# CHAPTER-I

# INTRODUCTION

## 1.1. Current Scenario of Banking Industry

Financial system of Nepal is still in its primary stage of development. Small and fast growing financial sector comprises of commercial banks and other financial institutions like development banks, finance companies, and cooperatives etc.So far, development of financial services in the country is uneven. In some regions of the country, fast and advanced banking services are available while other regions are deprived of banking sector.

At present there are altogether 30 commercial banks in Nepal. Rastriya Banijya Bank is fully owned by Nepal Government. The role of commercial banks in every nation of the world is in search of attaining the goal of rapid economic development. The ability of commercial bank to create credit and provide numerous banking services like deposit acceptance, overdraft facilities, market making, agency services, investment and general utility services is well appreciated by different sectors. Increase in the horizon of work area and entrance of new market, innovative product and services put the banks a step a head.

The foundation laid by two earlier banks i.e., Nepal Bank Limited and Rastra Banijya Bank to save helped lure depositors to new banks. New joint venture bans and financial institutions were efficient and cost effective in every aspect, weather be the utilization of advance technology, skilled manpower and efficient training tools. This urged old government bank come up with same level of technology and energy to compete in the market gradually occupied by private sector bank. Today every institution is competing with each other for small amount of market share by providing different product, services and applying innovative marketing strategy.

Technological advancement has equally supported banking business. More and more bank is entering the market with globally recognized customer friendly software which offers variety of facilities like debit and credit cards, SMS banking, various online services and the like. However, the cost factor is always the matter of concern for every bank as current market itself is suffering from diminishing business.

The size of our economy being comparatively small, the elasticity of the economy cannot go beyond certain level. That's why the given resources need to be utilized to the fullest. The principle of survival of the fittest seem to apply in Nepal,i.e one standing at last wins the battle, in other words one which is able to use its competitive

advantage over another eliminating the competitor services in the market. The competitor among the banks has gone to the utmost level due to which the bank is operating at lesser profit margin.

## 1.2 Interest rate structure in Nepal

Before studying the relationship of interest rate and other factors it is better to know average structure of interest rate prevailed in the country for past three years. Though the detail analysis is done in chapter four, table no 1.1 tries to give glance of the lending rate and deposit rate of different financial institutions.

**Table 1.1**

**Structure of interest Rates (Percentage per Annum)**

**Deposits Rates of Commercial Banks**

| Years | 2007 | 2008 | 2009 |
|---|---|---|---|
| Saving Deposits | 2-5 | 2-6 | 2-6.5 |
| Time Deposits | | | |
| 1 Months | 1.75-3.5 | 1.75-3.75 | 1.75-5 |

| | | | |
|---|---|---|---|
| 3 Months | 1.5-4 | 1.5-4.5 | 1.5-6 |
| 6 Months | 1.5-4.5 | 2-5 | 2.5-7 |
| 1 Years | 2.5-4.5 | 3.25-6 | 3-8 |
| 2 Years and above | 2.5-5.5 | 3.25-5.5 | 3-8.75 |

**Lending Rates of Commercial Banks**

| Years | 2007 | 2008 | 2009 |
|---|---|---|---|
| Industry | 8-13.5 | 8-13.5 | 8-13.5 |
| Deprived Sector | 4-11 | 4.5-11 | 6-12 |
| Export Credits | 7-11.5 | 7-12 | 8-12.5 |
| Commercial loans | 8-14 | 8-14 | 8-14 |
| Overdraft | 6-14.5 | 6.5-13.5 | 6.5-14.5 |

Table 1.1 present the overall interest rate structure of commercial bank in deposit and lending rate. Most of the commercial bank classified their deposit into two section- saving deposit and Time

Deposit and offer different interest rate on them. Talking about saving deposit, the interest rate ranges from 2 % to 5 % in the year 2007 but this range increase to 2 % to 6.5% in the year 2009. Interest rate on time deposit shows it raise upto 8.25 % in year 2009 compared to year 2008.

For lending there is increase and decrease in some rates. Industry lending rates, deprived sector rate and overdrafts shows a decrease of 1% in minimum rate in year 2008 from 2009. Likewise there is no change in commercial loan in all three year period.

## 1.3 Background of the study

Capital in a free economy is allocated through the price system. The interest rate is the price paid to borrow capital. Weston and Brigham have added risk and inflation as fundamental factor to determine interest rate. The study undertaken is deeply concentrated on impact of interest rate on deposit mobilization, lending and profitability of bank. Interest rate is one of the important tools for shaping economy. Its plays the dominant role in borrowing and lending. Interest rate is set by the interaction of supply and demand.

Interest rate at times is referred as financial oil of the economy. Predicting the interest rate is however impossible, nevertheless identifying the driving forces behind the interest rate will help to create an image of the future plans.

For financial institution interest rate to be paid is a major expense and often it's an indicator for the general economic situation and expectation. Likewise for consumers, the interest rate influences the burden of mortgage.

The collection of deposit and its mobilization are dependent to each other, i.e. if there is no collection of deposit there is no mobilization and vice versa. The collection of deposit and its mobilization get along with each other under the favorable condition of the interest rate. Interest rate is the main factor in fund activities of commercial banks. Interest rate affects the collection of deposit, mobilization of saving and profit position of the company.

The size of Nepal's economy being comparatively small, the elasticity of the economy cannot go beyond certain level that's why the given resources need to be utilized to the fullest. The principle of survival of the fittest seems to apply in Nepal, i.e. the one, which is able to use

its competitive advantage over another, survives in the market. There is huge competition among the banks as the result banks are operating at lesser profit margin. The competition has decreased the level of interest on lending to the lowest point, which obviously has decreased the interest spread by increasing deposit interest.

The scope of interest rate policy is broad as its definition. Many genuine research works have been done and many important theories are formed and applied in the economic world. However, Nepal is yet to achieve a bit of what other foreign students and scholars have achieved.

Banks are major part of the economy as their policies and movement are always under financial scrutiny. Old banks have obvious advantages over new banks in terms of operational cost and expertise gained through past experience. However, new banks have advantages provided by the updated technology and software which is going 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. The stiff competition among banks has benefited all the people relating financial

sector in terms of higher dependable interest on deposit, easy availability of modified lower rated loans and advantages and wider range of products to accommodate all needy people.

Any genuine study in this area can solve problems, set definite directions therefore there has always been encouragement to bring about new ideas and information. This study undertaken is deeply concentrated on impact of interest rate on deposit mobilization, lending and profitability of the bank therefore it will be helpful to all directly or indirectly related to economic fields. The study will be well known for information; ideas brought forward, suggestion and conclusion drawn to respective                                                                                 problems.

## 1.4. Interest Rate

A rate which is charged or paid for the use of money. 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.

Interest, payment made for the use of another person's money in economics, it is regarded more specifically as a payment made for

capital. Economists also consider interest as the reward for thrift that is payment offered to people to encourage them to save and to make their savings available to others.

Interest rate is one of the most important tools for shaping economy. It plays the dominant role in borrowing and lending. Basically, interest rate is defined as-price a borrower must pay to secure scarce loan able funds from lender for an agreed upon period. It is the price of credit. But unlike other prices in the economy, the rate of interest is really a ratio or two quantities: the money cost of borrowing divided by the amount of money actually borrowed. Usually expressed on an annual percentage basis. The cost of borrowing, measured in rupee per year per rupee borrowed, is the interest rate. When we examine how money affects economic activity, we will focus on the interest rate, which is often called "The price of money." Interest is the rent paid for the use of money. In other words, people must pay for opportunity to borrow money. Financial institutions, as financial intermediaries, collect money from savers in the form of deposit and provide that for business sector in the form of loan. These institutions pay the interest to the depositors for the money borrowed from them and charge interest from the borrower for money lend to them. As any price is determine,theoretically,by the interplay of demand and supply in a market economy, the price is determine,theoretically,by the

interplay of demand and supply in a market economy, the price of money-the interest rate plays a vital role in the allocation of resources and in the decision making of consumers and business. For example, an increase in the interest rate provides additional incentives to individual and other to postpone current consumption (save) and thereby free resources for investment. Interest rate sends price signals to borrowers, lenders, and savers. Higher interest rate brings forward greater volume of savings and stimulates the lending of fund. While lower rate of interest reduce the volume of borrowing and capital investment, and lower rates stimulate borrowing and investment spending.

Investment is the function of interest rate. The quality and flow investment determines the income in the economy. Therefore, the impact of interest rate is on both the saving and investment in the economy. The borrowing and saving are always influenced by the interest rate. The cost of production which depends upon the production function, is influenced by the interest rate, since the credit is also one of the components of the production process. The saving and investment in the economy, which are influenced by the interest rate are the real economic variables. The incomes and expenditure of the variable sector of the economy result in excess saving or excess investment in each of the sector.

## 1.5. Determinants of Interest rate

Interest rate is the cost of price of the credit. The cost to the borrower is called required return. Required return reflects the level of expected return. Different type of assets have different rate of interest for its use.However, interest rate changes together according to time.

In general quote interest on debt security K is composed of real risk free rate of interest plus several premiums reflects inflation, the riskiness of the security and the liquidity of security. This relationship can be expressed as follows.

Quote interest rate (K) = k∗+IP-DRP-LP-MRP

Where

K= The quoted or nominal rate of interest on a given security.

K∗= The real risk free rate of interest.

IP=Inflation premium

DRP= Default risk premium

LP=Liquidity or marketability of premiums

MRP= Maturity risk premium

## 1.6. Interest Rates and its Revision

Former governors of NRB remark these things about interest rate changes.

i)  High and positive rate of interest is necessary to attract the resources from the public in terms of raising prices.

ii) Interest rate should change from time to time in accordance with the condition of demand and supply of capital.

iii)Cheap interest rate doesn't benefit proper section of the society for whom it is intended.

iv) Interest rate should not be fixed at unrealistic  level as its principle function is to guide investment opportunities, which are needed in the economy.

## 1.7. Interest Rate Strategies of Commercial Bank

Nepal is economically backward country in the world having weak economy and financial dualism with weak and underdeveloped money and capital market. In addition to that Nepal's poor economy is fuelled by lack of adequate sensitivity of business sector about the monetary changes, domination of government in the financial field and heterogeneous interest rates. Banking started very late in our country due to poor financial infrastructure.

Nepal Rastra Bank(NRB) took the initiative to establish financial institutions by providing financial facilities to promote banking and financial system. Gradually the number of financial institution grows increasing the banking operations and banking habits of the citizens.NRB adopted the monetary measures to control money supply according to the need of the economy. The monetary measures in the beginning or until mid 1980 were mainly direct and selective in the determination of the variable interest rate for deposits and loans.NRB played a pivotal role in administrating the interest rates of the commercial banks for many years."NRB took interest rate both as policy goal and policy instrument to achieve some macro economic goals." NRB's policy on interest rate was not transparent enough due to lack of sufficient data.NRB did not outlined clearly the procedures

used to design, administrative and evaluate the impacts of such frequent changes in interest rate structure of commercial banks and financial institutions on the  major macro variable of the national economy.

NRB used to control the interest rate structure however later 1984,it took liberal policy. When interest rate liberalization started in Nepal, the commercial banks and financial institutions were given freedom to fix their interest rate above 1.5% in saving and 1% above in fixed deposits than the prescribed rate of NRB. It was further amended in 1986 when banks and financial institutions showed positive result, then the rate of interest was completely liberalized to determine market forces in 1989.the purpose behind liberalization was to let the market forces to determine the interest rate structure based on demand and supply.


## 1.8. Autonomy to Commercial Banks to determine own Interest Rate

NRB on August 32 1989 granted complete autonomy to commercial banks and financial institutions in determining their own deposit and loan rates. NRD had given complete freedom to make rules and work procedure about the kinds of deposits, time period of deposits, repayment conditions, penal interest and interest capitalization of

overdue loans. However, they were made liable to notify the public as well as NRB about the changes made.

Nepal Rastra Bank, since then has not administrated and regulated the interest rate structure of the commercial banks and other financial institutions. Monetary management has been conducted through open market operations. However on August 22, 1992, Nepal Rastra Bank issued some directives to bank and financial institutions to clear spell out the interest on deposit of least one year. NRB also instructed the commercial banks and financial institutions to limit the spread of interest on deposit and credit at 6 % within mid December 1993.

The interest rate structure in the beginning was purely Central Bank's matter but, considering the need of the country NRB took a flexible approach in making some adjustment in interest rate by putting control on it. The impact of economic liberalization in developing countries due to financial globalization influences Nepal as well. This ultimately brought deregulation in interest rate by leaving the interest rate to be determined by the market force.

The sharp competition between the banks and financial institutions brought interest rate war to such extent that deregulation should follow

self regulation otherwise economic disturbances from rising interest rate is bound to have impact on financial Sectors.

## 1.9.Statement of problem

Recent cash crunch in the money market has caused enormous pressure on the bank and financial institutions to adjust the interest rate to a new high as there is no option left. Intense competition for business involving both the assets and liabilities, together with increased volatility in the domestic markets, has brought pressure on the  management of banks to rethink spread between profitability and long term viability.

The unscientific and ad-hoc pricing of lending in the context of intensifying competition and alternative avenues available for the borrowers results in inefficient deployment of resources. A thoughtful evaluation of customers and their price sensitive's can provide valuable insight                                into                                the                                crisis.

The deregulation of interest rate and the operational flexibility given to financial institution in pricing most of the assets and liabilities imply the need for the banking system to hedge the interest rate risk. Interest rate risk is a risk where changes in market interest rate will

adversely affect a bank financial condition. The immediate impact of changes in interest rates is on banks profit by changing its spread. Due to the stiff competition among the banks to increase the volume of deposit, loans and investment it has been working under very less interest spread which is hardly able to cover total cost. This has resulted because of expensive availability of financial institutions. Moreover frequent changes of interest rate within and outside the bank has changed the banking habit of individual depositors. There is a practice to transfer fund from less interest bearing bank to higher interest bearing, likewise banks with lower rated lending are seeing huge                                      loan                                      application.

The change in interest rate 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, lending, investment patterns and ultimately the profitability of the company. The main effort of this study will be to answer the following queries.

 i) Do the interest rate structure effects the investment of commercial banks?

 ii) Is the Interest rate main factor to attract customer to banks?

 iii) Is there any stability in deposit mobilization policy of the bank?

iv) What will be the impact of increasing and decreasing interest rate on deposit, loan, investment and profitability of the company?

v) Is there any regulation to fix the interest rate by Nepal Rastra Bank?

vi) How are the interest rate determine on the bank?

## 1.10. Objective of study

General purpose: The general purpose of this research is to study the impact of interest rate on bank performance.

Specific objectives: The specific objectives are

I) To study the impact of interest rate on deposit mobilization   -

II) To study the impact of interest rate of loan on credit extension by the commercial banks.

III)To study the impact of interest spread on the profitability of bank

IV)To test the relationship of interest rate, deposit mobilization and lending.

## 1.11. Limitations

i) The major part of data used in the research will be secondary therefore conclusion may reflect manipulations of the concerned institutions.

ii)Performance of commercial bank is affected by many factors however interest rate is considered in this study.

iii)Deposit, loan, investment and profit are year end figure where as interest earned; interest expenses are total figure that occurred through out the year. Any calculation related to this may show differences from the actual figure a year end figure are not same over the period.

iv)The data are used only of five years period i.e from 2005- 2009.

v)Questionnaire will be asked only to some selected person.

**1.12. Organization of study**

Introduction

It deals with the subject matter of the study.

Review of literature

It is a way to discover what other research in the area of our problem has uncovered. It content the discussion on the conceptual framework, review of books, previous research work, articles, publication.

Research methodology

It includes research method used to conduct sources of data, method of finding and analysis research on selected topic.

Presentation and analysis of data

It will help in bringing definite direction for drawing conclusion and recommendations.

Summary and conclusion

From data analysis the researcher concludes the performance of the relevant firms for superior performance.

## 1.13. Introduction of sample organization under study

**Nabil Bank**

Nabil bank limited the first foreign joint venture bank of Nepal started operation in July 1984.Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objectives Nabil provides a full range of commercial bank securities through its 40 points of representative across the kingdom and over 170 reputed correspondent banks across the globe. Nabil as a pioneer in introducing many innovative products and marketing concept in the domestic banking

sector represents a milestone in the banking history of Nepal as its standard an era of modern banking with customer satisfaction measured as a focal objective while doing business.

**Himalayan Bank**

Himalayan bank was established in 1993 in joint venture with Habib bank limited of Pakistan. Despite the cut throat competition in the Nepalese Banking Sector Himalayan bank has been able to maintain a lead in the primary banking activities loans and deposit. Himalayan bank hold a vision to become a leading bank of the country by providing premium products and services to the customers thus ensuring attractive and substantial returns to the stakeholders of the bank. Bank objective is to become the bank of first choice. Bank mission consists of two components that is the bank preferred provider and quality financial services.

**Nepal Industrial and Commercial Bank**

Nepal Industrial & Commercial Bank Limited (NIC Bank) commenced its operation on 21 July 1998 from Biratnagar. The Bank was promoted by some of the prominent business houses of the country. The current shareholding pattern of the Bank constitutes of promoters holding 51% of the shares while 49% is held by the general public.

NIC Bank has over 34,000 shareholders. The shares of the Bank are actively traded in Nepal Stock Exchange with current market capitalization of about NPR 10,493 million.

The Bank has grown rapidly with 28 branches throughout the country while several branches are planned to be opened this year. All branches are inter-connected through optical fiber as well as V-Sat and are capable of providing real time on-line transactions.

NIC Bank was the first commercial bank in Nepal to have received ISO 9001:2000 certification for its Quality Management System standard in the year 2006. The Bank has recently been certified under the upgraded ISO 9001:2008 standards for the Bank's Quality System on Commercial Banking Activities for the first time in Nepal. Furthermore, NIC Bank became the 1st Bank in Nepal to be provided a line of credit by International Finance Corporation (IFC), an arm of World Bank Group under its Global Trade Finance Program, enabling the Bank's Letter of Credit and Guarantee to be accepted/ confirmed by more than 200 banks worldwide. To add to these achievements, the Bank has also been awarded the "Bank of the Year 2007-Nepal" by the world-renowned financial publication of The Financial Times, U.K.-The Banker.

# CHAPTER-II

# REVIEW OF LITERATURE

## 2.1 The conceptual Framework

Attractive interest rate is always welcomed by every sector. Everyone takes the benefit of banking facilities if there is higher interest on deposit and lower interest rate on credit. Banks have the objective to cash positive impact of its interest rate on good relationship with its customer so as to grow together. Impact of interest rate always comes under scrutiny whenever the performance of bank is measured in terms of its effect on collection of deposit, mobilization of deposit and profitability of the bank as a whole. This chapter lays the foundation of research work. It discuss briefly about the theoretical concept of interest rate and its relation with the performance of the bank.

### 2.1.1 Interest rates and investment patterns

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

### 2.1.2 Interest Rate and Deposit Mobilization

Interest is the price for the acceptance of deposits and remuneration received for allowing other to use unutilized deposit for their benefit.

Or, interest is the price on pays for utilizing certain amount of money for specific time period. It is rent for using money by the lender, or interest is the price paid to borrowed capital. High interest rate diverts the resources from unproductive tangible assets into financial claims. Interest rate acts as a mark clearing device in respect of Nepalese imperfect market. According to Dr.R.D.pant change in interest rate in deposits is changing the saving habits of the Nepalese.

Deposit arises from saving. An individual's income equals consumption plus saving. Individual deposits the saved part of income in the bank and gets interest from it. Banks in turn lend this money and earn profit by charging high interest rates. And the borrowers from banks, invests this fund in productive sectors yielding more return than the borrowed interest. This investment leads to create new employment opportunity in the economy. Ultimately due to new employment the purchasing power of the economy increases and finally GDP and growth of the country occurs. It means that the deposit has very important role in the economy. There is a direct relationship between deposits of bank and the investment in the economy. If the volume of deposit is low, the investment in the economy also lags behind due to lack of resources. The deposit of banks is the accumulated capital, which can directly be invested. There is a great need of the public,

bank being the intermediate to accept this sort of money and help to canalize this in productive sector. So the important of banks and financial intermediaries is larger in present context.

### 2.1.3 Interest Rate and Monetary Policy

There is profound relationship between interest rate and monetary policy. Monetary policy works by controlling the cost and availability of credit. Increase in money stock can lower the interest rates and vise-versa.so, during inflation central bank raise the cost of borrowing and reduce the credit creating capacity of the commercial banks, which ultimately increase the interest rate of the bank.

### 2.1.4 Interest Rate and Profitability

Schulz explains, "An important aspect of interest policy is the setting of an appropriate margin between 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 the margin is too low, it will discourage intermediation and devitalize financial institution. "the profit of commercial banks, as an according identity is equal to the interest form earning assets less the interest cost on deposit.So,the change in interest rate structure has positive impact on profit position.

