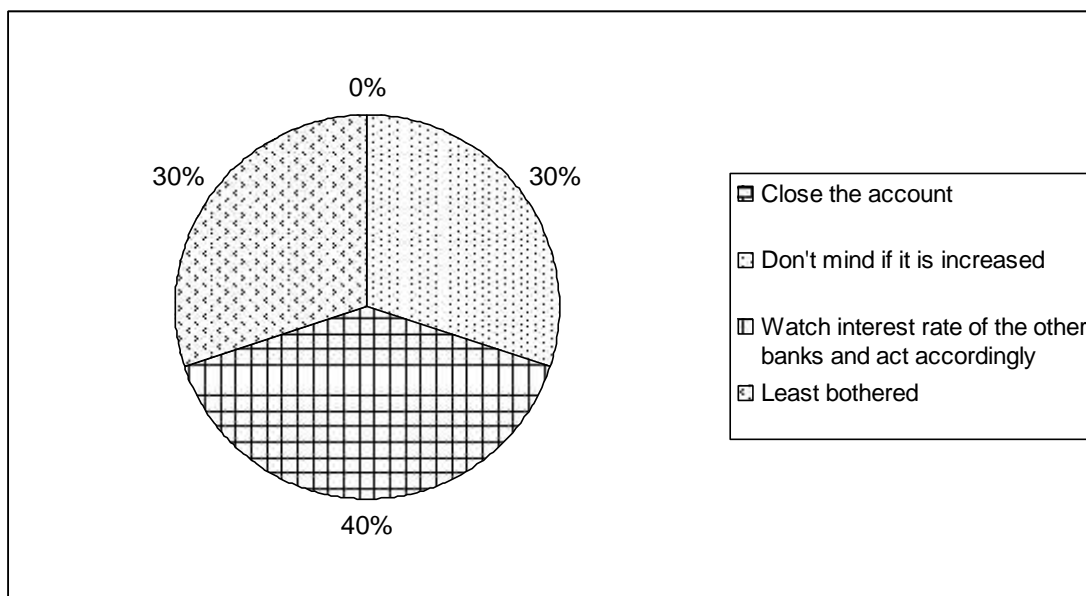
5. What would you do if interest rate offered by bank changes quite often?

S.N.	Options	Number	Percentage
1	Close the account	0	0
2	Don't mind if it is increased	6	30
3	Watch interest rate of the other banks and act accordingly	8	40
4	Least bothered	6	30
Total		20	100

Source: Opinion survey, 2011.

Frequent changes in the interest rates makes 40% of respondents watch the market rates and shift over. 30% do not mind unless it is not decreasing while 30% were least bothered about the changes. Following pie-chart shows the opinion regarding interest rate offered by bank changes quit often.

**Figure 4.9: Pie-Chart Showing Options whether Interest Rate Offered by Bank Changes Quite Often**



6. Do you think commercial banks are enjoying huge interest spread?

S.N.	Options	Number	Percentage
1	No, spread genuine	4	20
2	Yes NRB should tighten its grip to reduce it	6	30
3	Only top bank afford to stretch interest spread	2	10
4	Don't know	8	40
Total		20	100

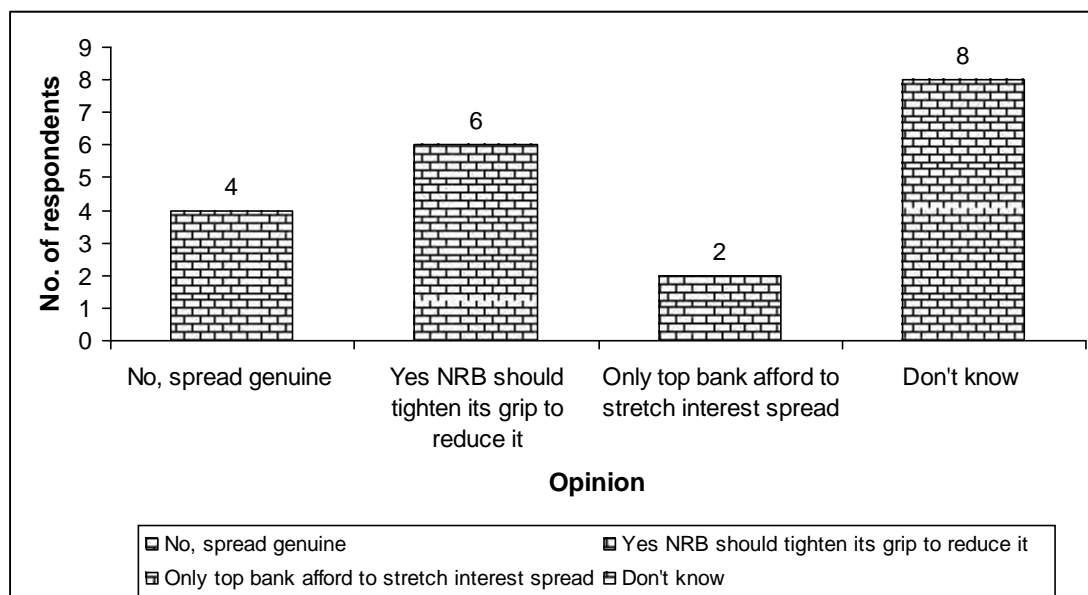
Source: Opinion survey, 2011.