## 2.1.5 Interest Rate and Price level Changes

A study depicted that the change in the interest rate and price level move together as they are interlinked with each other. Their relation is explained below:

i) High interest rate accompany high price, and low interest rate accompany low price.

ii) Interest rate and weighted average of past price level change are co-related with each other.

iii) Interest rate tends to be high when price is rising and vice-versa.

iv) Interest rate movement lags behind price level change.

According to Weston and Brigham, price level trend affect interest rate in two important ways. The nominal interest rates the contract or stated interest rate reflects expectation about future price level behavior. If price are rising and expected rate of inflation is added to the interest rate that would have prevailed in the absence of inflation

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to adjust for the decline in purchasing power represented by price

increase.

## 2.1.6 Function of Interest rate in the economy

The interest rate has opposite relation with the value of financial assets. It means that if the interest rate increases, the value of assets decreases and vice versa. This concept is very useful for the valuation of the invest able securities. Beside this there are some important functions that interest plays in the economy.

i) It helps guarantee that current savings will flow into investment to promote economic growth.

ii) It rations the available supply of credit, generally providing loan able funds to those investment projects with the highest expected returns.

iii) It brings into balance the supply of money with the public's demand for money.

iv) It is also important tool of government policy it stimulate or discourage saving and investment through its influence on the volume of saving and investment. If the economy is growing too slowly and

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unemployment is rising, the government can use its policy tools to lower interest rates in order to stimulate borrowing and investment. On the other hand, an economy experiencing rapid inflation has traditionally called for a government policy of higher interest rates to slow both borrowing and spending.

**Change in interest and its effect upon value of an asset**

The price of the security and its yield (rate of interest) has inverse relationship. It means that a rise in yield implies a decline in price; conversely, a fall in yield is associated with a rise in the security's price.

The investing funds in financing assets can be viewed from two different perspectives, the borrowing and lending of money or the buying and selling of securities. Similarly the equilibrium rate of interest from the lending of funds can be determined by the interaction of the supply of loan able funds and the demand for loan able funds. Demanders of loan able funds (borrowers) supply securities to the financial marketplace and suppliers of loan able funds (lenders) demand securities as an investment.Therefore, the equilibrium rate of return or yield on a security and the equilibrium price of that security are determined at one and the same instant and are simply different aspects of the same phenomenon, the borrowing and lending of loan

able                                                                              funds.

This can be cleared with the help of figure. The fig 2.1 and 2.2 show the demand and supply  curves for both the rate of interest and the price of securities. The supply of loan able funds curve (representing lending0 in the interest rate diagram 2.1 is analogous to the demand for securities curve (also representing lending0 in the price of securities diagram 2.2 similarly the demand for loan able funds curve (representing borrowing) in the interest diagram is analogous to the supply of securities curve (also representing borrowing) in the price of securities diagram.

**Figure 2.1**

**Interest Rate Determination**

Demand for fund (borrowing)
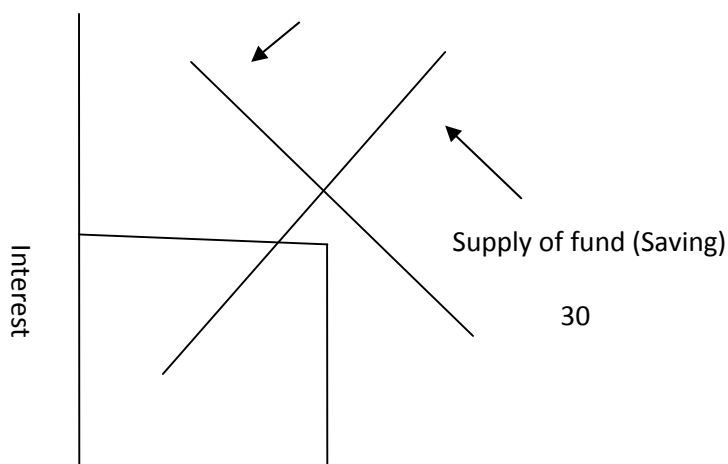
**Figure 2.2**

**Security Price Determination**

Demand for fund (Lending)

Interest

Supply of fund (Saving)

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L $_F$

$S_E$

Volume of loanable fund
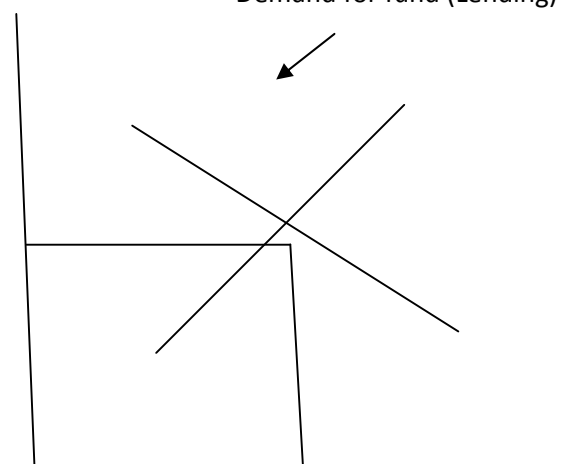
Volume of securities
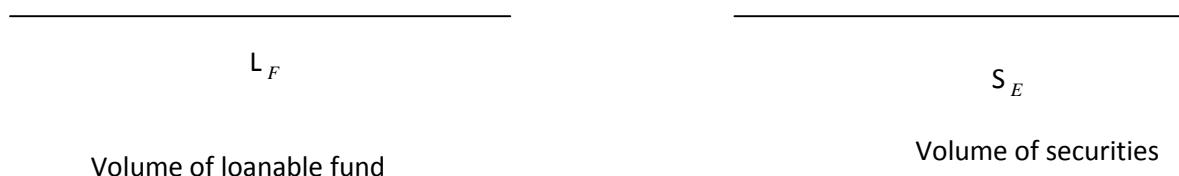
We note in figure 2.2 the borrowers are assumed to issue a larger volume of securities at a higher price and that lenders will demand more securities at a lower price. In figure 2.1, on the other hand, borrowers demand a smaller quantity of loan able funds at a higher interest rate, while the lenders supply fewer loanable funds at a lower interest rate. The equilibrium price for securities lies at point i$_e$ where the demand for and supply of securities are equal. Only at the equilibrium interest rate and equilibrium security price will both borrowers and lenders be content with the volume of lending and borrowing taking place in the financial system.

The inverse relationship between interest rates and security prices can be quite clearly when we allow the supply and demand curves of figure 2.1 and 2.2 to change. for example, suppose that in the face of

continuing inflation, consumers and business firms accelerate their borrowings, increasing the demand for loanable funds. The demand for loanable curve slides upward and to the right with the supply of loanable funds unchanged. This increasing demand for loanable funds also means that the supply of securities must expand by a shift in the supply curve. Both a new loanable equilibrium price for securities and a higher equilibrium interest rate for loanable funds result. Conversely, suppose that consumers decide to save more, expanding the supply of loanable funds, then the supply of loanable funds curve slide downward. But with more savings, the demand for securities curve must ride, sliding upward as those added savings are invested in securities. The result is a rise in the equilibrium price of securities and a decline in the equilibrium interest rate.

**Factors influencing the difference in interest rates**

It is assumed deposit increases as interest increases but interest rate is affected by numerous factors. In real world, different financial institution quotes different interest rate. It means that the same types of instrument carried different interest rate so there is presence of interest spread. For this difference there are numbers of factors influencing the difference in interest rates (thygerson, 1993:38).

## 1. Credit of Default Risk

Credit of default risk involves the potential that a saver will receive less principal and interest on the financial claim that the contract specifies. Default risk is related to the probability that some or all of the initial investment will not be returned. The degree of default risk is closely related to the financial condition of the company. Credit risk requires making estimates of the potential for loss. Thus probability is then converted into an interest rate premium, the credit or default risk premium and added to the saver's required nominal yield. Typically, the securities issued by the government, (esp. treasury Bills) are considered to be credit risk free.

## 2. Marketability Risk

Marketability is the capacity of being sold quickly at low transaction cost (kohn, 1999:174). Marketability risk deals with the degree of difficulty in being able to convert a financial claim into cash at its most recent transaction price or very close to it. Savers who purchase investments with poor marketability expect to be compensated for the lack of marketability. This represents an additional interest spread and is referred to as the marketability or liquidity risk premium.

## 3. 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 provision are referred to as call provision. On financial claims such as home mortgage and installment auto loans, they are called pre-payment provisions. These provisions are options. The borrower has the option to call or prepay the debt. The investor in the financial claim that is callable or subject to repayment accepts risk. The risk is that if interest rates fall, the borrower will call the bond or prepay the mortgage. The investor receiving the cash funds that he or she cannot reinvest it at an interest rate as high as the rate on the previous investment. This risk is called a call or prepayment risk.

## 4. Servicing Cost

Some financial claims are difficult to service. This means that the process of collecting interest and principal payments providing accurate record or monitoring the ongoing credit position of the borrowing

involves considerable operating costs. Lenders must be compensated for the servicing costs. This cost is included in the interest rate charged and is referred to as the servicing cost (Thygerson, 1995:40)

## 5. Exchange Rate Risk

As our financial markets have become global, there has been a significant growth in the borrowing and investing in foreign denominated financial claims. A Nepalese company establishing a manufacturing facility in Belgium might be inclined to issue bonds denominated in Belgium francs rather than Nepali Rupees. Investors also have available to them many investments that are denominated in foreign currencies. This transaction involves exchange rate risk. This risk relates to the potential that the rate of exchange between the domestic currency and foreign denominated currency will change as a result of any number of factors. The primary risk for the borrower is that the value of the domestic currency. This results in an unexpected cost on the international loan. 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.

## 6. Taxability

The final factor influencing the change in interest rate is taxability. Financial claim income is typically subject to taxation. Since the value of a financial claim is based on its anticipated cash flow, taxation acts to reduce those cash flows. Not all incomes are taxable equally.

## 2.2 Review of Literature

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

a) Review of relevant books

b) Review of research papers and articles

c) Review of thesis

## 2.2.1 Review of Relevant Books

The Economics glossary defines interest rates as:

The interest rate is the yearly price charged by a lender to borrower in order to obtain a loan for the borrower. This is

expressed as a percentage of the total amount of loan.

A more thorough definition of an interest rate can be found in The Economists Dictionary of Economics. In part they define 'rate of interest' as:

The proportion of a sum of money that is paid over a specific period of time in payment for its loan. It is the price a borrower has 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.

J.M Keynes in his book The General theory of Employment, interest and Money brought forward his view about the rate of interest. Community's liquidity preferences and quantity of money determines the level of rate of interest. These three things liquidity preferences, quantity of money and rate of interest are negatively correlated. At low rate of interest the liquidity preferences of community is high and it is low at high rate of interest.

According to the modern view interest rate determination depends upon 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 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 preferences and the rate of investment and interest there on.

The interest entry by Paul Heyne at The Library of Economics 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 the 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 the present command of resources is something that people want. Therefore, those who get it are willing to pay for it, and those who give it up insist being compensated for doing so.

When people discuss interest rates, they're generally talking about nominal interest rates. A nominal variable, such as nominal interest rate, is one where the effects of inflation have not been accounted for. Changes in the nominal interest often move with changes in the inflation rate, as lenders not only have to be compensated for delaying their consumption, they also must compensated the fact that a dollar will not buy as much a year from now as it does today. Real interest rates are interest rate where inflation has been accounted                                                                                      for.


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

## Interest Rate Theories

There are several theories on interest rate that are propounded by different scholars.R.D pant documented following theories about interest rate in his book.

## The Traditional Approach

This approach believes, the change in demand for supply of money cannot affect interest rate expect for transitional states in which the system moves from one long run equilibrium position to another. Keynes relegated the quantity of money primarily to the job of determining the level of the interest rate. by the liquidity preferences and the quantity of money needed to keep the interest rate at low level, to hold the interest payments in the government budget, to increase investment and to stimulate aggregate demand to increase both real income and employment.

## The Modern Approach

In modern view, the natural rate hypothesis and the theory of rational expectation of economic theory trace out many facts like monetary changes are the dominant cause of changes in nominal

interest rate. Any predictable change in money stock will produce hundred percent changes in nominal interest rate. Even in a short span of time, monetary authorities can make temporary change in interest rate, changes of growth of money in an unpredictable way. Continued growth of money supply, however will not lower interest rate if the initial position is full employment. The excess supply of money will increase expenditure partially because of effects of low real interest rate on investment and due partly to an increase in other spending, since for an individual nothing has occurred to make the cash holding more attractive. If the public expect the rise, the price borrower will be willing to pay higher interest and lenders will be willing to pay more to compensate for rising prices.

The monetary effect on interest rate can be separated into three effects which are as follows:

 i)   Liquidity Effects

  ii)  Income Effect

  iii) Expectation Effect

The nominal demand for money at time t is assumed to be as follows:

$Y_t , I_t )p$

$$M^d{}_t = F(_t$$

Where,

t= time

$Y_t$ =Real Income

$I_t$ = nominal Interest rate

$P_t$ =price level

$M_t$ =Money

Money supply is assumed to be exogenously determined as mst=wst. The nominal interest rate is equal to the real rate of interest plus the expected rate of inflation.

The basic form is as under:

$$I = r + (\frac{I}{P} + \frac{Dp}{Dt})^e$$

Where,

I= Nominal interest rate

R= Real Interest rate

$(\frac{I}{P} + \frac{Dp}{Dt})^e$ = Expected rate of inflation

The real investment is negatively related to the real interest rate, and saving function is positively related with real interest rate.

So, the equilibrium form of investment and savings is $\dfrac{I}{p} = \dfrac{s}{p}$

Increase in growth rate of money supply creates excess supply of money. The nominal and real interest rate declines to clear excess supply in the money market if there is no change in income or price. It is due to liquidity effect that nominal and real interest rate decreases from equilibrium level if there is unexpected change is money growth rate. The decrease in real interest rate stimulates expenditure due to partly effect of lower interest rate on investment and an increase in consumers spending due to excess supply of money. The increase in rate of inflation reduces the demand for cash balance and the public may hold more capital good at the expenses of real balance. Due to this there is an increase in capital labor ratio and make the real interest rate permanently lower than it would otherwise be. The real interest rate return to the original stage and the increase in money supplies raises the price level and nominal interest rate in proportion to the rise in money supply with no change in real interest rate.

The change in real and nominal interest rate is based on the following expectation:

 a) An increase in rate of growth of money supply initially decreases the nominal and real interest rate.

 b) In the equilibrium, stage inflation rises to a new level equal to the change in the rate of growth of money supply.

 c) The nominal interest rate rise in population to the rise in inflation when the position is in equilibrium. There is no change in the real interest rate.

K.K Dewett and J.D. Varma have written how interest rate is determined in their book "Economic Theory'. They have shown how interest rate varies in the same money market. The rate of gross interest differs due to the differences in degree of risk involved and inconveniences suffered by the lender. The rate of pure interest may differ in different market due to differences in distance between the investors and the investment market, difference in time i.e. long term vs. short term loans, difference in the amount of money advanced. The interest rate charged on individual business is usually determined in personal negotiation between bank and borrower. It reflect such attitude as the borrower's size and general credit standing, his access to alternative credit sources, the size and maturity of loan, the character of borrower's business, value to

the bank of his deposit account and other business relationship and

the nature of the security if any, to be pledged.

Generally speaking, long -term loan yield a higher rate of interest than short - term loans, as the risk involved in a long term loan is much greater. It is however possible for long rates to be lower than short- term rate in some case. If the investors (public) have a higher degree of confidence in the stability of future conditions, they may be willing to lend at lower rates for longer periods. The bonds (long term securities) carry lower rates than for instance, what is charged for overdraft (short term loan). The bonds have ready reliability, whereas the short-term loans are generally renewed. Short-term rates fluctuate more violently than the long-term rates. The reason behind it is changes in rates usually occurs fist in the short - term rates and long-term rates tend to move in sympathy with the short term rates.                                              .

## 2.2.2 Review of Research papers and Articles

The three basic functions which interest rates can perform are:

i) Interest rate can mobilize saving. It is the price for saving used by savers to equate marginal rates of substitutions between present and future consumption. Under Nepal's imperfect market condition,

it has a strong effect on the choice of assets in which saving are embodied. A rise in the interest rate produces substitution from unproductive tangible assets held as inflation hedge into financial claims. This substitution, as well as increase in the saving rate frees resources for productive investment.

ii) The interest rate is an efficient rationing device for allocation of scarce resources between alternative investments. It is almost invariably superior in this respect to rationing on the basis of the decision of a bureaucrat in a planning agency, the quantity of the collateral offered, the political influence of the borrower, "name" or the performance of corrupt loan officers.

iii) Interest rate can provide a social discount rate for decisions to save and invest. In this role it equates plans to save and invest. Here it acts as a market clearing devices, influencing in an optimal manner the choices of what to produce and how to produce it. Interest rate can discourage highly capital intensive techniques of production in countries where capital is scarce, instead encouraging greater use of labor. Where labor is ample and capital scarce, the interest rate directs entrepreneurial activities into simple things with simple technologies, but with high return to capital.

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Raghab D. Panta in his article "Capital Flight and Interest Rate" showed interest rate could determine people's wish to deposit where he gets higher return. In his word, the interest rate structure recently followed by the banking system of Nepal and India shows clear divergences. In particular, the interest rate offered by the commercial bank of Nepal has shown a declining trend so much that the real interest rate that is nominal interest rate provided by the banks adjusted for inflation, is negative. This means, in fact the publics are losing money by investing in fixed and saving deposit of the commercial banks. The interest rate in India is relatively high so, it is more profitable for the Nepali labor to invest in India than in Nepal. Thus it is not surprising that the remittances from India are declining while those from other countries are following the past trends."

Devial K.C. in his write-up "Interest rate policies" wrote, "Interest rate is one of the main weapons of monetary policy." He mentioned following facts about interest rate:

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

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

iii) 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.

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

### 2.2.3 Review of unpublished Thesis

Prior to this study, there are few thesis and research papers submitted to libraries of Tribhuvan University and its wing college on the same topics. Besides this, there are some other theses, which are related to this study to some extents. The review and the extra from them are presented in this section.

Deepak Raj Bhandari (1998) through his MBA thesis entitled "The Impact of Interest Rate Structure on Investment Portfolio of Commercial Banks of Nepal" has concluded the followings:

 i) Rate of commercial banks has been fluctuating. Deposits and lending rates were increased immediately after liberalization of the interest rate on August 31, 1989 but however started to decline, which have helped in increasing the credit flow.

 ii) Interest rate structure has direct influence on profitability of commercial banks. Decrease in lending rate helps to increase the profitability through increasing the credit.

iii) Deposits are more interest rate conscious and positively co-related.

iv) Loans and advances of commercial banks are found to be continuously increasing with the decline in interest rate.

v) Effective interest rate structure helps in proper utilization of resources as measured by loan to deposit ratio.

vi) Most of the banks are having similar interest rate structure, which lessens the importance of liberization of interest rate.

Neeta Dangol (2003) an MBS student conducted research on the "Impact of Interest Rate on Financial Performance of Commercial Banks" concludes:

i) Most of the commercial banks contradict the general financial theories.

ii) The relation between amount of deposit and interest rate on deposit, in general concept must be positive. But deposits are increasing despite the decrease in the general level of interest. The result of such phenomenon is that there are fewer investment opportunities for the banking sectors as well as

general                                                              investors.

iii) The relation between total amount of loan and the lending rate is negative and significant. However, the change in the total amount of loan flow is not proportionate with the change in the lending rate.

iv) Correlated between interest rate and inflation is not significant.

v) Not only interest rate is responsible to shape the profitability of banks but also the operating efficiency also has major influences on it.

Another unpublished MBS thesis was prepared by Sashi Bhatta (2004) in the topic "Interest rate and its effect on deposit and lending". In this study, the disseminator tries to portrait the relation of interest rate with deposit and lending amount. The conclusion        drawn        by        Ms.        Bhatta        is:

i) Deposit rates of all sample banks under study are in decreasing trend; meanings that every year deposit rates of sample banks under study have decreased.

ii) Lending rates of all sample banks under study are also in decreasing trend; means that every year lending rates of sample banks under study have decreased.

iii) Analysis shows that interest rates on lending are far higher than deposit rates of sample banks. The correlation coefficient between these two variable,(deposit rate and lending rate) of sample banks comes highly positive.

iv) 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 conclude that the result appears in that study was different than the theory.

v) 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 that says with the increase in lending rate, lending amount decreases and vice-versa. So she 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.

Finally her conclusion about her study, in her own word is:

"There is significant relationship between deposit amount and lending rate and lending amount of almost all commercial banks except one. Test of significance for correlation coefficient between inflation rate and deposit and lending rate shows that these variables are correlated."

Kishor Kumar Khatri (2003) has his own view to share in "Impact of Interest Rates on Deposit Mobilization of Commercial Banks of Nepal" an unpublished MBS Thesis in 2003. According to him the overall performance of commercial banks is satisfactory and Nepal Rastra Bank has to play more active role to enhance the operation. He concludes:

i) The liquidity position of commercial bank is satisfactory.

ii) The coefficient of correlation of deposit, lending and investment of commercial banks has better position.

iii) The coefficient of interest rates and deposits of commercial banks donot have better position.

iv) The trend of deposit, loan and advances and investment of commercial bank is in good position. However, the ratio of loan and advances and investment to deposits is in decreasing trend.