Out of total respondents 20% think it is ok. 30% thinks NRB should intervene in the market for decreasing the interest spread 10% believes only few banks have the ability to stretch the interest spread. The rest 40% were



unaware about the rate of interest spread. Following bar-diagram shows the commercial banks enjoyed huge interest spread.

**Figure 4.10: Bar-Diagram Showing the Commercial Banks Enjoying Huge Interest Spread**



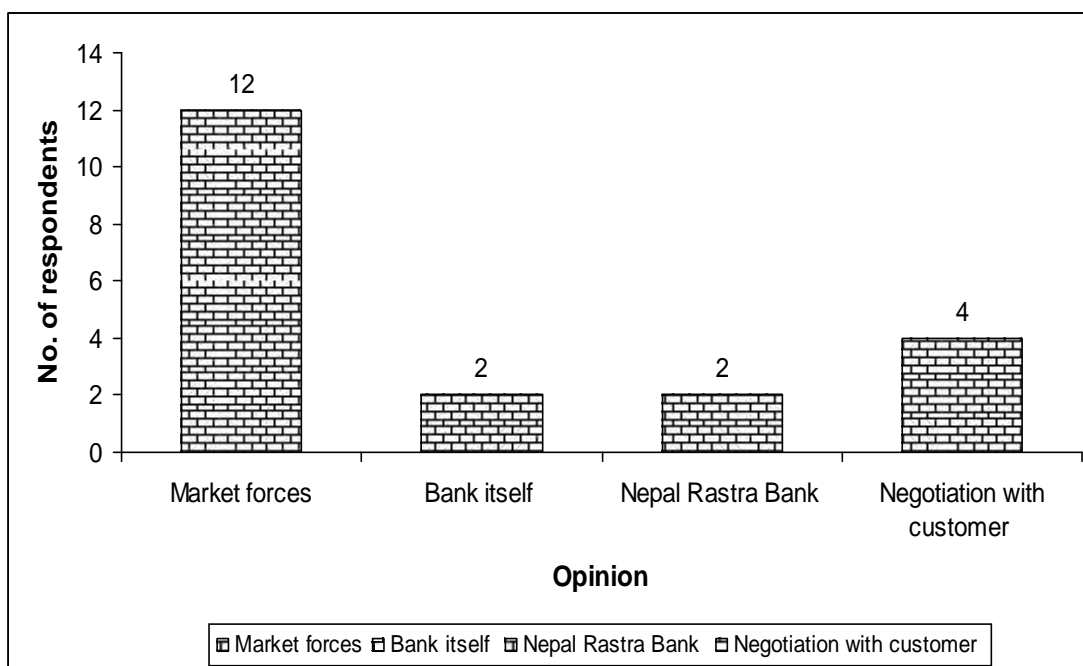
**7. Who should determine the interest rate?**

S.N.	Options	Number	Percentage
1	Market forces	12	60
2	Bank itself	2	10
3	Nepal Rastra Bank	2	10
4	Negotiation with customer	4	20
Total		20	100

Source: Opinion survey, 2011.