He concludes his thesis with, 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.

## 2.3 Research
## Gap

Although some previous MBS student has conducted in the related same topic the present research has selected there is fundamental differences between those and this present one. The previous research focused only the impact of interest rate on deposit mobilization of selected commercial bank. But this thesis tries to explain the impact of interest on overall performance. This research has been carried our to see the entire variable that determine interest rate. They may be inflation

premium, default risk premium, maturity risk premium, marketability of premium. This research has further try to identify the correlation among deposit, lending, interest spread and profitability.

This research has been conducted with reference to three sample firms which give the clear vision on the given topic however; almost effort has been put upon to save it from allegation of being copy of previous research works done in the same topic.

# CHAPTER - III

# RESEARCH METHODOLOGY

## 3.1. Introduction

The first chapters laid the foundation for the introduction of impact of interest rate on performance of commercial bank. Likewise review of literature nourished our knowledge about the past research, which is really supportive for any apprentice in this field. The next primary step is to set research methodology.

Research is a systematic and organized effort to investigate specific problem that needs a solution(Sekaran,1992).The process of investigation involves series of well thought out activities of gathering,recording,analyzing and interpreting the data with the purpose of finding answers to the problem. The entire process involved solving

a problem or search the answer to a question is research.

Research is undertaken not only to solve existing problem in the work, but it do contribute to the general body of knowledge in a particular area of interest to the researcher. Research is thus a knowledge building process. It generate new knowledge, which can be used for different proposes. It is used a build a theory, develop policies, support decision-making and solve problems.

Research methodology is the process of arriving at the solution of the problem through planned and systematic dealing with the collection, analysis and interpretation of facts and figures.

The basic objective of the study "Impact of interest rate on performance of the commercial Bank" is to find how interest rate is playing an important role in the performance of the banks. It is basically about pros and cons of the bank, find the competitive edge that are based on interest earnings and interest expenses in the present and also visualize the figure prospects. Several processes, methodologies and tools are followed to bring through result and ideas in the progressive form in this study.

## 3.2 Research Design

To achieve the objective of this study analytical and descriptive design will be used. Statistical and accounting tools will also be applied to examine facts. Likewise descriptive techniques will be adopted to evaluate the impact of interest rate on the performance of the bank.

## 3.3 sources of Data

This study is based on both primary and secondary data.

Secondary data will be used to higher extent due to time constraints and other important in reachable factors.

Nepal Rastriya Bank, Nabil Bank Limited. Nepal Industrial and Commercial Bank Limited, Himalayan Bank Limited bulletin will be used as a secondary source.

All the secondary data are compiled, processed and tabulated in time series. Formal and informal talks to the concern member of the department of the bank will be used to obtain additional information on the related problem.

Likewise, data and information are collected from the periodicals, economic journal, magazines and other published and unpublished reports. Documents from various sources will also be used.

## 3.4. Population and Sample

There are 26 commercial banks whose stocks are traded actively in stock market of Nepal. The impact of interest on the performance of three banks will be studied, as it is impossible to study all the data related with all commercial banks of Nepal. The population and the sample chosen there of the banks are as follows:

**Population**

Nepal Bank Limited.

 Rastriya Banijya Bank Limited

Agriculture Development Bank Ltd.

Bank of Asia Ltd

Bank of Kathmandu

Citizen Bank International Ltd

Development credit Bank Ltd

Everest Bank Ltd

Global Bank Ltd

Himalayan Bank Ltd

Kumari Bank Ltd

KIST Bank Ltd

Laxmi Bank Ltd

Lumbini Bank Ltd

Machachapuchhre Bank Ltd

Nabil Bank Ltd

Nepal Bangladesh Bank Ltd

Nepal Investment Bank Ltd

Nepal Industrial and Commercial Bank Ltd

NMB Bank Ltd

Nepal Credit and Commerce Bank Ltd

Prime Commercial Bank Ltd

 Nepal SBI Bank Ltd

Siddhartha Bank Ltd

Standard Chartered Bank Ltd

Sunrise Bank Ltd

**Sample**

Nabil Bank Ltd

Nepal Industrial and commercial bank Ltd

Himalayan Bank Ltd

## 3.5. Method of Analysis

To achieve the objectives of the study various financial statistical and accounting tools will be used. Analysis of the data will be done according to the pattern of the available data; collected data 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 individual is able to understand as per their need.

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

 a) Financial Tools

 b) Statistical Tools

Simple growth pattern and highly sophisticated tool like ratio analysis will be used under financial tools.

Graphs, Karl Pearson's co-efficient of correlation and least square method will be used in statistical tools. Here corresponding hypothesis will be drawn.

 **a) Financial Tools**

The following ratios will be used to evaluate the performance of the banks.

 i) Loan and Advances to Total deposit Ratio

 ii) Total Investment to Total Deposit Ratio

 iii) Return on Total Deposit ratio

 iv) Interest Earned to Total Assets Ratio

 v) Net Interest Margin

 vi) Analysis of Net Interest Income

 vii) Analysis of effective Interest Rate

viii) Analysis of effective Interest cost Rate

ix) Rate of Return on Capital

x) Analysis of Interest rate Spread

xi) Risk ratio

xii) Growth ratio

xiii) Analysis of Market Interest Rate

xiv) Comparative Interest rates of Commercial Banks

xv) Deposit Mix

xvi) Deposit Ratio

**b) Statistical Tools**

**Coefficient of correlation Analysis (r)**

Correlation is used to describe the degree to which one variable is linearly related to another. Coefficient of correlation measures the degree of relationship between two set of figure. Karl Pearson's method will be applied among various methods in the study. The result of coefficient of correlation always lies between +1 and -1.

When,

r= +1 there is perfect relationship between two variables

r= -1 there is inverse relationship between two variables.

r=0 there is no relationship between two variables.

Formulae:

$$\frac{\sum xy}{\sqrt{\left(\sum x^2 y^2\right)}}$$

Correlation will help to determine the following variables:

 i) Coefficient of correlation between Average deposit interest rate and deposit.

 ii) Coefficient of correlation between Average lending interest rate and total credit.

 iii) Coefficient of correlation between total deposit and total credit.

 iv) Coefficient of correlation between interest spread and net profit.

**t-Statistics**

To test the validity of our assumption t-test is used (as sample size is less than 30). T- Test is applied if the sample size is small. The't' value is calculated first and compared with the table of't' at a certain level of significance. If value of't' exceed the table value (say 0.05) we infer the difference is significant at 5% level. But if't' is less than the table value the difference is not treated as significant.

The list of following null hypothesis will be examined to draw the conclusion:

 i) Deposit Interest rate does not play a significant role in deposit collection.

ii) Lending Interest rate does not play a significant role in loan disbursement.

**Interest rate Spread**

Interest rate spread is the difference in interest rate between lending and deposit rate. Interest rate spread will be calculated using the following formulae:

Interest rate spread=

| Rupees of interest earned | _ | Rupees of interest paid dividend |
|---|---|---|
| Rupees amount of interest earning assets | | Rupees amount of interest costing liabilities |

Interest rate spread will be calculated using weighted interest rate spread between lending rate and deposit rate of the commercial banks.

WALR= Weighted Average Lending Rate

WADR= Weighted Average Deposit Rate

# CHAPTER-IV

# DATA PRESENTATION AND ANALYSIS

## Introduction

In this section, all the collected data are presented in the filtered form and are analyzed thoroughly. This chapter focuses on the data relating to interest rate's impact on the performance of the company. This is one of the major chapters of the study as it includes detail analysis and interpretation of data from which concrete result for the study are presented and analyzed keeping the objectives set in mind. To make our study effective, precise, and easily understandable the chapter is categorized in three parts; data presentation, analysis and findings. The analysis is fully based on secondary data available.

In presentation section data are presented in terms of table, graph, chart of figures, according to need. The presented data are then analyzed using different statistical tools mentioned in chapter three. At last the result of analysis is interpreted. For our simplicity,

presentation, analysis and findings of data are made according to the nature. In other words at first relationship between deposit and interest rate of all sample banks are analyzed. The relationship between interest rate and credit (lending) amount is made, lastly the relationship between interest rate and performance of the commercial bank is presented. While analyzing different statistical tools like correlation coefficient, coefficient of determination, t-statistics for significance are employed.

The most important way to show the true position and performance of any organization is analysis of its past data; this chapter focuses on the data relating to interest rate impact on the performance of the selected banks. The figure presented in tabular and graphical manner in the report are simple in understanding and is able to furnish many unsolved questions that are due till date.

## 4.1 Ratio Analysis

The relationship between two accounting figures expressed mathematically is known as financial ratio. "Ratio Analysis is used to compare a firm's financial performance and status of firm or to itself over time". From the help of ratio analysis the qualitative judgment can be done regarding financial performance of a firm.

In this study following ratios are calculated and analyzed.

## 4.1.1 Loan and Advances to total deposit ratio

The ratio can be calculated by dividing loan and advances by total deposits. The ratio can be stated as

$$\frac{\text{Loan and Advances}}{\text{Total Deposits}}$$

**Table 4.1**

**Loan and Advances to Total Deposits**

(Rs in Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 14586.60 | 19347.39 | 23342.28 | 31915.04 | 37348.25 |
| Loan and advances | 10946.73 | 13278.78 | 15903 | 21759.46 | 27999 |
| Loan and Advances/Deposits | 75.04% | 68.63% | 68.12% | 68.17% | 74.96% |
| Growth rate | - | -8.54% | -0.74% | 0.073% | 9.9% |

**Nepal Industrial and Commerce Bank**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 6241.378 | 8765 | 10068.23 | 13084.68 | 15579.93 |
| Loan and Advances | 4909.35 | 6902 | 9128.649 | 11465.33 | 13915.85 |
| Loan and Advances/Deposits | 78.65% | 78.73% | 90.66% | 87.62% | 89.31% |
| Growth rate | - | 0.08% | 15.12% | -3.33% | 1.92% |

**Himalayan Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 24814.01 | 26490.85 | 30048.41 | 31842.78 | 34681.34 |
| Loan and Advances | 13451.16 | 15761.97 | 17793.72 | 20179.61 | 25519.51 |
| Loan and Advances/Deposits | 54.20% | 59.49% | 59.22% | 63.37% | 73.58% |
| Growth rate | - | 9.76% | -0.45% | 7% | 16.11% |

Source: Annual Report of Nabil,NIC and HBL

Table 4.1 shows the loan to total deposit ratio of Nabil, NIC, HBL Bank in 5 different years. For this study 2005 is taken as initial year and 2009 as final year. The ratio of NIC Banks shows they have invested comparatively high portion of their deposit funds into lending in 2007. Nabil have invest more in year 2005. The ratio of HBL shows it has invested comparatively lower portion of its deposit funds

into          lending          than          NIC          and          Nabil.

**Figure 4.1**

**Loan and Advances to Total Deposits.**
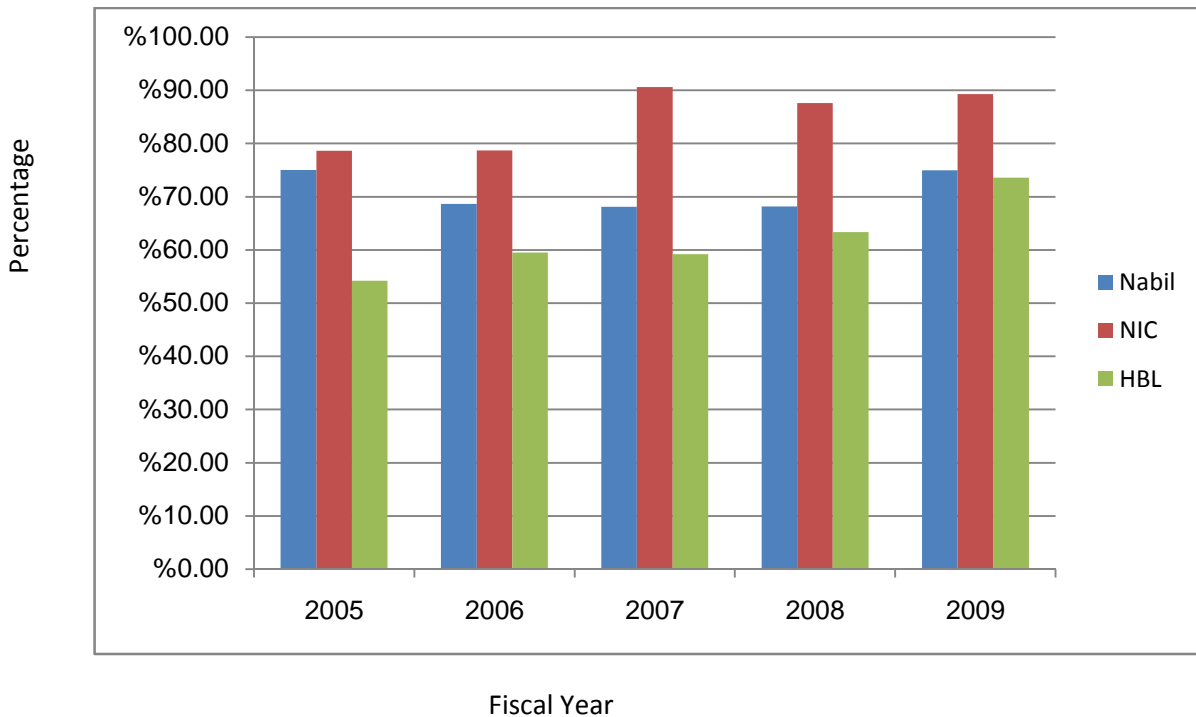


Figure 4.1 shows that old and established bank is very much conservative in lending their deposit as they stick below 75% mark. New banks have lower deposit, aggressive lending policy above 75% and as high as 90% the succeeding years.

### 4.1.2 Total Investment to Total Deposit Ratio

This ratio can be calculated by dividing total investment by total deposit. It can be stated as:

$$\frac{\text{Total Investment}}{\text{Total Deposits}}$$

**Table 4.2**

**Investment to Total deposits**

(Rs. In Million)

**Nabil bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 14586.60 | 19347.39 | 23342.28 | 31915.04 | 37348.25 |
| Investments | 4275.52 | 6178.53 | 8945.31 | 9939.77 | 10826.37 |
| Investments/Deposits | 29.31% | 31.93% | 38.32% | 31.14% | 28.98% |
| Growth Rate | - | 8.93% | 20% | -18.73% | -6.93% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 6241.378 | 8765.950 | 10068.23 | 13084.68 | 15579.93 |
| Investments | 1572.90 | 2479.91 | 1599.48 | 2311.46 | 3026.02 |
| Investments/Deposits | 25.20% | 28.29% | 15.88% | 17.66% | 19.42% |
| Growth Rate | - | 12.26% | -43.86% | 11.20% | 9.9% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|

| Deposits | 24814.01 | 26490.85 | 30048.41 | 31842.78 | 34681.34 |
|---|---|---|---|---|---|
| Investments | 11692.34 | 10889.03 | 11822.98 | 13340.17 | 8710.69 |
| Investments/Deposits | 47.11% | 41.10% | 39.34% | 41.89% | 25.11% |
| Growth Rate | - | -12.75% | -4.28% | 6.48% | -40.05% |

Source: Annual Report of Nabil , NIC and HBL

Table 4.2 shows Investment to total deposit ratio of Nabil, NIC and HBL Bank in 5 different years. NIC and Nabil lag behind HBL in investment. HBL invest around 47.11% at the most in the year 2005. Whereas Nabil and NIC shows fluctuating investment pattern. Investment of Nabil increases from 31.93% to 38.32% in 2007, and decrease to 31.14% to 28.98% in 2009. NIC invest almost 28.29% in 2006 which decreases to 19.42 % in 2009.



Fiscal Year
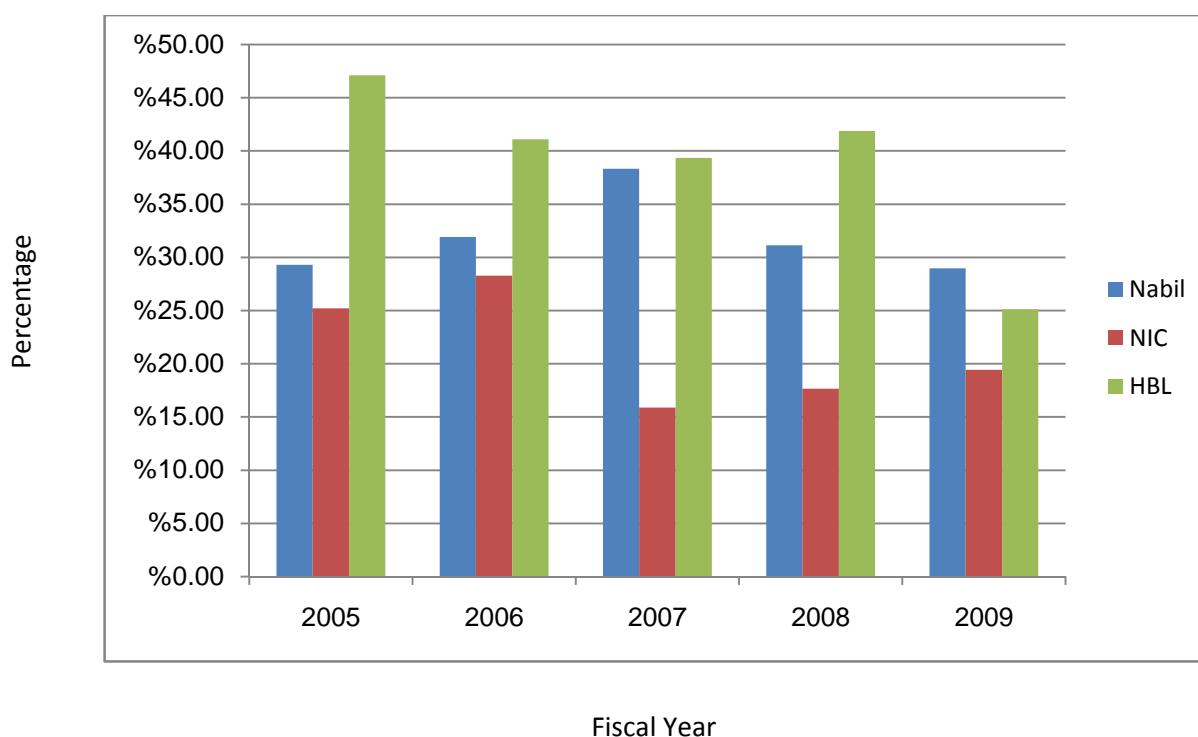
**Figure 4.2**

**Investment to Total Deposits**

Figure 4.2 shows bigger banks don't depend on lending of its deposit; they foresee the future prospects in investments and take risk to uncertain venture that is why they invest as high as 40% in investment. However bank with small deposit prefer lower investment and lent large amount of deposit as loans and advances.

## 4.1.3. Return on Total Deposit Ratio

This ratio measures the degree of NPAT earned by using total deposits. In other words, it revel the relationship between NPAT and total deposits with an explanation of the ability of management in efficient utilization of deposits. This ratio is a mirror of bank's 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 computed by using following formula:

Return to Total deposit ratio=NPAT

Total deposits

Here, NPAT denotes net profit after tax whereas a total deposit denotes all types of deposits shown in the balance sheet.