Out of total respondents 60% says it market forces that determine the interest rate where demand and supply meets. 20% thinks bank should negotiate interest rate with customer. 10% said bank can itself determine interest rate as per market situation and target market. And remaining 10 % said NRB determine the interest rate. Following bar-diagram shows the determining factors of interest rate.

**Figure 4.11: Bar-Diagram Showing Determinants of Interest Rate**



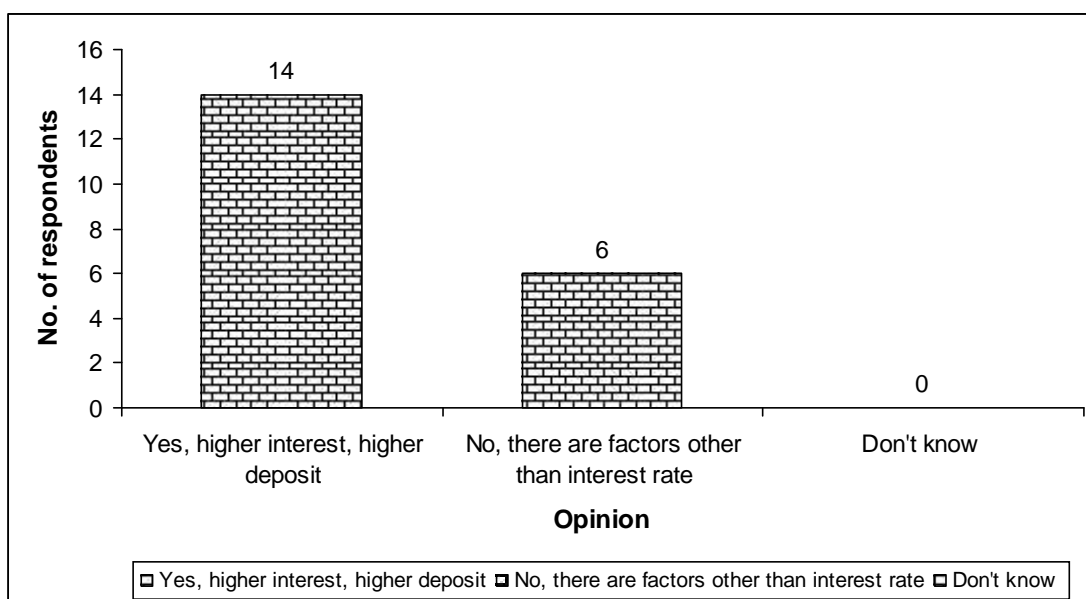
**8. Can bank only rely on the interest rate for collection of deposit?**

S.N.	Options	Number	Percentage
1	Yes, higher interest, higher deposit	14	70
2	No, there are factors other than interest rate	6	30
3	Don't know	0	0
Total		20	100

Source: Opinion survey, 2011.

Over 70% believes that interest rate is not only the factor that helps deposit collection. 30% said its only higher interest rate that attracts huge amount of deposit. Following bar-diagram shows the opinion regarding “can bank only rely on the interest rate for collection of deposit?”

**Figure 4.12: Bar-Diagram Showing Opinion Regarding Bank Rely on the Interest Rate for Collection of Deposit**



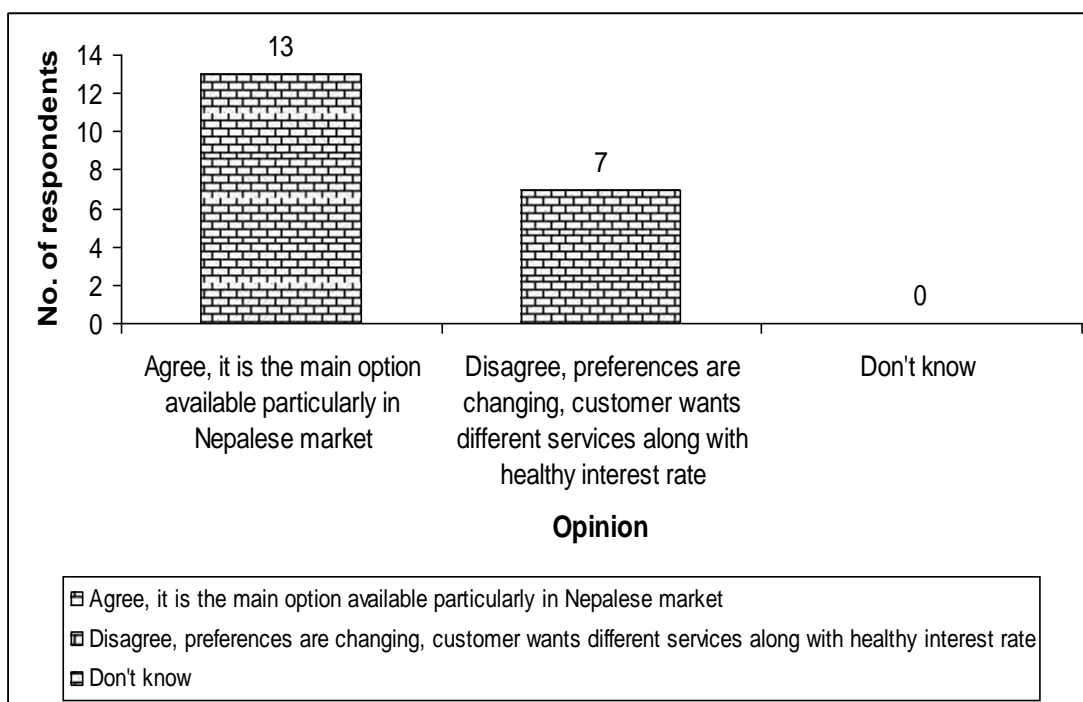
9. Bank can use its interest rate as important tool to compete in the market.

S.N.	Options	Number	Percentage
1	Agree, it is the main option available particularly in Nepalese market	13	65
2	Disagree, preferences are changing, customer wants different services along with healthy interest rate	7	35
3	Don't know	0	0
Total		20	100

Source: Opinion survey, 2011.

Out of total respondents 65% believes only interest rate not be used as tool to compete in the market, it is the combination of interest rate and services rendered. Rest believes interest rate can particularly help in Nepal to lead in the market. Higher deposit interest rate attracts higher deposit, lower lending interest rate increases loan.

**Figure 4.13: Bar-Diagram Showing Whether Interest Rate as Important Tool to Compete in the Market**



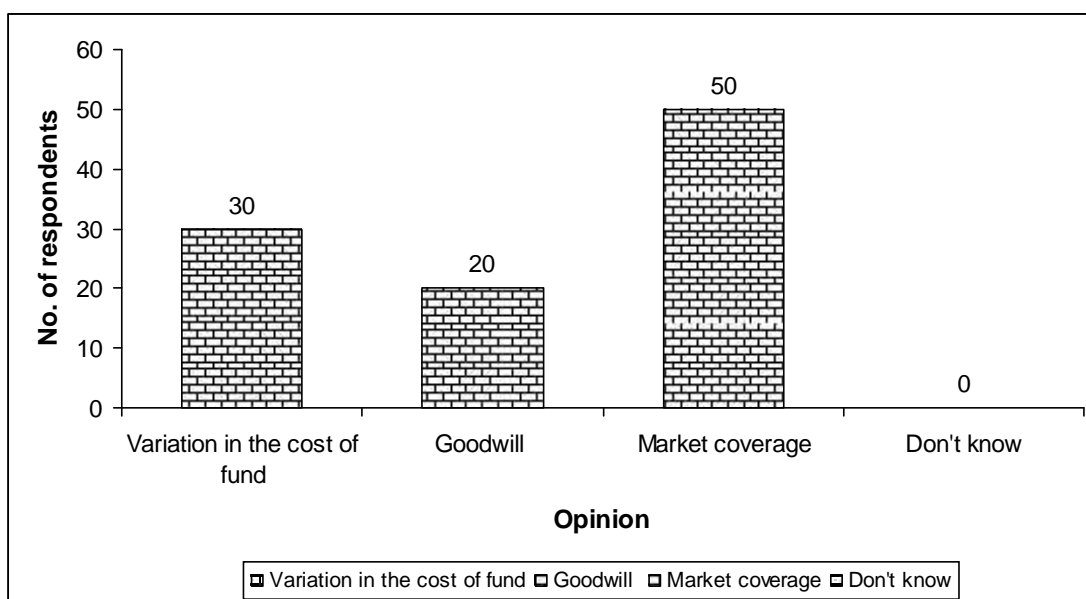
10. Why do you think bank operating in the same market can afford to offer comparatively very different interest rate?