**Table 4.3**

# Return on Total Deposit

(Rs. In Million)

## Nabil Bank Limited

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 14586.60 | 19347.39 | 23342.28 | 31915.04 | 37348.25 |
| Net profit after tax (NPAT) | 520.11 | 635.26 | 673.95 | 746.46 | 1031.05 |
| NPAT/Deposits | 3.56% | 3.28% | 2.88% | 2.33% | 2.76% |
| Growth Rate | - | -7.86% | -12.19% | -19.09% | 18.45% |

## NIC Bank Limited

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 6241.378 | 8765.950 | 10068.23 | 13084.68 | 15579.93 |
| Net profit after tax (NPAT) | 113.75 | 96.58 | 158.47 | 243.05 | 317.43 |
| NPAT/Deposits | 1.82% | 1.10% | 1.57% | 1.85% | 2.03% |
| Growth Rate | - | -39.56% | 42.47% | 17.83% | 9.72% |

## HBL

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 24814.01 | 26490.85 | 30048.41 | 31842.78 | 34681.34 |
| Net profit after tax (NPAT) | 457.45 | 398.27 | 491.82 | 635.86 | 752.83 |
| NPAT/Deposits | 1.84% | 1.16% | 1.63% | 1.99% | 2.17% |
| Growth Rate | - | - | 40.51% | 22.08% | 9.04% |

| | | 20.08% | | | |
| --- | --- | --- | --- | --- | --- |

Source: Annual Report of Nabil,NICand HBL

The table 4.3 shows the return on total deposit of Nabil, NIC and HBL Bank. The ratio of Nabil bank shows return on total deposits in decreasing trend where as the ratio of NIC and HBL was in decreasing trend from 2005 to 2007 but from 2008 -2009 it is in increasing                                                                                point.
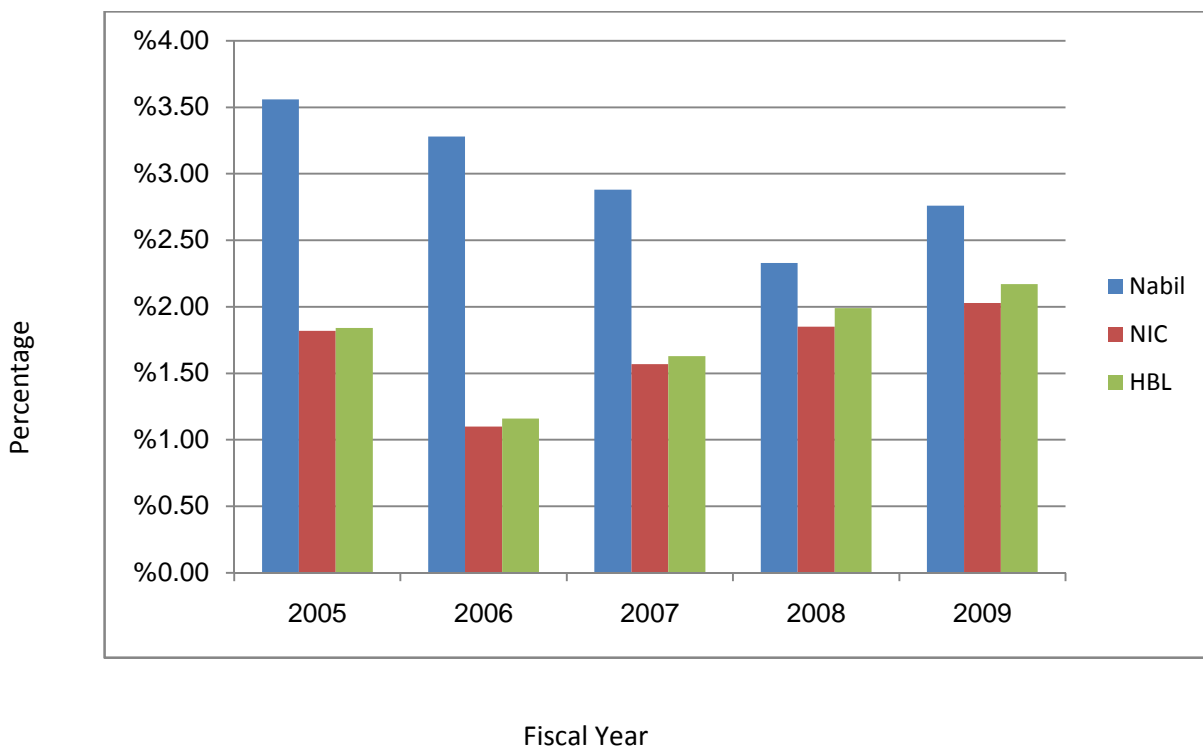


**Figure 4.3**

**Return on Total deposit**

Figure 4.3 shows Nabil mobilized its deposit more effectively than NIC and HBL. The ratio of Nabil lies above 2.33% while the ratio of NIC and              HBL              lies              below              2.17%.

## 4.1.4. Interest Earned to Total Assets Ratio

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

This ratio is calculated as:

$$\text{Interest Earned to Total Assets ratio} = \frac{\text{Interest Earned}}{\text{Total Assets}}$$

Where,

Interest earned represents the total interest earned in income statement of the bank.

**Table 4.4**

**Interest earned to Total Asset**

(Rs. In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest earned | 1068.74 | 1309.99 | 1587.75 | 1978.69 | 2798.48 |

| Total assets | 17064.08 | 22329.97 | 27253.39 | 37132.75 | 43867.39 |
|---|---|---|---|---|---|
| Interest earned/Total Assets | 6.26% | 5.86% | 5.82% | 5.32% | 6.37% |
| Growth rate | - | -6.38% | -6.82% | -8.59% | 19.73% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest earned | 457.60 | 579.97 | 725.81 | 931.40 | 1283.50 |
| Total assets | 7510.39 | 10383.60 | 11678.83 | 15238.73 | 18750.63 |
| Interest earned/Total Assets | 6.09% | 5.58% | 6.21% | 6.11% | 6.84% |
| Growth rate | - | -8.37% | 11.29% | -1.61% | 11.94% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest earned | 1446.46 | 1626.47 | 1775.58 | 1963.64 | 2342.19 |
| Total assets | 27418.15 | 29460.38 | 33519.14 | 36175.53% | 39320.32 |
| Interest earned/Total Assets | 5.27% | 5.52% | 5.29% | 5.42% | 5.95% |
| Growth rate | - | 4.74% | -4.16% | 2.45% | 9.77% |

Source: Annual Report of Nabil,NIC and HBL

Table 4.4 shows the ratio of interest earned to total Assets of Nabil, NIC and HBL Bank. The data shows Nabil has earned as high as 6.37% of total assets in 2009 but showed before 2009 it was in decreasing trend from 2005 to 2008. Both NIC and HBL has maintained ratio above 5%.NIC has impressive figure compared to the

growth ratio of HBL. NIC has maintained the highest ratio of 6.84% in
2009.

**Figure 4.4**

**Interest Earned to Total Assets**
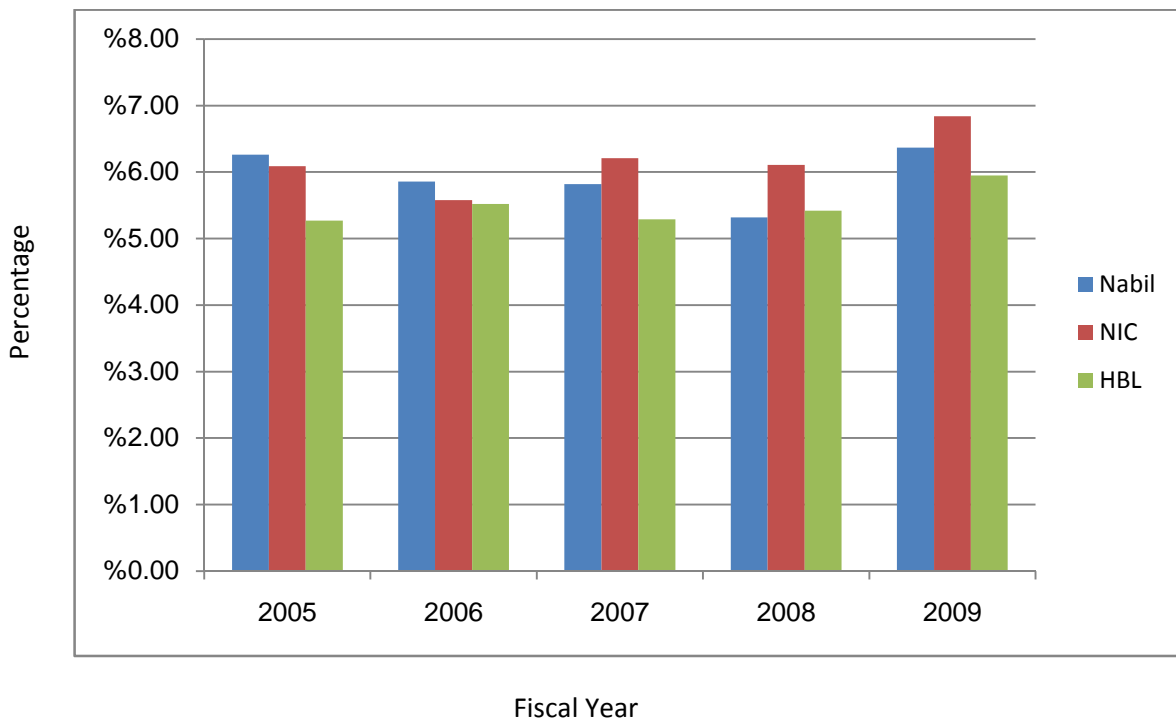


Figure 4.4 shows interest earned to total asset ratio of Nabil, NIC and
HBl bank. Over the year the ratio of NIC and HBL are increasing. The
ratio     of     bank     lies     between     5.29%     and     6.84%.

## 4.1.5 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. It shows the profit earning potential of the bank. This ratio is derived by employing the following formula:

$$NIM = \frac{\text{Interest Income - Interest Expense}}{\text{Loan and Advances + Investment on securities}}$$

**Table 4.5**

**Net Interest Margin**

(Rs. In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| Interest Income | 1068.74 | 1309.99 | 1587.75 | 1978.69 | 27984.48 |
| Interest | 243.54 | 357.16 | 555.71 | 758.43 | 1153.28 |

| | | | | | |
|---|---|---|---|---|---|
| Expenses | | | | | |
| Loan and Advances | 10946.73 | 13278.78 | 15903.02 | 21759.46 | 27999.01 |
| Investment | 4275.52 | 6178.53 | 8945.31 | 9939.77 | 10826.37 |
| Net Interest Margin | 5.42% | 4.89% | 4.15% | 3.84% | 4.23% |
| Growth Rate | - | -9.77% | -15.13% | -7.46% | 10.15% |

## NIC Bank Limited

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Income | 457.60 | 579.97 | 725.81 | 931.40 | 1283.50 |
| Interest Expenses | 225.99 | 340.22 | 421.37 | 505.99 | 767.19 |
| Loan and Advances | 4909.355 | 6902.123 | 9128.649 | 11465.33 | 13915.85 |
| Investment | 1572.90 | 2479.91 | 1599.48 | 2311.46 | 3026.02 |
| Net Interest Margin | 3.57% | 2.55% | 2.83% | 3.08% | 3.04% |
| Growth Rate | - | -28.57% | 10.98% | 8.83% | -1.29% |

## HBL

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Income | 1446.46 | 1626.47 | 1775.58 | 1963.64 | 2342.19 |
| Interest Expenses | 648.84 | 561.96 | 766.41 | 823.74 | 934.77 |
| Loan and Advances | 13451.16 | 15761.97 | 17793.72 | 20179.61 | 25519.51 |
| Investment | 11692.34 | 10889.03 | 11822.98 | 13340.17 | 8710.69 |

| | | | | | |
|---|---|---|---|---|---|
| Net Interest Margin | 3.17% | 3.99% | 3.40% | 3.40% | 4.11% |
| Growth Rate | - | 25.86% | -14.78% | - | 20.88% |

Source: Annual Report of Nabil, NIC and HBL

Table 4.5 shows the net interest margin of Nabil NIC and HBL Bank. Nabil bank has higher interest and net interest margin than NIC and HBL. The ratio is at decreasing trend for Nabil bank but has maintained lowest rate of 3.84% in 2008. Here the ratio of HBL is just above 3% over the five year of the study. While NIC shoed fluctuation trend of margin as it decreases from 3.57 to 2.55 in 2006 and increasing from 2.83 to 3.08 in 2008 and again decreases from 2008 to 2009 to 3.04%.

**Figure 4.5**

**Net Interest Margin**



Fiscal Year
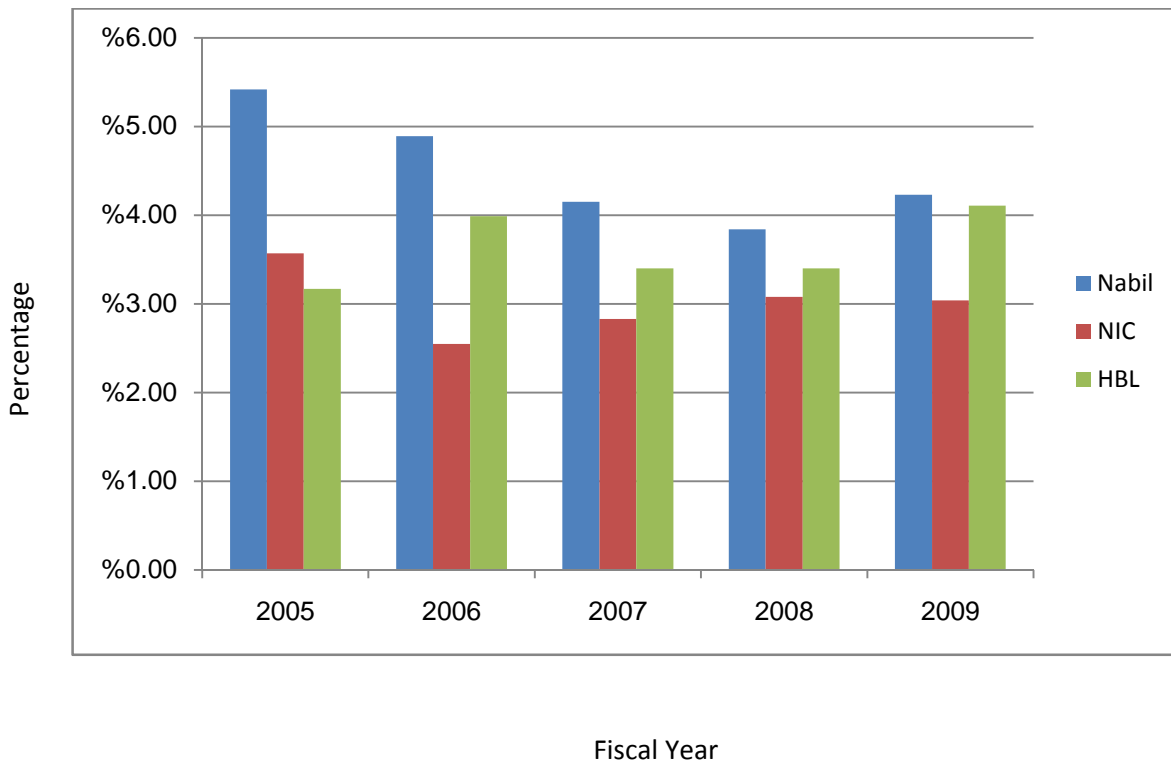
Figure 4.5 shows Net interest Margin of Nabil, NIC and HBL bank over 5-year period. Nabil bank leads all other sample banks in net interest margin. It has maintained margin about 3.84% over five years margin for the bank stayed between 2.55% to 4.11%.

## 4.1.6 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 the deposits.

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

Net Interest Income= Interest from Assets-Interest paid to Liabilities

**Table 4.6**

**Net Interest Income**

(RS. In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Income | 1068.74 | 1309.99 | 1587.75 | 1978.69 | 2798.48 |
| Interest expenses | 243.54 | 357.16 | 555.71 | 758.43 | 1153.28 |
| Net Interest Income(RS) | 825.2 | 952.83 | 1032.04 | 1220.26 | 1645.2 |
| Growth Rate | - | 15.46% | 8.33% | 18.23% | 34.82% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Income | 457.60 | 579.97 | 725.81 | 931.40 | 1283.52 |
| Interest expenses | 225.99 | 340.22 | 421.37 | 505.99 | 767.19 |
| Net Interest Income(RS) | 231.61 | 239.75 | 304.44 | 425.41 | 516.31 |
| Growth Rate | - | 3.51% | 26.98% | 39.73% | 21.36% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Income | 1446.46 | 1626.47 | 1775.58 | 1963.64 | 2342.19 |
| Interest expenses | 648.84 | 561.96 | 767.41 | 823.72 | 934.77 |
| Net Interest Income(RS) | 797.62 | 1064.51 | 1008.17 | 1139.9 | 1407.42 |
| Growth Rate | | 33.46% | -5.29% | 13.06% | 23.46% |

Source: Annual report of Nabil,NIC and HBL

Table 4.6 shows the net interest margin of Nabil, NIC and HBL Bank. Nabil edge out NIC and HBL, as it has been able to maintain figures above 825 million from 2005 to 1645 million in 2009. The net interest margin for both banks is in increasing trend.intially in 2005 net interest income for NIC was below 230 million but later it increased to 425.41 million and 516.31 million in 2008 and 2009 respectively. Likewise HBL has impressive net interest income, increasing from 797.62 million in 2005 to 1064.51 million in 2006, 1008.17 million in 2007 to 1139.9 million in 2008 and 1407.42 million in 2009.

**Figure 4.6**

**Net Interest Margin**



Fiscal Year
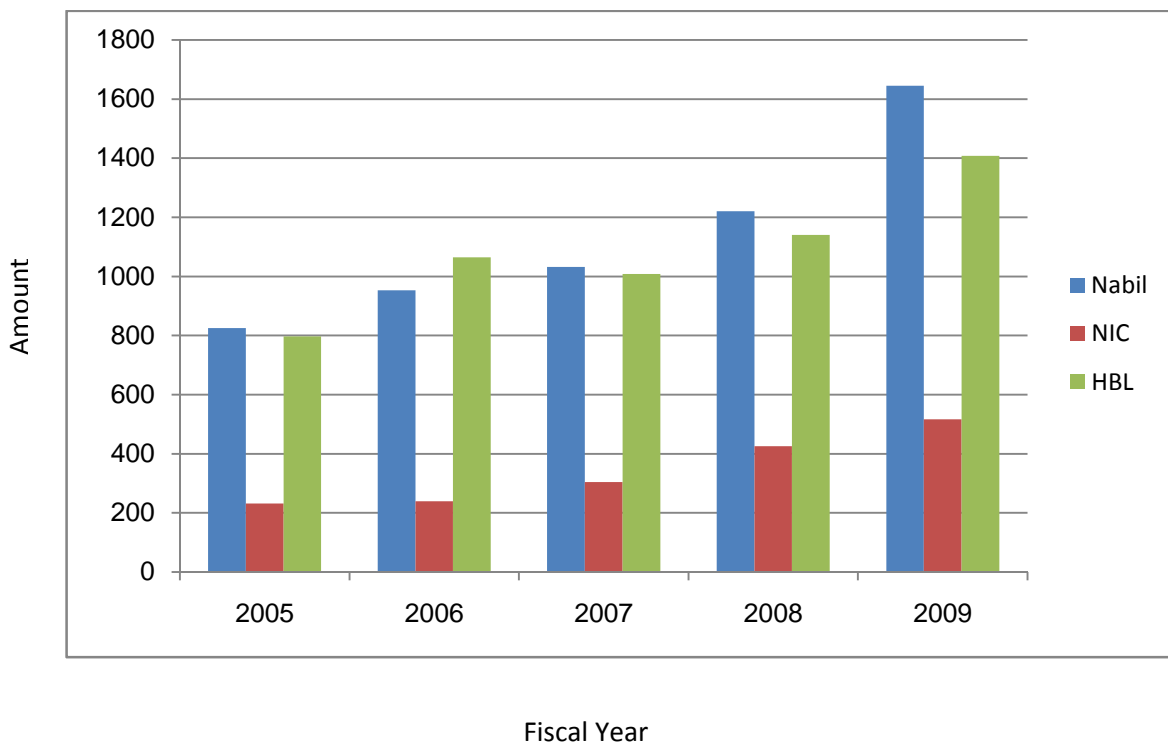
Figure 4.6 shows Net Interest Income of Nabil, NIC and HBL Bank over 5-year period. Nabil i.e. older bank (i.e. in term of establishment) has obviously higher deposit base and loan disbursement, which has been main source in building higher profit margin. While the bank NIC have comparatively lower interest income and expenses. However all the sample banks are showing growth in net interest income, which is

a    positive,    sign    to    cover    more    area    of    market.

## 4.1.7 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 banks is taken as loans and advance and investment in shares and debentures. Effective interest rate is calculated by using following formula:

Effective Interest rate ( □)=                    Interest earned

Interest earning assets ∗ 100

**Table 4.7**

**Effective Interest rate ( □)**

(Rs.In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| Interest earned | 1068.74 | 1309.99 | 1587.75 | 1978.69 | 2798.48 |
| Loan and Advances | 10946.73 | 13278.78 | 15903.02 | 21759.46 | 27999.01 |
| Investment | 4275.52 | 6178.53 | 8945.31 | 9939.77 | 10826.37 |
| Effective Interest Income Rate | 7.02% | 6.73% | 6.38% | 6.24% | 7.20% |
| Growth rate | - | -4.13% | -5.20% | -2.19% | 15.38% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|

| Interest earned | 457.60 | 579.97 | 725.81 | 931.40 | 1283.52 |
|---|---|---|---|---|---|
| Loan and Advances | 4909.355 | 6902.123 | 9128.649 | 11465.33 | 13915.85 |
| Investment | 1572.90 | 2479.91 | 1599.48 | 2311.46 | 3026.02 |
| Effective Interest Income Rate | 7.05% | 6.18% | 6.76% | 6.76% | 7.57% |
| Growth rate | - | -12.34% | 9.38% | - | 11.98% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest earned | 1446.46 | 1626.47 | 1775.58 | 1963.64 | 2342.19 |
| Loan and Advances | 13451.16 | 15761.97 | 17793.72 | 20179.61 | 25519.51 |
| Investment | 11692.34 | 10889.03 | 11822.98 | 13340.17 | 8710.69 |
| Effective Interest Income Rate | 5.75% | 6.10% | 5.99% | 5.85% | 6.84% |
| Growth rate | - | 6.08% | -1.80% | -2.33% | 16.92% |

Source: Annual Report of Nabil,NIC and HBL

Table 4.7 shows effective interest rate of Nabil, NIC and HBL Bank. Effective interest rates of all three banks are highly volatile. The ratios of Nabil decreased from 7.02% to 6.73% in 2006 and again decrease to 6.38% in 2007 from 6.73% in 2006 and again increased to 7.20% in 2009. NIC enjoy excessive decrease in the effective interest rate. Rate of NIC fall from 7.05% in 2005 to 6.18% in 2006 and end up to 6.76% in 2008. Rate for HBL continuously increase from 5.75% in 2005 to 6.10% in 2006 and decrease in 2007 and 2008 to 5.99% and 5.85% respectively and increase to 6.84% in 2009.