S.N.	Options	Number	Percentage
1	Variation in the cost of fund	30	6
2	Goodwill	20	4
3	Market coverage	50	10
4	Don't know	0	0
Total		20	100

Source: Opinion survey, 2011.

It's variation in the cost of fund says 30% of respondents, 50% says its market coverage and 20% says its goodwill of the bank which helps to afford to offer comparatively very different interest rate.

**Figure 4.14: Bar-Diagram Showing Bank Operating in the Same Market can Afford to Offer Comparatively Very Different Interest Rate**



In your opinion, what impact can interest rate have on the mobilization of the deposit of commercial banks?

Some of the highlights of opinion received from the respondent:

- ) Goodwill of the bank has more weight than the role of interest.
- ) If interest rate and service together offered by bank is placed effectively it can cover the maximum market coverage.
- ) It has significant impact upon the mobilization of deposit, because most of the customers are interested conscious rather than the added values.
- ) In Nepalese market, it is the main factor which holds the reason behind mobilization of the deposit of commercial banks.
- ) In the modern era, people like to have various services rendered by bank like credit card, debit card, online banking services, providing interest rate is not only conclusive evidence for public to deposit money. In order to attract public deposit, besides attractive interest rates, various modern banking facilities should not be avoided.

## **4.5 Major Findings**

### **Findings from Secondary Data**

1. New and small banks showed very aggressive lending policy which ranges from 70 percent to 75 percent of the deposit collected which make them bear higher risk whereas established banks dare to lend between 50 percent to 60 percent of the total deposit collected. But big banks prefer investing a huge money in directed towards investment in low risky assets. Smaller banks are opting to decrease the dependence on interest income and trying to head towards non fund based activities.
2. The figures of interest earned to total assets showed banks are behaving in similar patterns. This ratio is in increasing pattern. Over the years the ratio lies between 5 to 7 percent.
3. Interest coverage ratio reveals that these banks are maintaining comparatively higher interest coverage ratio than others. Here the Nabil Banks is comparatively in strong position.
4. The total loan to total deposit ratio of Everest Bank Limited and Nabil Bank Limited shows that EBL has comparatively invested high portion of its deposit funds into lending than NABIL. So EBL has been much aggressive in lending larger portion of its deposit funds.
5. Total investment to total deposit shows fluctuating investment pattern. NABIL has invested higher than EBL. Bigger banks do not depend on lending of its deposit, they foresee the future prospects in investments and take risk to uncertain venture that its why they invested as high as in investment, however, lower level banks with small deposit has preferred lower investment and lent larger amount of deposit as loans and advances.
6. Return on total deposit of these banks, NABIL has mobilized its deposits more efficiently than EBL. EBL showed decreasing trend in 2006/07 but has increased in 2007/08, 2008/09 and 2009/10. But NABIL showed decreasing trend.

7. Ratio of interest earned to total assets ratio of these banks shows NABIL had good figures than EBL. Both banks has increasing trend except in 2005/06 and 2006/07 year.
8. Net interest margin for these banks shows both banks have good position. NABIL has better position in year 2005/06, 2006/07 but then after EBL has better position.
9. Net interest income of these banks shows NABIL has maintained comparatively higher net interest income than EBL. Both banks have positive growth rates.
10. Effective interest of EBL is in decreasing trend in 2006/07 then it is increased as well as NABIL has decreasing trend in 2006/07 and 2007/08 after then it is increased.
11. Interest spread of these banks shows NABIL has high interest spread in average over five years period.
12. Growth ratio of total deposit of these banks reveals that EBL has higher growth rate as compare to NABIL in average over five year period.
13. Growth ratio of loan and investment of these bank shows NABIL has higher growth rate as compare to EBL in average over five year period.
14. Growth ratio of interest income of these banks from 2005/06 to 2009/10 revels that EBL has higher growth rate as compare to NABIL in average. Interest income of EBL and NABIL reached 3102 and 4048 million respectively in the last year.
15. Growth ratio of interest expenses of these banks from 2005/06 to 2009/10 disclose is that NABIL has higher (53.07%) growth rate as compare to EBL (40.73%) in average the five year period and reached 1960 and 1573 million respectively interest expenses in the last year.
16. From the above calculations we found that deposit interest rate plays a significant role in deposit collection at the same time lending interest rate does not plays significant role in loan disbursements.