**Figure 4.7**

**Effective Interest Rate**
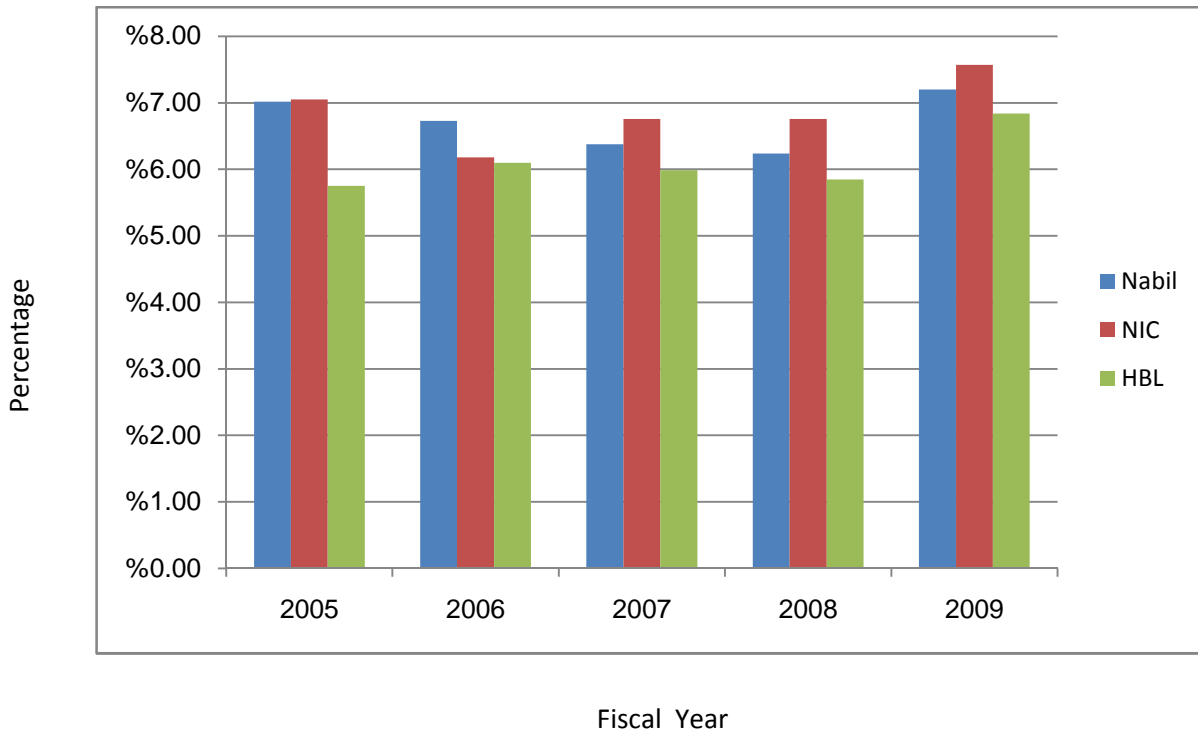


Figure 4.7 shows Effective Interest Rate ( □) of Nabil, NIC and HBL Bank. Effective interest income of all banks are decreasing. Earning capacity of the banks is declining due to the existence of huge competition. Still some banks are making recovery by few percentages.

**4.1.8 Analysis of Effective Interest Cost rate ( □)**

Effective interest cost rate gives the information about how costly are the interest earning assets. If the cost of acquiring fund for investment is high, it earns less income and ultimately decreases profit of the bank. Therefore, it is better to have lower interest cost rate. The numerator of the equation covers deposit liability and short-term loan. The effective Interest cost is calculated as:

Effective Interest Cost ( ☐)= $$\frac{\text{Interest cost}}{\text{Interest paying liabilities} * 100}$$

**Table 4.8**

**Effective interest Cost Rate( ☐)**

(Rs In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Expenses | 243.54 | 357.16 | 555.71 | 758.43 | 1153.28 |
| Deposits | 14586.60 | 19347.39 | 23342.28 | 31915.04 | 37348.25 |
| Short term Loan | 17.06 | 173.20 | 882.57 | 1360 | 1681 |
| Effective Interest Cost Rate | 1.66% | 1.82% | 2.29% | 2.27% | 2.95% |

| Growth rate | - | 9.63% | 25.82% | -8.73% | 29.95% |
|---|---|---|---|---|---|

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Expenses | 225.99 | 340.22 | 421.37 | 505.99 | 767.19 |
| Deposits | 6241.37 | 8765.95 | 10068.23 | 13084.68 | 15579.93 |
| Short term Loan | 450.37 | 457.70 | 352.12 | 335 | 660.40 |
| Effective Interest Cost Rate | 3.37% | 3.68% | 4.04% | 3.77% | 4.72% |
| Growth rate | - | 9.19% | 9.78% | -6.68% | 25.19% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Expenses | 648.84 | 561.96 | 767.41 | 823.74 | 934.77 |
| Deposits | 24814.01 | 26490.85 | 30048.41 | 31842.78 | 34681.34 |
| Short term Loan | 146.04 | 144.62 | 235.96 | 83.17 | 83.17 |
| Effective Interest Cost Rate | 2.59% | 2.10% | 2.53% | 2.58% | 2.68% |
| Growth rate | - | -18.91% | 20.47% | 1.97% | 3.87% |

Source: Annual report of Nabil, NIC and HBL

Table 4.8 shows the effective interest cost rate of Nabil, NIC and HBL Bank. Here Nabil banks have seen increasing trend of rates . Nabil has comparatively lower rates than NIC and HBL. The rates of Nabil lies in 1.5%-2.95%, while the rates of NIC and HBL lies in 2.10%-

4.72%. The increasing trend in the rate should stop at this point onward to enjoy safe feel. NIC and HBL are showing same trend i.e. increasing at increasing rate and decrease drastically. Both banks should decrease the interest rate at this point onward to enjoy safe feel.

**Figure 4.8**

**Effective Interest Cost Rate**



Fiscal Year
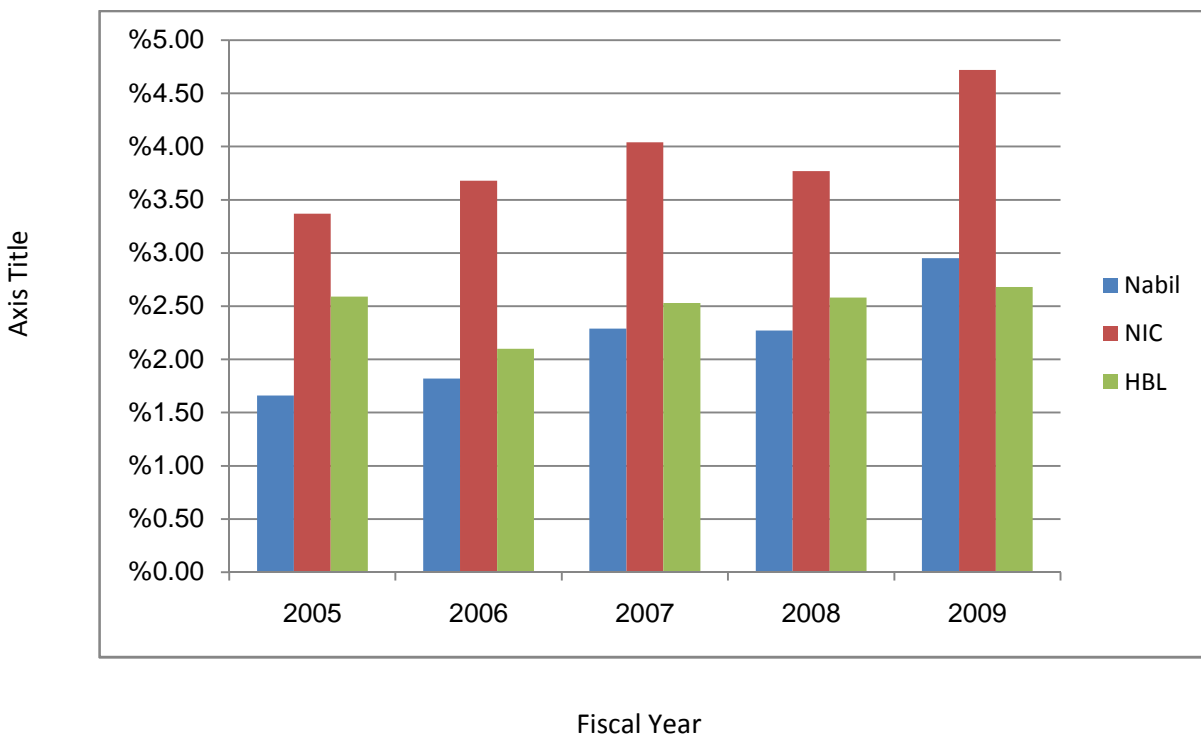
Figure 4.8 shows Effective Interest Cost rate of Nabil, NIC and HBL Bank over 5- Year period. The trend of decreasing the interest cost burden has hit all banks in the market. However the safer margin for banks is below 2 % but banks have above 3% and almost 4,75% which is obviously higher to stay in the market.

## 4.1.9 Rate of Return on Capital

In general, Return on capital (ROC)= Net Income after tax

Total Capital

$*100$

ROC shows how effectively capital is employed in the business. However, in this research the method of calculating return on capital is different, which is generally used by commercial banks. As the study area is limited to commercial banks, the method of calculating rate of return depends on the interest rate and interest cost because interest related transactions are the operational transaction for these institutions. This is because, net income is the difference between interest income and interest cost. For commercial banks ROC is difference between interest spread and portion of interest rate (effective) with difference between interest paying liabilities and interest earning assets divided by interest earning assets.

Return in capital, can be calculated as:

ROC= ꟷ- (ꟷ-ꟷ) × (Interest paying Liabilities-Interest Earning Assets)

Interest Earning assets

Where,

ꟷ= Effective Interest Cost rate

ꟷ = Effective Interest Rate

**Table 4.9**

# Rate of Return on Capital

(Rs.In Million)

## Nabil Bank Limited

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Effective Interest Income rate | 7.02% | 6.73% | 6.38% | 6.24% | 7.20% |
| Effective Interest Cost rate | 1.66% | 1.82% | 2.29% | 2.27% | 2.95% |
| Interest paying Liabilities | 14603.66 | 19520.59 | 24224.85 | 33275.04 | 39029.25 |
| Interest Earning Assets | 15222.25 | 19457.31 | 24848.33 | 31699.23 | 38825.38 |
| Return on capital (ROC) | 0.50% | 0.037% | -0.26% | 0.50% | 0.06% |

## NIC Bank Limited

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Effective Interest Income rate | 7.05% | 6.18% | 6.76% | 6.76% | 7.57% |
| Effective Interest Cost rate | 3.37% | 3.68% | 4.04% | 3.77% | 4.72% |
| Interest paying Liabilities | 6691.74 | 9223.65 | 10420.35 | 13419.68 | 16240.33 |
| Interest Earning Assets | 6482.25 | 9382 | 10728 | 13776.79 | 16941.87 |
| Return on capital (ROC) | 0.34% | -0.14% | -0.27% | -0.25% | -0.43% |

## HBL

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Effective Interest Income rate | 5.75% | 6.10% | 5.99% | 5.85% | 6.84% |
| Effective Interest Cost rate | 2.59% | 2.10% | 2.53% | 2.58% | 2.68% |

| Interest paying Liabilities | 24960 | 26634 | 30283 | 31925 | 34764 |
|---|---|---|---|---|---|
| Interest Earning Assets | 25143 | 26650 | 29615 | 33519 | 34229 |
| Return on capital (ROC) | -0.064% | -0.0060 | 0.21% | -0.43% | 0.17% |

Source: Annual report of Nabil,NIC and HBL

Table 4.9 shows the Return on Capital of Nabil,NIC and HBL bank. ROC for all banks shows steady decline over the period. Nabil shows increment of 0.50% in 2008 from -0.26% in 2007. NIC and HBL have ROC in decreasing stage.

**Figure 4.9**

**Rate of Return on Capital**



Fiscal year
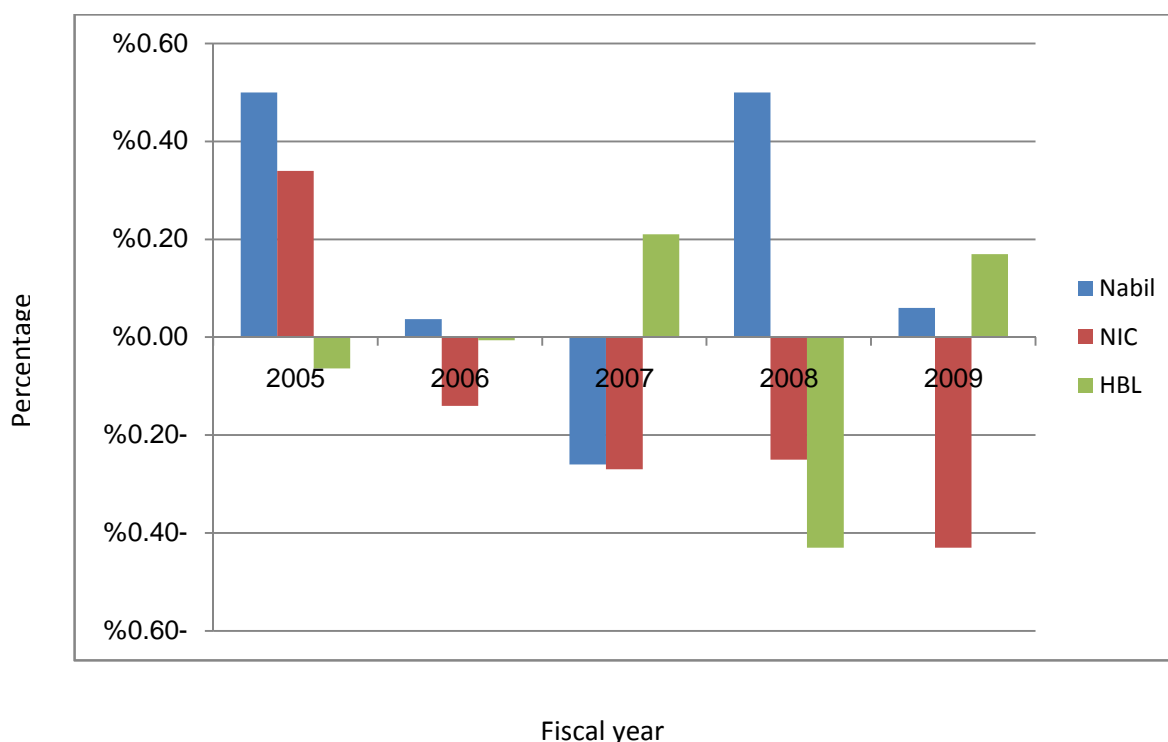
Figure 4.9 shows the rate of return on capital of Nabil, NIC and HBL over 5-Year period. All banks show a decline in the interest rate over the period. All the sample banks show a negative growth rate.

## 4.1.10 Analysis of Interest Rate Spread

Interest rate spread is difference in rate at which bank earn through investment and rate offered in attracting deposits and borrowings. In other word, rate of interest income on loan and investment minus rate of interest expenses on deposits and borrowings. Higher the spread in rate higher will be income of the bank.

**Table 4.10**

**Interest rate Spread of bank**

| Year | Nabil | NIC | HBL |
|---|---|---|---|
| 2005 | 3% | 3.75% | 4.25% |
| 2006 | 3% | 3.75% | 4.25% |
| 2007 | 3.5% | 3.75% | 5.75% |
| 2008 | 2% | 3.75% | 4% |
| 2009 | 1.5% | 2.65% | 4% |
| Average | 2.6% | 3.53% | 4.45% |

Table 4.10 shows the interest spread of Nabil,NIC and HBL Bank. HBL bank enjoy the highest interest spread among the sample banks.HBL maintain the spread above 4% over 5 year period and

even 5,75% in 2007. HBL bank has highest average interest spread of five year at 5.75%. NIC maintain interest spread above 3% on five year and Nabil maintain average interest spread of 2.6%.

**Figure 4.10**

**Interest                     Spread                    of                    Banks**



Fiscal Year
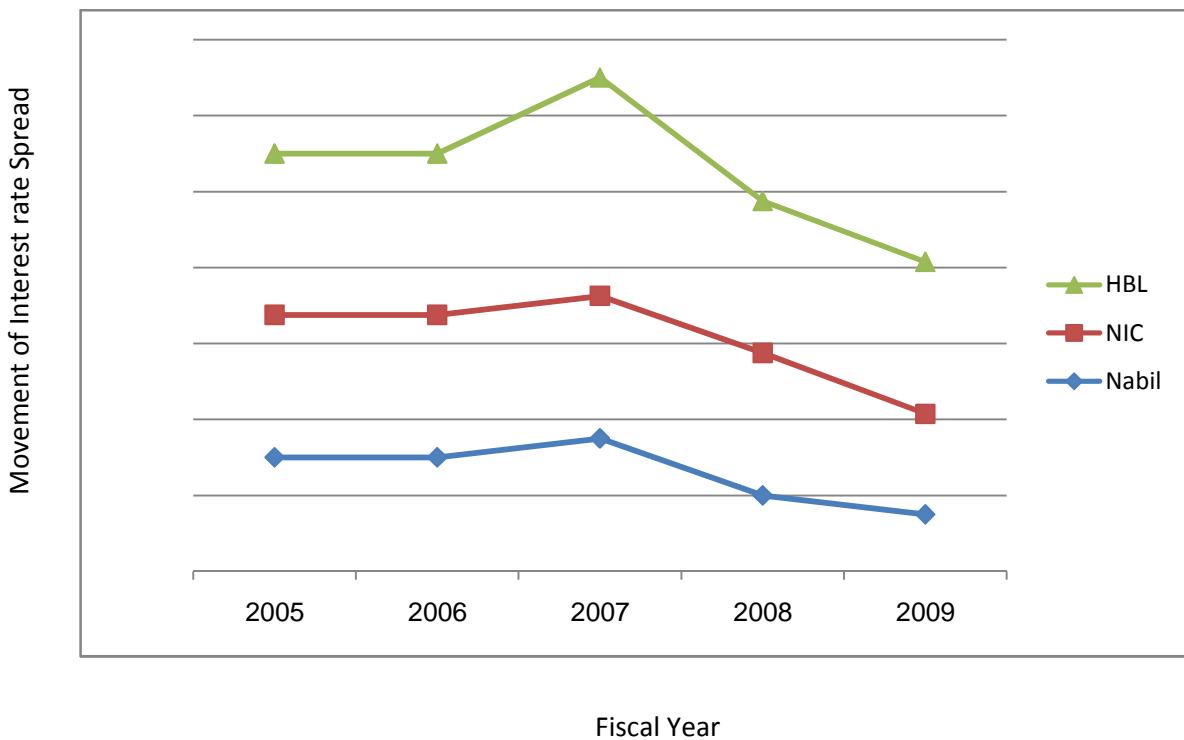
Figure 4.10 represents Interest rate Spread of Nabil, NIC and HBL Bank. Movement of Interest Rate Spread over 5- year period. Nic maintained steady line of rate. Nabil showed fluctuation in rate. HBL reached up to 5.75% in 2007.

**4.1.11 Risk Ratio**

The possibility of risk makes investment a challenging task. Investor has to take risk to get return on its investment. The risk taken in compensated by the increase in profit.So, the banks opting for high profit have to accept the risk and manage it efficiently. The brief description of risk ratios relevant to subject matter of the study are discussed below:

**4.1.11.1 Liquidity Risk Ratio**

The liquidity risk ratio of bank defines its liquidity need for deposits. The cash and bank balance are the most liquid assets and they are considered a banks liquidity source and deposits as the liquidity needs. The ratio cash and bank balance to total deposits is an indicator of liquidity needs.

The ratio is low if funds are kept idle or as cash and bank balance. But this affects profitability when bank disburses loan, its profit increases and also the risk. Thus higher liquidity risk indicates less risks and less profitable bank and vice-versa. Dividing cash and bank balance to total deposits compute this ratio.

The liquidity risk ratio measures the level of risk associated with the liquid assets i.e. cash bank balance that are kept in the bank for purpose of satisfying the depositor's demand for cash. Higher the ratio lower is the liquid risk. Dividing cash and bank balance calculated this ratio by total deposits. This is mentioned as

$$\text{Liquidity risk Ratio} = \frac{\text{Total cash and bank balance}}{\text{Total Deposits}}$$

**Table 4.11**

**Liquidity Risk ratio**

(RS. In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 14586 | 19347 | 23342 | 31915 | 37348 |
| Cash& bank Balance | 559 | 630 | 1399 | 2671 | 3372 |
| C/BB | 3.83% | 3.25% | 5.99% | 8.369% | 9.02% |
| Growth rate | - | -15.14% | 84.30% | 39.71% | 8.67% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| Deposits | 6241 | 8765.9 | 10068 | 13084 | 15579 |
| Cash& bank Balance | 1186 | 749 | 599 | 1192 | 1461 |
| C/BB | 19% | 8.54% | 5.94% | 9.11% | 9.3% |
| Growth rate | - | -55.05% | -30.44% | 53.36% | 2.08% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| Deposits | 24814 | 26490 | 30048 | 31842 | 34681 |
| Cash& bank Balance | 2014 | 1717 | 1757 | 1448 | 3048 |
| C/BB | 8.11 | 6.48% | 5.84% | 4.54% | 8.78% |
| Growth rate | - | -20.09% | -9.87% | -22.26% | 93.39% |

Table 4.11 shows the Liquidity risk Ratio of Nabil, NIC and HBL bank over 5- year period. The liquidity risk ratio of Nabil is in increasing trend  it was 3.83% in 2007 but in 2009 it became 9.02%.The Liquidity Risk of NIC is Fluctuating in 2005 it was 19% but it decreases and became 5.94% and again start to increase and became 9.3% in 2009. The Liquidity risk of HBL is also fluctuating and it maintain a highest of 8.78% in 2009.

**Figure 4.11**

**Liquidity Risk ratio**
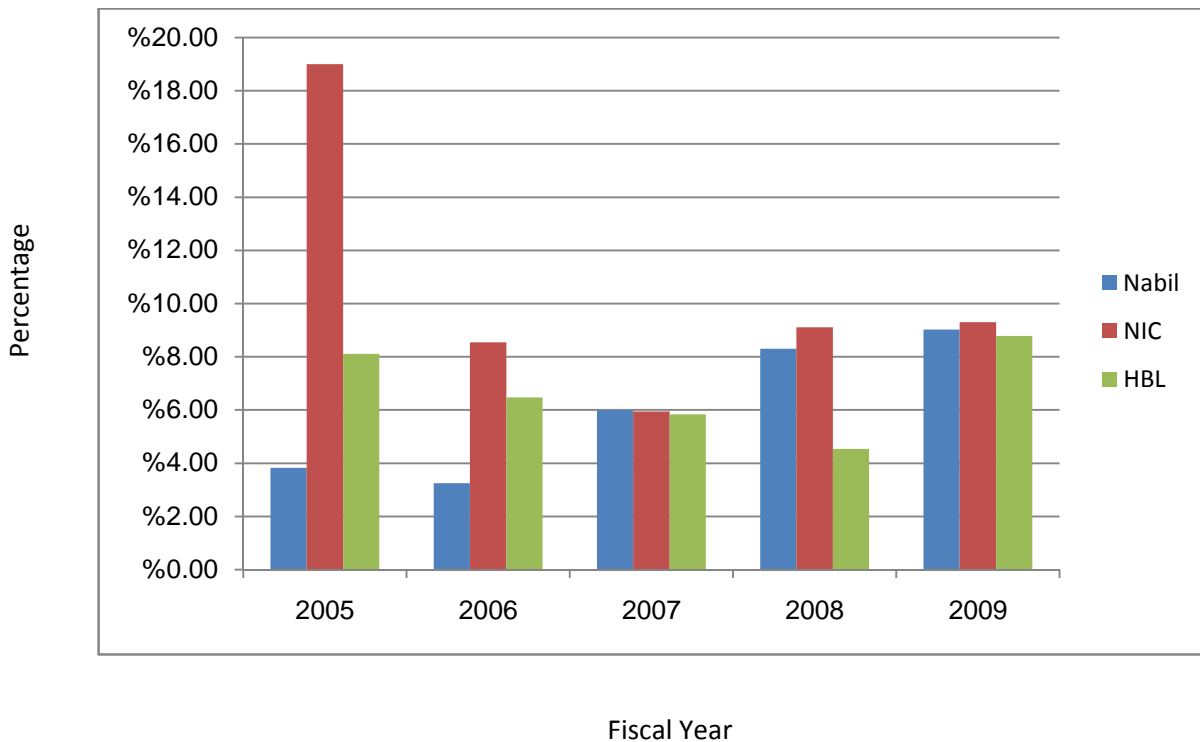


Figure 4.11 shows Liquidity Risk Ratio of Nabil, NIC and HBL Bank over 5- year period. There is no benchmark regarding the holding of cash to fulfill the needs of the depositors. All banks have hold above 3% of deposit and have not heard cash crisis so far by public. It is presumed that all banks have lower liquidity risk.

## 4.1.11.2 Interest Rate Risk Ratio

Interest rate charged by bank is major source of income and expenditure. Depending upon the interest rates, the bank can make investment to maximize their income. Interest rate structure of a bank affects its assets and liability portfolios. Moreover, their profitability highly depends the interest charged by it. The possibility of low due

to change in interest rate is known as interest rate risk.

Interest rate risk shows the decline in the net interest income (NII) due to the change in the interest rates charged by the banks on its deposits and loan and advances. Higher interest rate risk ratios suggest the bank to increase the interest rates on deposit an loan and advances to increase net interest income (NII) and vice-versa. This ratio is calculated by dividing interest sensitive assets (i.e. securities+ Variable rate loan & advances) by interest sensitive liabilities (i.e. borrowing+ Total deposits) excluding current deposits.

This can be mentioned as,

$$\text{Interest rate Risk ratio} = \frac{\text{Interest sensitive Assets}}{\text{Interest sensitive Liabilities}}$$

**Table 4.12**

**Interest Rate Risk ratio**

(Rs.In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Sensitive Liabilities | 15222.25 | 19457.31 | 24848.33 | 31699.23 | 38825.38 |
| Interest Sensitive Assets | 14603.66 | 19520.59 | 24224.85 | 33275.04 | 39029.25 |
| Interest rate Risk Ratio | 104.23% | 99.67% | 102.57% | 95.26% | 99.47% |
| Growth Rate | - | -4.37% | 2.90% | -7.12% | 4.41% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Sensitive Liabilities | 6482.25 | 9382 | 10728 | 13776.79 | 16941.87 |
| Interest Sensitive Assets | 6691.74 | 9223.65 | 10420.35 | 13419.68 | 16240.3 |
| Interest rate Risk Ratio | 96.86% | 101.71% | 102.95% | 102.66% | 104.31% |
| Growth Rate | - | 5% | 1.21% | -0.28% | 1.60% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Interest Sensitive Liabilities | 25142 | 26650 | 29615 | 33519 | 34229 |
| Interest Sensitive Assets | 24960 | 26634 | 30283 | 31925 | 34764 |
| Interest rate Risk Ratio | 100.73% | 100% | 97.79% | 104.99% | 98.46% |
| Growth Rate | - | -7.24% | -2.21% | 7.52% | -6.21% |

Source: Annual Report of Nabil,NIC and HBL

Table 4.12 shows the interest rate risk ratio of Nabil,NIC and HBL Bank. The risk ratio of Nabil decreases in 2006 from 104.23% to 99.07% and again increases to 102.57% in 2007 and start to decreases. NIC showed the Interest rate risk ratio in increasing trend it increases from 96.86% to 104.31% in 2009. HBL shows the fluctuating trend of risk ratio.

**Figure 4.12**

**Interest Rate Risk Ratio**
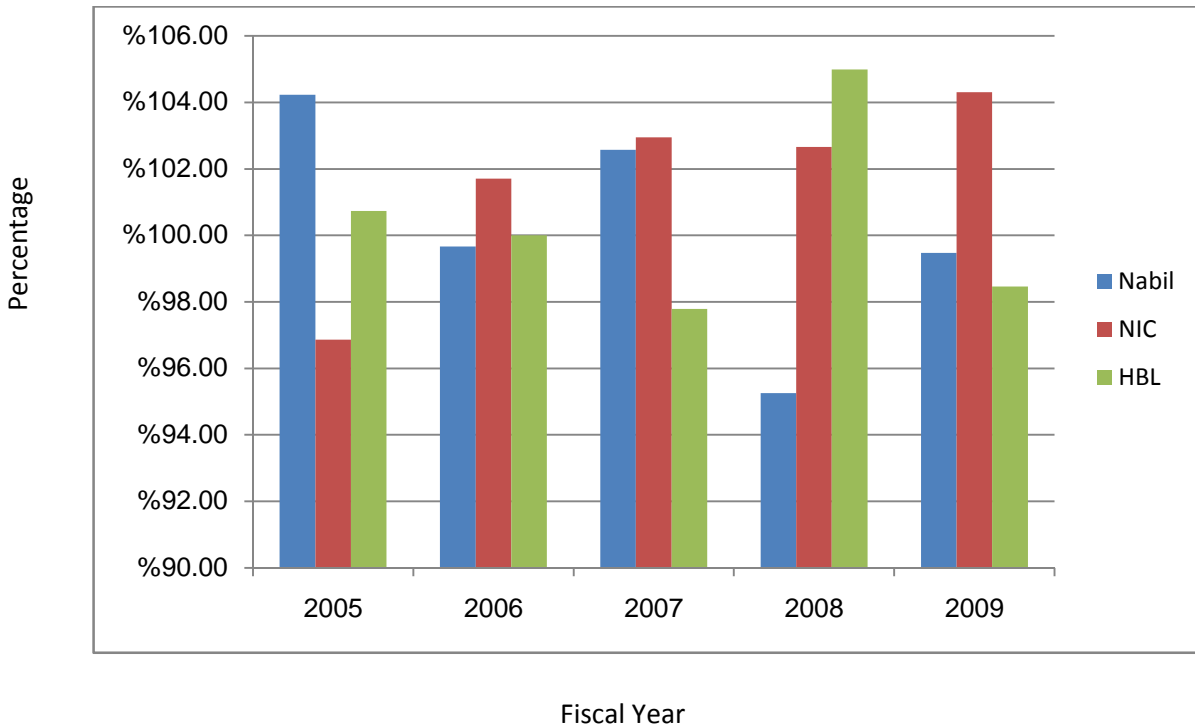


Figure 4.12 shows Interest Rate Risk Ratio of Nabil, NIC and HBL Bank over 5- year period. Nabil bank has comparatively lower interest rate risk ratio than other banks.

This show NIC and HBL have higher dependency on interest income. While Nabil depend on interest rate but they are slightly better than NIC and HBL.

## 4.1.12 Growth Ratio

Growth ratios are directly related to the deposit mobilization and investment management of a commercial bank. Growth ratio represents how well the commercial bank is maintaining its performance. Higher the ratios better the performance of the bank and vice-versa. The equation of the growth ratio is given by;

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

Where,

$A_n$ = Total amount in the n year

$A_o$ = Total amount in the initial year

g= growth rate of the amount during the study period

n=Total no. of the study

To examine and analyze following growth ratios are calculated in this study

### 4.1.12.1 Growth Ratio of Total deposit

**Table 4.13**

**Growth ratio of Total Deposit**

(Rs.In Million)

**Total Deposit**

| Year | Nabil | NIC | HBL |
|------|-------|-----|-----|
| 2005 | 14586 | 6241 | 24814 |
| 2006 | 19347 | 8765 | 26490 |
| 2007 | 23342 | 10068 | 30048 |
| 2008 | 31915 | 13084 | 31842 |
| 2009 | 37348 | 15579 | 34681 |
| Growth rate | 26.49% | 25.69% | 8.72% |

Table 4.13 shows the growth ratio of total deposit of Nabil,NIC and HBL Bank. Nabil has higher deposit collection over five year. It maintained a growth rate of 26.29%. The deposit collection growth rate of HBL and NIC were 8.72% and 25.69% respectively.

**4.1.12.2 Growth ratio of Loan and Investment**

**Table 4.14**

**Growth ratio of Loan and Investment**

(Rs .In Million)

**Total Loan and Investment**

| Year | Nabil | NIC | HBL |
|------|-------|-----|-----|
| 2005 | 15222.25 | 6482 | 25143 |
| 2006 | 19457.31 | 9382.03 | 26650 |
| 2007 | 24848.33 | 10728 | 29615 |
| 2008 | 31699.23 | 13776.79 | 33519 |
| 2009 | 38825.38 | 16941.87 | 34229 |
| Growth rate | 26.37% | 27.14% | 8.01% |

Table 4.14 shows the growth ratio of loan and investment from 2005 to 2009 of Nabil, NIC and HBL Bank. The growth ratio for Nabil for the five year was 26.37%. The growth rate for NIC is 27.14%. Total loan and investment for Nabil reached 38.82 billion in 2009.

**4.1.12.3. Growth Ratio of Interest Income**

**Table 4.15**

**Growth Ratio of Interest Income**

(Rs.In Million)

**Interest Income**

| Year | Nabil | NIC | HBL |
|------|-------|-----|-----|
| 2005 | 1068.74 | 457.60 | 1446.46 |
| 2006 | 1309.99 | 579.97 | 1626.47 |
| 2007 | 1587.75 | 725.81 | 1775.58 |
| 2008 | 1978.69 | 931.40 | 1963.64 |
| 2009 | 2798.48 | 1283 | 2342.19 |
| Growth Rate | 27.20% | 29.40% | 12.80% |

4.15 show the growth ratio of interest income of Nabil, NIC and HBL from 2005 to 2009. Nabil and NIC maintains healthy growth rate of 27.20% and 29.20% respectively. NIC has excessive growth in interest income of 29.40% with 1283 million in 2009. While HBL has the lowest growth rate of interest income of 12.80% with Rs 2342 million.

**4.1.12.4 Growth Ratio of Interest Expenses**

**Table 4.16**

**Growth Ratio of Interest Expenses**

(Rs.In Million)

**Interest Expenses**

| Year | Nabil | NIC | HBL |
|------|-------|------|------|
| 2005 | 243 | 225 | 648 |
| 2006 | 357 | 340 | 561 |
| 2007 | 555 | 421 | 767 |
| 2008 | 758 | 505 | 823 |
| 2009 | 1153 | 767 | 934 |
| Growth Rate | 47.58% | 35.87% | 9.57% |

 Table 4.16 shows the growth ratio of interest expenses of Nabil, NIC and HBL from 2005 to 2009. Nabil showed healthy growth of 47.58% in interest expenses for five year period. While interest expenses for NIC is above 35%. HBL showed growth rate of 9.57% in interest expenses.

**4.1.13. Comparative Interest rates of Commercial Banks**

The interest rates are the driving force of every bank. It has higher impact on the mobilization of the deposit. Higher interest rates on deposit and lower rate loan policy has always attracted potential customer towards the bank in the past and this has still been the important phenomenon in the Nepalese market. However, customers in these days are service conscious and they do see both interest rate and services offered by the bank. Therefore every bank has offered different interest rate as per their ability and standing in the market.

The following table shows the interest rate of commercial banks under study for five consecutive years.

**4.1.13.1. Deposit rate of Sample Commercial Banks**

**Table 4.17**

**Deposit rate of Commercial Banks for 2005**

| Type of deposit | Nabil | NIC | HBL |
|-----------------|-------|------|------|
| Savings | 2.5% | 3% | 3.75% |
| Fixed Deposit | | | |
| 2 week | 2.50% | 1.75% | 1.75% |
| 1 month | 3% | 2% | 2.25% |

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| | | | |
|---|---|---|---|
| 3 months | 3.25% | 2.50% | 2.75% |
| 6 months | 3.50% | 3% | 3.50% |
| 1 year | 4% | 3.75% | 4.25% |
| 2 years | 4.50% | 4% | 4.505 |

Table 4.17 Shows the deposit rate of Nabil, NIC and HBL for the year . the saving rates for Nabil,NIC and HBL were 2.5%. 3% and 3.75% respectively. The fixed deposit for Nabil bank ranged between 2.50% to 4.50%. Similarly fixed deposit rates for NIC ranged from 1.75% to 4%. And for 1.75% interest rate of fixed deposit lies between 1.75% to 4.50%.

**Table 4.18**

**Deposit Rate of Commercial banks for 2006**

| Type of deposit | Nabil | NIC | HBL |
|---|---|---|---|
| Savings | 2% | 2% | 3% |
| Fixed Deposit | | | |
| 2 week | 2.50% | 1.75% | 1.75% |
| 1 month | 3% | 2.25% | 2% |
| 3 months | 3.25% | 2.75% | 2.505 |
| 6 months | 3.50% | 3.75% | 3% |
| 1 year | 4% | 4.5% | 3.75% |
| 2 years | 4.25% | 5.5% | 4% |

Table 4.18 shows the deposit rate of Nabil, NIC and HBL for the year 2006. The saving rate of Nabil slipped down to 2% from 2.5% in 2005. Likewise the saving rate of NIC and HBL also slipped down to 2 and 3% in 2006 from 3% and 3.75% in 2005 respectively. The fixed deposit for Nabil ranged between 2.50% and 4.25% and that for NIC ranged between 1.75% and 5.5%. Similarly HBL offered the interest rate between 1.75% and 4% for the same period.

**Table 4.19**

**Deposit Rate of Commercial banks for 2007**

| Type of deposit | Nabil | NIC | HBL |
|---|---|---|---|
| Savings | 2% | 3% | 2% |
| Fixed Deposit | | | |
| 2 week | 1.75% | 2% | 1.75% |
| 1 month | 2% | 2.25% | 2% |

| | | | |
|---|---|---|---|
| 3 months | 2.75% | 2.50% | 2.25% |
| 6 months | 3% | 3.25% | 2.75% |
| 1 year and above | 3.5o% | 4.25% | 3.75% |

Table 4.19 shows the deposit rate of Nabil, NIC and HBL for the year 2007. The saving rates for Nabil, NIC and HBL were 2%,3% and 2% respectively. The fixed deposit for Nabil bank ranged between 1.75% to 3.50%. Fixed deposits rates for NIC ranged between 2% and 4.25% and for HBL interest rate of fixed deposit lies between 1.75% and 3.75%. fixed deposit rate for NIC and HBL has slipped down this year than the previous year.

**Table 4.20**

**Deposit Rate of Commercial Banks for 2008**

| Type of deposit | Nabil | NIC | HBL |
|---|---|---|---|
| Savings | 2% | 3% | 2% |
| Fixed Deposit | | | |
| 2 week | 3% | 2.75% | 2% |
| 1 month | 3.50% | 3.25% | 2.25% |
| 3 months | 4% | 3.50% | 2.50% |
| 6 months | 4.50% | 4.25% | 3.25% |
| 1 year | 5% | 5% | 4.5% |
| 2 years | 6.75% | 5.5% | 5.5% |

Table 4.20 shows the deposit rate of Nabil, NIC and HBL for the year 2008. The saving rate for Nabil is 2% in 2008. The saving rate for NIC and HBL is 3% and 2% respectively. The fixed deposit for Nabil bank ranged from 3% to 6.75%. NIC for the same period offered the interest rate between 2.75% and 5.5% at the most. Likewise, fixed deposit for HBL ranged from 2% to 5.5%.

**Table 4.21**

**Deposit Rate of Commercial banks for 2009**

| Type of deposit | Nabil | NIC | HBL |
|---|---|---|---|
| Savings | 2.5% | 3.25% | 2.25% |
| Fixed Deposit | | | |
| 2 week | 3% | 2.75% | 2.5% |
| 1 month | 4% | 3.25% | 3.25% |
| 3 months | 4.5% | 3.5% | 3.75% |

| | | | |
|---|---|---|---|
| 6 months | 5% | 4.75% | 4.5% |
| 1 year | 7% | 5.25% | 6.5% |
| 2 years | 8% | 6% | 8% |

Table 4.21 shows the deposit rate of Nabil,NIC and HBL for the year 2009. The saving rate for Nabil,NIC and HBL remain changed to 2.75%,3.25% and 2.25% respectively. The fixed deposit of Nabil ranged from 3% to 8%. Likewise fixed deposit for NIC and HBL ranged from 2.75% to 6% and 2.25% to 8% respectively.