17. From the above calculation we found that interest spread rate does not play a significant role in NPAT.

### **Findings from Primary Data**

1. The market survey on impact of interest rate on deposit mobilization revealed many respondents believe that interest rate does play a significant role but there are governing factors that determine the deposit collection and mobilization. The perceptions of the respondent fall under different categories, namely 1. Examine the interest income and expenses, 2. concerned about services and facilities offered by the bank, 3. some believe both interest rate and services are the important factor to attract customers toward bank.
2. More and more people believe it is interest rate that attracts customers particularly in Nepal where people have less saving and they want to see it grow through income generated from it. Therefore most of customer are interest conscious rather than the added values. Many believe interest rate offered by banks at current are not sufficient return on their saving but they are happy with decreasing of lending rates. Despite this people go to banks for service rendered by banks like credit card, debit card, online banking, SMS banking services. Though interest rate had been and still dominating factor for customers to choose the bank but result show they are inclining towards service offered. Therefore, if this inclination is there to continue the impact of interest rate is going to be minimal and banks offering good services and facilities will definitely hit the market with great success.



## **CHAPTER V**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary**

Prior to liberalization existing financial institutions could not meet the national need and carry out capital market activities. With time a number of financial institutions have been established making market more competitive and more innovative. During this period general public showed vast responses in the approaches of the financial institutions. As obvious commercial banks have benefited over other financial institutions because of its vast operational area and product variety. However the commercial banks could not seen bearing such stiff competitive environment; in recent years it began creating small customers who were the share of smaller financial companies.

There are many sources of capital for commercial banks. Deposit is one of the main sources of commercial banks for lending to needy people. Higher the deposit higher the bank's ability to disburse the loan. Such deposits are obligation of the commercial banks. So commercial banks must allocate the funds in different loan and advances and investment giving higher yield over the cost of the deposit. Commercial banks usually give lower interest rate to deposit and charge higher interest rate on disbursement of loan. Established banks having higher deposit base and extended network facility usually have higher interest rate spread which make them earn higher profit and maximize the shareholder's wealth. At the same time new banks having lower interest rate to attract new customers on the ground of attractive interest rate and facilities they offer at lower price.

Interest rates have greater impact on the mobilization of the deposit. The higher interest rates attract more deposit and lower interest rates on loan and vice versa. However in Nepal, due to existence of some uncommon practices, the interest rates do not seem to have such impacts on deposit and credits. Both deposit and lending rates are continuously being revised over the years

decreasing the interest spread. Though it is quite obvious for increasing demand for loan, deposits too to some extent are increasing. This has proved that the customers in Nepal do not care much about when one is depositing but lower lending rate attract more customers to take loan.

When NRB gave full autonomy to commercial banks to determine their own interest rate, banks at different level are offering different rates as per their cost of funds and market standing. Bigger banks have been able to maintain good interest spread while new and small banks are operating at tighter interest spread. Since the banking industry dominated by interest income such as wider or smaller interest spread have greater role to play in the profitability of the bank. It seems that newly established banks are providing higher interest rate on deposit as compared to well set bank but when it comes to lending big banks enjoy same or slightly lower rate maintaining wider spread in interest income.

## **5.2 Conclusion**

Interest is the price that one pays for utilizing a certain amount of money for specified period of time. Interest rate has been the dominating factor for collection and mobilization of deposits and it still continues to be the important one for much longer time. People prefer to deposit when the deposit interest rate is high and like to take loan when lending rate is low but what rate is high and low is determined by the market forces and position of the bank in the market. Big banks in the present market situation are giving lower interest rate on deposit and expect higher interest in return. On the contrary to the small and new banks are offerings comparatively higher interest rates on deposits and disburses loan at interest rate similar to well established bank. This has comparatively decreased interest spread at smaller banks. But still there are seen huge customers traffics in big banks despite many facilities offered by smaller banks.