### 4.1.13.2. Lending Rate of Sample Commercial Banks

**Table 4.22**

**Lending rate of Commercial banks for 2005**

| Nature of Lending | Nabil | NIC | HBL |
|---|---|---|---|
| Overdraft | N/A | 11% | 12% |
| Export Credit | 11% | 10.5% | 8.75% |
| Against FDR | 7% | 9% | 9.5% |
| Against HMG Bond | 7.5% | 8% | 6% |
| Commercial Loan | N/A | N/A | 8.25% |
| Term Loan | 13% | 12.5% | 11.75% |
| Working Capital | 12% | 11% | N/A |
| Hire Purchase | 12.5% | 11% | 11.5% |
| Industrial Loan | N/A | N/A | 12.75% |
| Priority Sector | 12% | 12% | 12% |

Table 4.22 shows the lending rate for Nabil, NIC and HBL for the year 2005. Lending rates of bank are very different from one another. All banks have quotes the rates as per the demand of the market. The overdraft is priced at 12% by HBL and NIC and Nabil kept export credit for 11% and 10.5% higher than HBL. The loan against HMG bond all have similar rate but range little differences of 0.5%. The commercial loan of HBL is 8.25% but Nabil and NIC commercial loan is not available. The priority sector loan is same of all three banks.

**Table 4.23**

**Lending Rate of Commercial Banks for 2006**

| Nature of Lending | Nabil | NIC | HBL |
|---|---|---|---|
| Overdraft | N/A | 11% | 12% |
| Export Credit | 11% | 10.5% | 8.75% |
| Against FDR | 7% | 9% | 9.5% |
| Against HMG Bond | 7.5% | 8% | 6% |
| Commercial Loan | N/A | N/A | 8.25% |
| Term Loan | 13% | 12.5% | 11.75% |
| Working Capital | 12% | 11% | N/A |
| Hire Purchase | 12.5% | 11% | 11.5% |
| Industrial Loan | N/A | 12% | 12.75% |
| Priority Sector | 12.5% | 12% | 12% |

Table 4.23 shows the lending rate of Nabil, NIC and HBL for the year 2006. Lending rate of Nabil ,NIC and HBL remain same like 2005 in 2006. There was no any change in lending rate in year 2006 in some of the nature of lending but it was almost same like 2005.

**Table 4.24**

**Lending Rate of Commercial Bank for 2007**

| Nature of Lending | Nabil | NIC | HBL |
|---|---|---|---|
| Overdraft | N/A | 12.5% | 10% |
| Export Credit | 10.5% | 10.5% | 8.75% |
| Against FDR | 7% | 10% | 9.5% |
| Against HMG Bond | 7.5% | 8% | 6.50% |
| Commercial Loan | N/A | N/A | N/A |
| Term Loan | 12% | 14% | 10.5% |
| Working Capital | 11.5% | 12% | N/A |
| Hire Purchase | 12% | 11% | 9% |
| Industrial Loan | N/A | N/A | N/A |
| Priority Sector | 11% | N/A | 10% |

Table 4.24 shows the lending rate for Nabil,NIC and HBL for the year 2007. Lending rates of banks are different from one another. The most sellable overdraft is priced between 10% and 12.5%. NIC had proceed 12.5% followed by HBL at 10%. The commercial loan and Industrial loan of all three bank is not available. The loan against HMG bond is between 6% to 8%. The loan against priority sector is 11% and 10% respectively of Nabil and HBL banks.

**Table 4.25**

**Lending rate of Commercial banks for 2008**

| Nature of Lending | Nabil | NIC | HBL |
|---|---|---|---|
| Overdraft | N/A | 11% | 10% |
| Export Credit | 10.5% | 9% | 9.75% |
| Against FDR | 7.5% | 9% | 9% |
| Against HMG Bond | 7.5% | 8.5% | 7% |
| Commercial Loan | N/A | N/A | N/A |
| Term Loan | 125 | 11% | 10.5% |
| Working Capital | 11.5% | 10.5% | N/A |
| Hire Purchase | 12% | 10.49% | 9.5% |
| Industrial Loan | N/A | N/A | N/A |
| Priority Sector | 11% | N/A | 9% |

Table 4.25 shows the lending rate for Nabil,NIC and HBL for the year 2008. The consumer loan and Industrial loan lending rate is not available. The sellable overdraft is priced between 11% and 10% of NIC and HBL bank. Export credit lending rate of Nabil,NIC and HBL is 10.5%, 9% and 9.75% respectively. There is 0.5% change in lending rate against FDR of all sample banks. Working capital loan of Nabil is 11.5% and NIC is 10.5%. there is drastic change in term loan of NIC in year 2008 it decrease from 14% to 11% in 2008.

**Table 4.26**

**Lending Rate of Commercial Bank for 2009**

| Nature of Lending | Nabil | NIC | HBL |
|---|---|---|---|
| Overdraft | N/A | 11% | 10.75% |
| Export Credit | 12% | 9% | 10.75% |
| Against FDR | 9.5% | 9% | 6% |
| Against HMG Bond | 10% | 8.5% | 8% |
| Commercial Loan | N/A | 8% | 9% |
| Term Loan | 12.5% | 11% | 12.5% |
| Working Capital | 12% | 10.5% | 12% |
| Hire Purchase | 10% | 11% | 12% |
| Industrial Loan | 10% | 11% | 11% |
| Priority Sector | N/A | 10% | 10% |

Table 4.26 shows the lending rate for Nabil, NIC and HBL for the year 2009. Lending rates of banks are different from one another. The lending rates were very much similar to preceding year and reduced by the individual banks as per the need and demand of the market. HBL increased its rate for overdraft to 10.75%. NIC floats most of its loan product at comparatively lower rate than other banks. HBL change

the rate actively to fulfill the demand of market but NIC and Nabil did not change the rate actively and maintained a wait and watch passive role.

## 4.1.14. Deposit Mix

The deposit mix is the composition of the deposit. The deposit of the banks is categorized under five different accounts namely current, saving, fixed,call and other that include margin amount, hold fund e.t.c. the current and other deposit has fixed interest rate while market drives the interest rate for call deposits.

The deposit mix of the banks is as follows:

**Table 4.27**

**Deposit Mix of Nabil bank**

Rs in Million

| Year | 2005 | % | 2006 | % | 2007 | % | 2008 | % | 2009 | % |
|------|------|---|------|---|------|---|------|---|------|---|
| Deposit | | | | | | | | | | |
| Current | 2910.58 | 19.95 | 2799.18 | 14.46 | 3395.23 | 14.54 | 5284.36 | 16.55 | 5480.53 | 14.67 |
| Saving | 7026.33 | 48.16 | 8770.75 | 45.33 | 10187.35 | 43.64 | 12159.96 | 38.10 | 14620.40 | 39.14 |
| Fixed | 2078.53 | 14.24 | 3449.09 | 17.82 | 5435.18 | 23,28 | 8464.08 | 26.52 | 8310.70 | 22.25 |
| Call | 2341.32 | 16.05 | 3851.15 | 19.96 | 3961.63 | 16.97 | 5563.44 | 17.43 | 8438.27 | 22.59 |
| Others | 229.84 | 1.57 | 477.22 | 2.46 | 362.89 | 1.5 | 443.2 | 1.38 | 498.35 | 1.33 |

Source: Annual report of Nabil

Table 4,27 shows the deposit mix of Nabil Bank for 5 year period. The deposit mix of Nabil Bank shows the customer have save the deposit more in the saving deposit. The saving deposit have 48.16% in the year 2005. The current deposit was highest in 2005 likewise fixed deposit was highest in year 2008 and reached 26.52%. The market driven call deposit was highest in year 2009.

**Figure: 4.13**
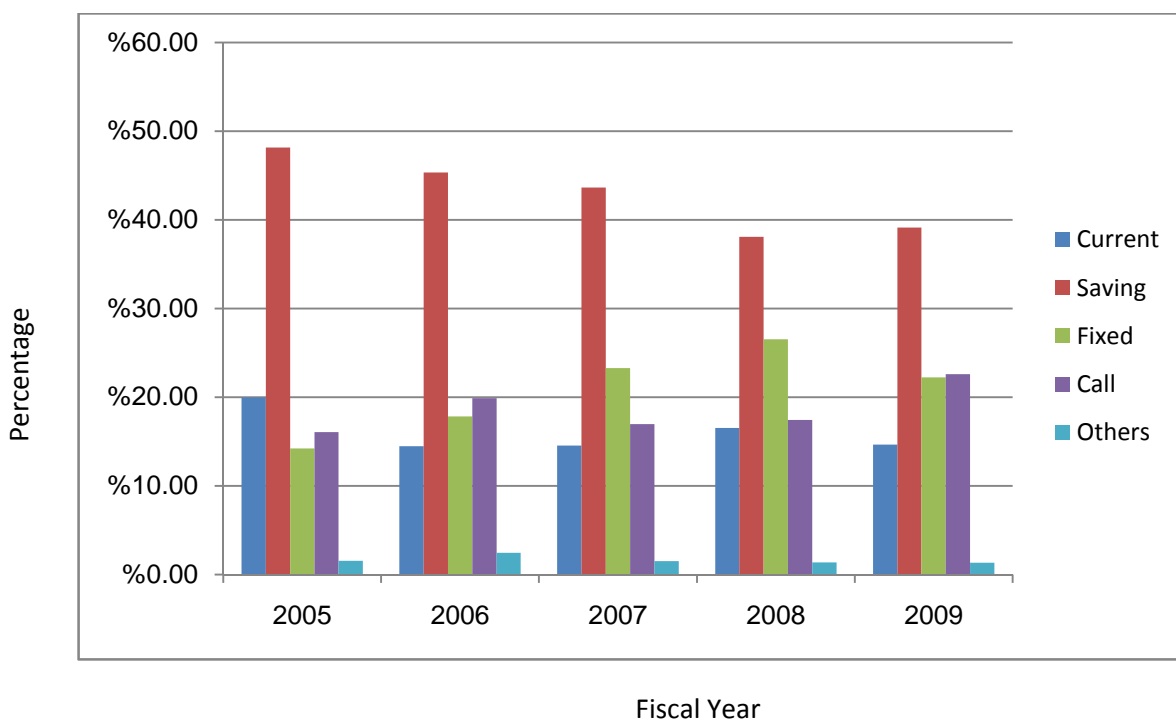
**Deposit Mix of Nabil Bank**

Figure 4.13 shows the deposit mix of Nabil Bank for 5-year period. The deposit mix of Nabil bank is more in saving deposit than others. There was fixed deposit in average in Nabil bank.

**Table 4.28**

## Deposit Mix of NIC Bank

| Year | 2005 | % | 2006 | % | 2007 | % | 2008 | % | 2009 | % |
|---|---|---|---|---|---|---|---|---|---|---|
| Deposit | | | | | | | | | | |
| Current | 233.26 | 3.7 | 391.87 | 4.47 | 510.20 | 5.06 | 654.17 | 4.9 | 834.69 | 5.35 |
| Saving | 2024.25 | 32.42 | 2797.42 | 31.91 | 3335.67 | 33.13 | 3667.89 | 28.03 | 3993.71 | 25.63 |
| Fixed | 2930.61 | 46.95 | 4064.50 | 46.36 | 4074.56 | 40.46 | 5875.95 | 44.90 | 7580.05 | 48.65 |
| Call | 989.90 | 15.86 | 1459.21 | 16.64 | 2066.18 | 20.52 | 2814.40 | 21.50 | 3069.27 | 19.70 |
| Others | 63.45 | 1.01 | 52.95 | 0.60 | 81.62 | 0.81 | 72.27 | 0.52 | 102.21 | 0.65 |

Source: Annual Report of NIC

Table 4.28 shows the deposit mix of NIC Bank for 5 year period. Fixed deposits have contributed more in deposit of the bank. There was increasing fixed deposit in NIC bank. Customer saves less on current deposit. The call deposit is fluctuating i.e. sometimes given more contribution on deposit and some times less.

**Figure4.14**

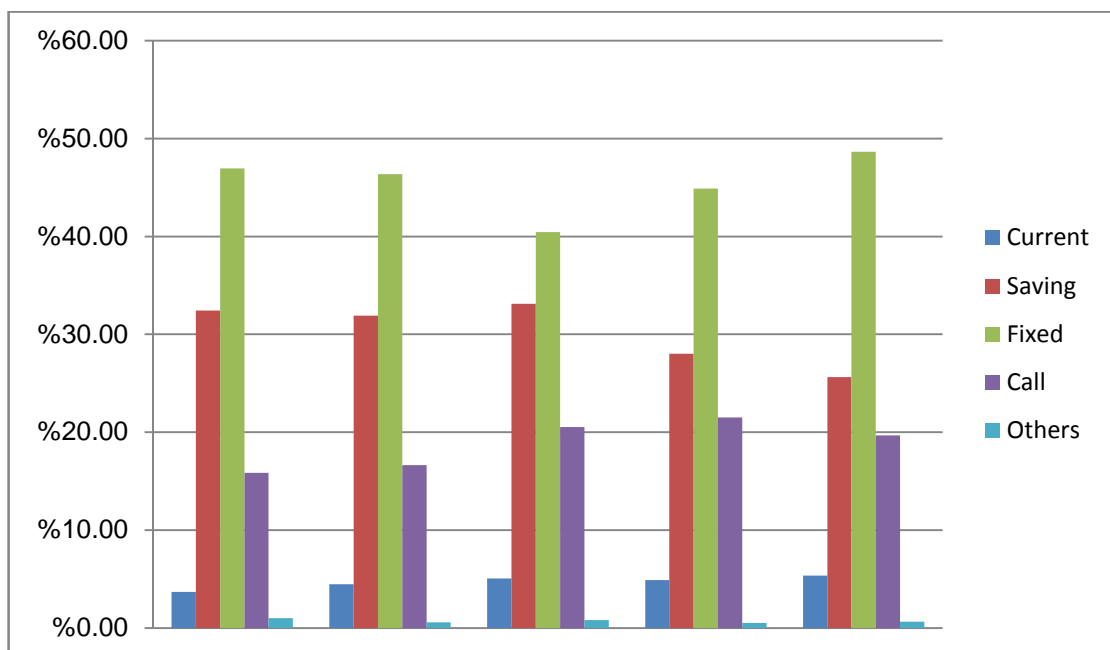**Deposit Mix of NIC Bank Limited**



Figure 4.14 shows the deposit mix of NIC Bank for 5 year period. There was more fixed deposit in NIC bank than other deposit. Fixed deposit was followed by saving deposit. It shows that NIC bank utilized the deposit efficiently because there was more fixed deposit in bank and did not fill financial crisis.

Table 4.29

**Deposit Mix of HBL**

| Year | 2005 | % | 2006 | % | 2007 | % | 2008 | % | 2009 | % |
|------|------|---|------|---|------|---|------|---|------|---|
| Deposit | | | | | | | | | | |
| Current | 5045.16 | 20.33 | 5028.15 | 18.98 | 5589.58 | 18.60 | 4784.21 | 15.02 | 3218.22 | 9.27 |
| Saving | 12852.41 | 51.79 | 14582.85 | 55.04 | 15784.76 | 52.53 | 17972.44 | 56.44 | 20061.04 | 57.84 |
| Fixed | 6107.43 | 24.61 | 6350.20 | 23.97 | 8201.13 | 27.29 | 6423.87 | 20.17 | 6377.13 | 18.38 |
| Call | 222.96 | 0.89 | 41.61 | 0.15 | 97.90 | 0.32 | 2017.07 | 6.3 | 4359.76 | 12.57 |
| Others | 809.01 | 3.2 | 488.04 | 1.84 | 375.04 | 1.24 | 645.19 | 2.02 | 665.19 | 1.91 |

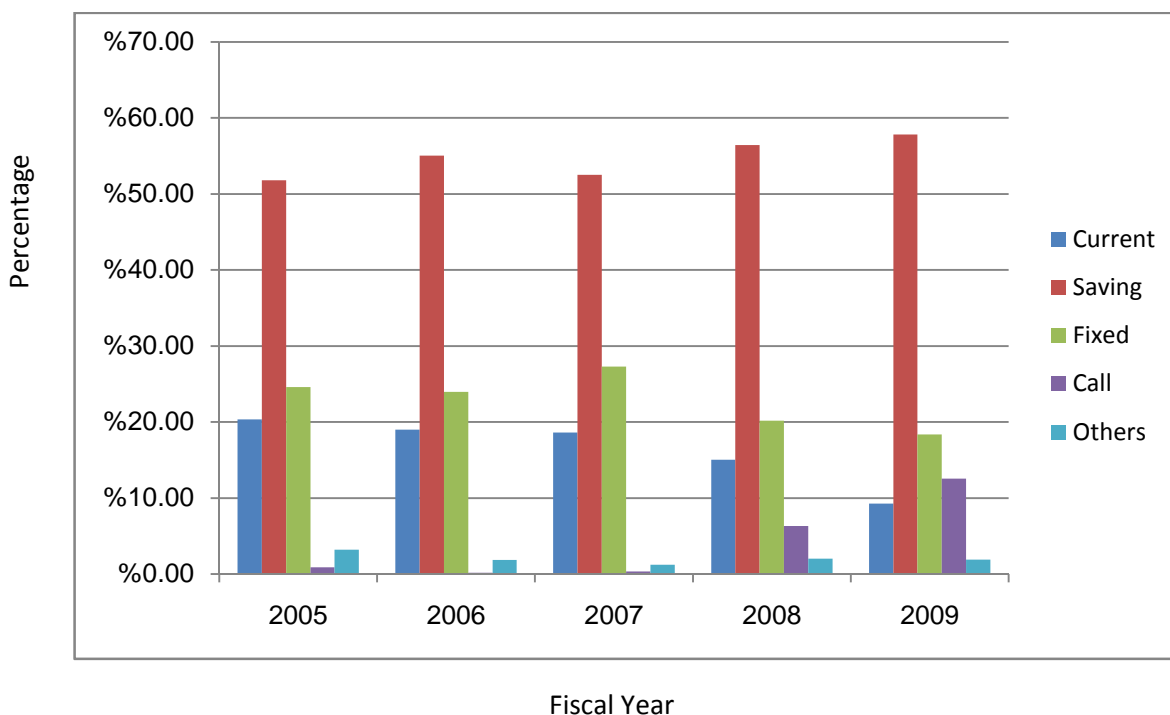**Figure 4.15**

**Deposit Mix of HBL**



Fiscal Year

Figure 4.15 shows the deposit mix of HBL bank for 5 year period. There was more saving deposit in the HBL bank for 5 year period. The saving deposit was above 50%

in the bank. There was less fixed and current deposit compare to saving deposit.

## 4.1.15 Deposit Ratio

The deposit ratio shows the deposit mix of the total deposit of the bank. This ratio can be calculated as follows:

## 4.1.15.1. Fixed Deposit to Total Deposit

The fixed deposit is always high cost fund available for banks. Generally it says 1 to 2 percent higher than non fixed deposit accounts which decrease the interest spread to higher extent. The share of fixed deposit out of total deposit is determined by following formula

$$\frac{\text{Fixed deposit}}{\text{Total deposit}}$$

**Table 4.30**

**Fixed deposit to Total deposit**

Rs in Million

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 14586.60 | 19347.39 | 23342.28 | 31915.04 | 37348.25 |
| Fixed Deposits | 2078.53 | 3449.09 | 5435.18 | 8464.08 | 8310.70 |
| Fixed Deposits/Deposits | 14.24% | 17.82% | 23.28% | 26.52% | 22.25% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 6241.37 | 8765.95 | 10068.23 | 13084.68 | 15579.93 |
| Fixed Deposits | 2930.61 | 4064.50 | 4074.56 | 5875.95 | 7580.05 |
| Fixed Deposits/Deposits | 46.95% | 46.36% | 40.46% | 44.90% | 48.65% |

**HBL Bank**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 24814.01 | 26490.85 | 30048.41 | 31842.78 | 34681.34 |

| Fixed Deposits | 6107.43 | 6350.20 | 8201.13 | 6423.87 | 6377.13 |
|---|---|---|---|---|---|
| Fixed Deposits/Deposits | 24.61% | 23.97% | 27.29% | 20.17% | 18.38% |

Source: Annual Report of Nabil,NIC and HBL

Table 4.30 shows the fixed deposit to Total Deposit of Nabil, NIC and HBL bank for 5 year period. NIC bank has high fixed deposit than Nabil and HBL bank. The ratio fixed deposit to total deposit of Nabil is in increasing trend where as HBL bank have ratio of fluctuating.