The overall performance of commercial banks have been sound over the years despite many changes in the interest rates. Since profit of all banks is increasing it is believed interest rates have been seen positive. Though interest

income of bigger banks is increasing and expenses are at decreasing trend than the smaller banks. These shows that it is not interest rate but there are other factors than interest rate determines the position of big banks. However, the decreasing deposit base and lending of bigger bank can not be ignored; currently people are shifting to new banks and other financial institutions for earning reasonable returns. These has been proved by the result of the survey that the many respondents said they are happy with new banks offering higher interest rate and good service. This is the good example of impact of interest rate on the mobilization of funds of bigger banks. Another important reason why change in interest rate can change the profit position of the banks is its dependency on interest income. Since the study shows that top banks have comparatively lower dependency than smaller banks. Smaller banks are prone to face higher impact of interest on the mobilization of its fund. This is reason why smaller banks need to increase deposits interest rate and decrease lending rate to minimize the expected impact of interest rate.

To conclude the following are some of the important impact of changing interest rate that are emerged from the study.

- ) Changing interest rate structure can create a competitive environment among commercial banks.
- ) A high interest rate in deposit and low in lending is important to attract customers to the bank but a facilities offered by the banks also plays a important role for the success of the banks.
- ) The wider spread interest rate helps the commercial banks to manage the higher liquidity position and good profitability.
- ) An appropriate and realistic interest rate on lending can help in optimum utilization of available resources.
- ) The result of the survey, people deposit their amount in bank for gain services and security because if they want to earn more return from their amount they invest other field of investment opportunity but political

situation is not coming in the track therefore it has no alternative option to customers.

So interest rate plays a significant role in economic development. Any banks willing to increase the business should always presents its interest rate structure in such a way that the impact of it should be positive of all. Currently, banks in the market are able to structure its interest accordingly which is the reason of increasing profits year after year.

### **5.3 Recommendations**

On the basis of analysis and highlights presented, following recommendations can be implemented to overcome present weakness and position of commercial banks. The recommendations derived from the study are as following:

- ) A common code of conduct to fix the upper and lower limits of the interest rates is felt necessary. If it is made, it will develop a healthy competition among the banks. Banks will be encouraged to run efficiently and maintain discipline during stiff competition.
- ) Many commercial banks have interest income as main source of income. The higher dependence in interest income should be gradually decreased as it bears higher risk on bank's part. Banks should explore more avenues to increase commission based income brings by increasing facilities and larger network.
- ) Banks should increase its deposit in less interest bearing deposit than increasing deposit in higher interest bearing account. Higher deposit in less cost account expresses positive and everlasting image of the bank in the market.
- ) Generally, it has been a tendency of well established commercial banks to have higher interest spread. These banks should not be allowed to have such higher margin due to their market standings. NRB should intervene in such cases and make its liberal policy open to take control over such policy of the banks.

- ) Commercial banks sell different deposits and loans product by offering different incentives but add hidden costs (service charge, fines, commitment fee) in it. Such costs must reveal to the potential customers before entering into contract.
- ) Commercial banks should emphasize on the repayment of loans. Borrowers should be encouraged to pay loan by offering services, facilities, fee waivers, discounts etc. Collection of more savings from the private sector and its effective mobilization is possible only through good repayment of loans. Good repayment of loans ensures the strength of the commercial banks.

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## **APPENDIX-I**

### **SAMPLE BANK'S PROFILE**

#### **NABIL Bank Limited**

Nabil Bank Limited was started its operation in July 1984 as the first foreign joint venture bank of Nepal. It 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.

Nabil Bank Limited, 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.

Operations of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology which includes ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System, Bangalore, India, Internet banking system and Telebanking system.

#### **Everest Bank Limited**

Everest Bank Limited (EBL) started its operation in 1994 with a view and objectives of extending professionalized and efficient banking services to various segments of the society. The bank is providing customers friendly services through a network of 37 branches across the nation.

Punjab National Bank (PNB) is joint venture partner (holding 20% equity in bank) is the largest nationalized bank in India having 113 years of banking history. PNB is a technology driven bank serving over 35 billion customers through a network of over 4500 branches spread all over the country with a total business of around INR 2178.74 billion.

The bank has been conferred with “Bank of the Year 2006, Nepal” by the banker, a publication of financial times, London. The bank was bestowed with the “NICCI Excellence award” by Nepal India chamber of commerce for its spectacular performance under finance sector.

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