**Figure 4.16**
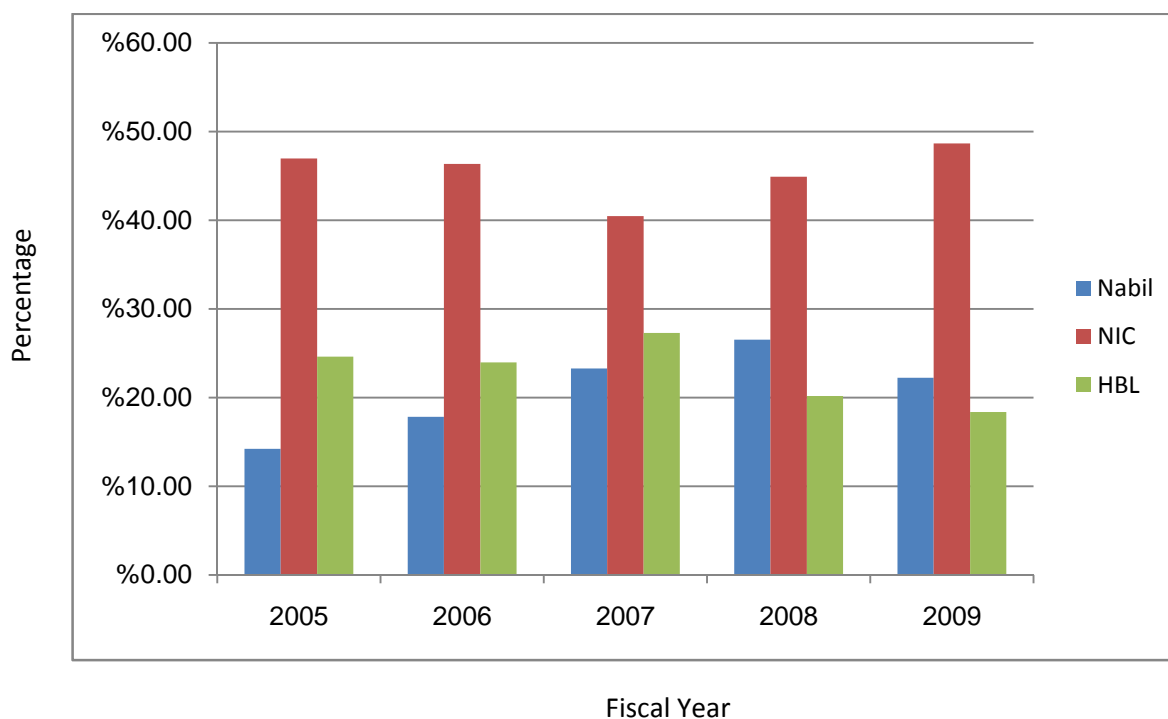
**Fixed Deposit to Total deposit**

Figure 4.16 shows the ratio of Fixed Deposit to Total Deposit of Nabil, NIC and HBL Bank for 5 year period. The ratio of NIC was above 40% whereas ratio of Nabil and HBL was only above 14%.

**4.1.15.2 Interest Bearing Deposit to Total Deposit**

Interest is the cost of fund used. Higher the interest higher is the cost of fund. It is generally preferred to have low or no interest bearing deposit to lend bank to high profitability. Therefore it is always targeted to have lower share of interest bearing deposit in the bank. This equation shows the ratio of interest payable deposit to total deposit.

$$IBDTTD = \frac{\text{Interest Bearing}}{\text{Total deposit}}$$

The numerator represents all interest payable deposit like saving deposit, fixed deposit, call deposit and certificate of deposit.

**Table 4.31**

**Interest Bearing Deposit to Total Deposit**

(Rs.In Million)

**Nabil Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| Deposits | 14586.60 | 19347.39 | 23342.28 | 31915.04 | 37348.25 |
| IBD | 11446.18 | 16070.99 | 19584.16 | 26187.48 | 31369.37 |
| IBD/Deposits | 78.47% | 83.06% | 82.05% | 82.05% | 83.99% |

**NIC Bank Limited**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|
| Deposits | 6241.37 | 8765.95 | 10068.23 | 13084.68 | 15579.93 |
| IBD | 5944.76 | 8321.13 | 9476.34 | 12358.24 | 14643.03 |
| IBD/Deposits | 95.2% | 94.92% | 94.12% | 94.44% | 93.98% |

**HBL**

| Year | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| Deposits | 24814.01 | 26490.85 | 30048.41 | 31842.78 | 34681.34 |
| IBD | 19182.8 | 20974.66 | 24083.79 | 26413.38 | 30797.93 |
| IBD/Deposits | 77.30% | 79.17% | 80.14% | 82.94% | 88.80% |

Source: Annual report of Nabil,NIC and HBL

Table 4.31 shows the Interest Bearing deposits to Total Deposit. NIC had interest bearing deposit/ total deposit above 90% and the IBD/TD of HBL is in increasing trend as interest rate increases it also increases. Nabil have fluctuating Interest bearing deposit to total deposit.

**Figure: 4.17**

**Interest Bearing Deposit to Total Deposit**

Fiscal Year
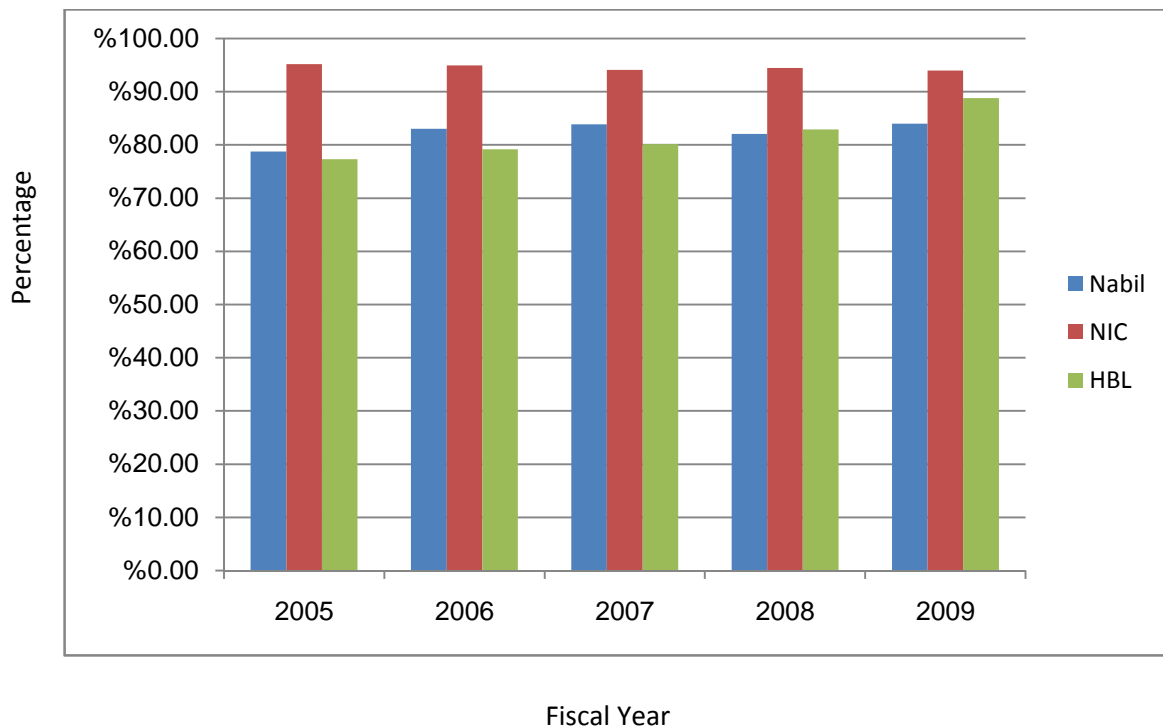
Figure 4.17 shows Interest Bearing Deposit to Total Deposit of Nabil,NIC and HBL over 5 year period. HBL is able to maintain good amount of non-interest bearing deposit account among all three banks.

## 4.2 Statistical Analysis

### 4.2.1 Coefficient of Correlation Analysis

In this analysis, Karl Pearson's co-efficient of correlation has been used to find out the relationship between variables. Correlation analysis describes the relationship between variables is positive or negative. It helps to determine whether,

A positive or negative relationship exists.

The relationship is significant or insignificant

Establish cause and effect relation if any.

For the purpose of decision- making interpretation are based on following terms:

When r= 1, there is perfect positive correlation.

When r = -1, there is perfect negative correlation.

When r = 0 there is no correlation.

Probable Error

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

$$PE = 0.6745 \times \frac{1-r^2}{\sqrt{n}}$$

Where,

r= the value of correlation coefficient

n= Number of pairs of observations

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

 i) If r < PE, it is insignificant, i.e. there is no evidence of correlation.

 ii) If r> PE, it is significant

 iii) If PE<r<6PE, nothing can be concluded.

## 4.2.1.1 Co-efficient of correlation between Average Deposit Interest Rate and Total deposit

The following table shows the deposit interest rate and total deposit of Nabil,NIC and HBL for the period 2005-2009. To measure and evaluate the correlation between these variables, deposit interest rate is independent variable(X) and Total deposit is dependent variable(Y).

**Table 4.32**

**Interest Rate and Total Deposit**

| | Nabil | | NIC | | HBL | |
|---|---|---|---|---|---|---|
| Year | Int Rate | Deposit | Int rates | Deposit | Int Rate | Deposit |
| 2005 | 3.3 | 14586.60 | 2.8 | 6241.37 | 3.25 | 24814.01 |
| 2006 | 3.2 | 19347.39 | 3.2 | 8765.95 | 2.8 | 26490.85 |

| 2007 | 2.5 | 23342.28 | 2.8 | 10068.23 | 2.4 | 30048.41 |
| 2008 | 4.1 | 31915.04 | 3.8 | 13084.68 | 3.1 | 31842.78 |
| 2009 | 4.8 | 37348.25 | 4.1 | 15579.93 | 4.3 | 34681.34 |

Source: Annual report of Nabil,NIC and HBL

The following Table describes the relationship between deposit interest rate and total deposit. The objective of computing 'r" between these two variables is to justify whether interest rate are significantly correlated with deposit or not.

**Table 4.33**

**Correlation Coefficient between Deposit Interest Rates and Total Deposi**t

| Banks | r | r^2 | P.E | 6 P.E |
| --- | --- | --- | --- | --- |
| Nabil | 0.73 | 0.5329 | 0.141 | 0.847 |
| NIC | 0.91 | 0.8281 | 0.0519 | 0.311 |
| HBL | 0.53 | 0.28 | 0.207 | 1.24 |

Source; Annex-1

Table 4.33 addresses the coefficient of correlation between deposit interest rate 9Independent) and total deposit (dependent) of Nabil, NIC and HBL. Nabil, NIC and HBL showed positive correlation. The value of co-efficient of determination (r2) of Nabil is 0.539. it indicates 53.29% of variation in dependent variable (deposit) has been explained by the independent variable (deposit interest rate). Value of P.E for Nabil is 0.141 and 6P.E is 0.847. There is lower degree of correlation but as r>P.E there is significant relationship between deposit interest rate and total deposit of Nabil. The value of coefficient of determination () of NIC and HBL is 0.8281 and 0.28 respectively. It indicates 82.81% and 28% of the variation in the dependent variable (deposit) has been explained by the independent variable (deposit interest rate). Value of P.E for two banks is 0.0519 and 0.207. P.E of NIC and HBL prove to be significant and negatively correlated. It can be concluded that every decrease and increase in deposit interest rate will lead to respective increase and decrease in total deposit.

**Table 4.34**

**t-Test between Deposit Interest Rates and Total deposits**

| Banks | t-calculated | t-tabulated | Decision |
| --- | --- | --- | --- |
| Nabil | 1.849 | 3.182 | Insignificant |
| NIC | 3.82 | 3.182 | Significant |
| HBL | 1.0826 | 3.182 | Insignificant |

Source: Annex-1

Table 4.34 addresses the t-test between deposit interest rate and total deposit of Nabil, NIC and HBL. The value of t-statistics if calculated then it is 1.849, 3.82 and 1.0826 for Nabil, NIC and HBL respectively. The tabulated value for it at 5% level of significance and 3 degree of freedom (d.f) is 3.182. So, in this case t-calculated is lesser than t-tabulated. This indicates the relationship between correlation coefficient is insignificant for Nabil and HBL but significance for NIC Bank. Deposit interest rate doesn't play a significant role in deposit collection for Nabil and HBL bank.

### 4.2.1.2 Co-efficient of correlation between Average lending Interest rate and Total Credit.

The following table shows the lending interest rate and total credit of Nabil, NIC and HBL for the period 2005 to 2009. To measure and evaluate the correlation between these variables, lending interest rate is independent variable9X) and total credit is dependent variable (Y).

**Table 4.35**

**Interest Rate and Total Lending**

| | **Nabil** | | **NIC** | | **HBL** | |
|---|---|---|---|---|---|---|
| Year | Int rate | Lending | Int Rate | Lending | Int rate | Lending |
| 2005 | 10.7 | 10946.73 | 10.62 | 4904.35 | 10.27 | 13451.16 |
| 2006 | 10.7 | 13278.78 | 10.62 | 6902.12 | 10.27 | 15761.97 |
| 2007 | 10.2 | 15903.02 | 11.14 | 9128.64 | 9.17 | 17793.72 |
| 2008 | 10.28 | 21759.46 | 9.9 | 11465.33 | 9.25 | 20179.61 |
| 2009 | 10.85 | 27999.01 | 8.8 | 13915.85 | 10.2 | 25519.51 |

The following table describes the relationship between lending interest rate and total credit. The objective of computing 'r' between two variables is to justify whether lending interest rates are significantly correlated with total credit or not.

**Table 4.36**

**Correlation coefficient between Lending Interest rates and Total credit**

| Banks | R | r^2 | P.E | 6 P.E |
|---|---|---|---|---|
| Nabil | 0.121 | 0.0147 | 0.298 | 1.78 |
| NIC | -0.787 | 0.6193 | 0.115 | 0.690 |
| HBL | -0.127 | 0.0161 | 0.297 | 1.785 |

Source:Annex-1

Above table 4.36 address the coefficient of correlation between lending interest rate (independent) and total loan (dependent) of Nabil, NIC and HBL. NIC and HBL show high negative correlation -0.787, -0.127 respectively. The value of coefficient of determination ($r^2$) of the banks are 0.0147, 0.6193 and 0.0161 respectively. This shows 14.7%, 61.93% and 16.14% of the variation in the dependent variables has been explained by independent variables. Value is insignificant for all three banks.

**Table 4.37**

**t- test between Lending Interest Rates and Total credit**

| Banks | t-Calculated | t-tabulated | Decision |
|-------|-------------|-------------|----------|
| Nabil | 0.365 | 3.182 | Insignificant |
| NIC | 2.2092 | 3.182 | Insignificant |
| HBL | 2.2176 | 3.182 | Insignificant |

Source:Annex-1

Table 4.37 addresses the t-test between lending interest rate and total credit of Nabil, NIC and HBL. The value of t-statistics calculated is 0.365, 2.2092 and 2.2176 for Nabil, NIC and HBL respectively. The tabulated value for it at 5% level of significance and 3 degree of freedom (d.f) is 3.182. So, in this case t-calculated is lesser than t-tabulated for Nabil, NIC and HBL. This indicates the relationship between correlation coefficient is insignificant. Lending interest rate doesn't play a significant role in total credit.

**4.2.1.3 Coefficient of correlation between Total deposit and Total lending**

The following table shows the total deposit and total lending of Nabil, NIC and HBL for the period 2005 to 2009. To measure and evaluate the correlation between these variables, total deposit is independent variable (X) and total lending is dependent variable(y).

**Table 4.38**

**Total deposit and Total Lending**

| | Nabil | | NIC | | HBL | |
|------|---------|---------|---------|---------|---------|---------|
| Year | Lending | Deposit | lending | Deposit | Lending | Deposit |
| 2005 | 10946.73 | 14586.60 | 4909.35 | 6241.37 | 13451.16 | 24814.01 |
| 2006 | 13278.78 | 19347.39 | 6902.12 | 8765.95 | 15761.97 | 26490.85 |

| | | | | | |
|---|---|---|---|---|---|
| 2007 | 15903.02 | 23342.28 | 9128.64 | 10068.23 | 17793.72 | 30048.41 |
| 2008 | 21759.46 | 31915.04 | 11465.33 | 13084.68 | 20179.61 | 31842.78 |
| 2009 | 27999.01 | 37348.25 | 13915.85 | 15579.93 | 25519.51 | 34681.34 |

Source: Annual report of Nabil,NIC and HBL

The following table describes the relationship between total deposit and total lending. The objective of computing 'r' between these two variables is to justify whether total deposit is significantly correlated with total lending or not.

**Table 4.39**

**Correlation coefficient between Total Deposit and Total Lending**

| Banks | r | r^2 | P.E | 6P.E |
|---|---|---|---|---|
| Nabil | 1 | 1 | 0 | 0 |
| NIC | 0.9953 | 0.9906 | 0.0028 | 0/0170 |
| HBL | 0.973 | 0.9467 | 0.973 | 0.0967 |

Source: Annex-1

From the above table, the coefficient of correlation between total deposit (independent) and total lending (dependent) of Nabil, NIC and HBL has been found. All banks have positive coefficient of correlation i.e. 1, 0.9953 and 0.977 respectively. Both P.E and 6P.E of Nabil, NIC and HBL is lesser than r and r^2 value which means r value is significant and lending will move in the same direction where deposit will move.

**4.2.1.4 co-efficient of correlation between Interest Spread and Net Profit**

The following table shows the interest spread and net profit of Nabil,NIC and HBL for the period 2005-2009. To measure and evaluate the correlation between these variables, interest spread is independent variable (X) and Net profit is dependent variable(Y).

**Table 4.40**

**Interest Spread and Net Profit**

| | **Nabil** | | **NIC** | | **HBL** | |
|---|---|---|---|---|---|---|
| Year | Interest Spread | Net profit | Interest spread | Net Profit | Interest spread | Net profit |
| 2005 | 3% | 520.11 | 3.75% | 113.75 | 4.25% | 457.45 |

| 2006 | 3% | 635.26 | 3.75% | 96.58 | 4.25% | 308.27 |
| 2007 | 3.5% | 673.95 | 3.75% | 158.47 | 5.75% | 491.82 |
| 2008 | 2% | 746.46 | 3.75% | 243.05 | 4% | 635.86 |
| 2009 | 1.5% | 1031.05 | 2.65% | 317.43 | 4% | 752.83 |

Source: Annual report of Nabil,NIC and HBL

The following table describes the relationship between interest spread and net profit. The objective of computing 'r' between two variables is to justify whether interest spread is significantly correlated with net profit or not.

**Table 4.41**

**Correlation coefficient between Interests spread and net profit**

| Banks | r | r^2 | P.E | 6P.E |
| --- | --- | --- | --- | --- |
| Nabil | -0.815 | 0.665 | 0.101 | 0.6079 |
| NIC | 0.79 | 0.62 | 0.114 | 0.689 |
| HBL | -0.276 | 0.076 | 0.2794 | 1.676 |

From the above table 4.41, the coefficient of correlation between interest spread (independent) and Net profit (dependent) of Nabil, NIC and HBL has been found. Variables of NIC is positively correlated i.e. 0.79. Variables of Nabil and HBL are negatively correlated i.e. -0/815 and -0.276 respectively. Determination of correlation for banks is 0.665, 0.63 and 0.076 respectively for Nabil, NIC and HBL. 66.5%, 62% and 7.6% of the variability in dependent variable is explained by independent variables for the respective banks. Nabil banks have r value lower than both P.E and 6 P.E so there is no evidence of correlation. NIC r value is higher P.E and 6P>E it denotessignificant.HBL have r value lower than P.E and 6P.E so there is no evidence of correlation but since its r value is negative so net profit move in opposite direction due to negative correlation between the variables.

**4.3 Dominance of the Interest Income in the Total Earning of the Commercial Banks**

Interest income is still an important source of income for commercial banks. Though the function and area of commercial bank is vague and versatile, commercial banks in Nepal have not been able to explore intensely into other sources of income. There are different sources of income for commercial banks, which are categorized into following heads:

Interest Income: Income earned through disbursement of loan

Commission and discount: income earned by providing services.

Exchange Earnings: Income Earned through fluctuating in the foreign currency.

Other Income: Any sort of income that is not purely earned by the bank through its banking operations.

More banks are making effort these days to reduce dependency on interest income. Dependency on interest income has made the banks prone to higher risk as huge amount of fund of the bank is invested. Banks are risk-taking institutions but higher investment in loans doesn't always fetch fruitful return. The only break through for the bank can through the development of chain of network nationally and internationally. Banks have seen increment in commission and discount over the years but it has still maintained snail's pace. Bigger banks were seen making earnings from foreign exchange fluctuations but small banks struggles to earn because of low base of foreign currency holding and dealing. There should be good amount of fee-based income to decrease the dependency on interest income without bearing much burden bank's fund and ultimately on shareholder's equity. All these efficient effort takes time and therefore trend of inclination towards interest income is still to remain for quite a while.

The following presentation and analysis of the income of the sample banks will give us clearer picture of the current scenario of dominance of interest income.

**4.3.1. Composition of Total Income of Nabil Bank**

**Table 4.42**

**Total Income of Nabil Bank Limited**

(RS. In Million)

| Income | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| 1.Interest Income | 1068.74 | 1309.98 | 1587.75 | 1978.69 | 2798.48 |

| | | | | | |
|---|---|---|---|---|---|
| 2. Commission and discount | 128.37 | 138.29 | 150.60 | 156.23 | 179.69 |
| 3. Exchange Gain | 184.87 | 185.48 | 209.92 | 196.48 | 251.91 |
| 4. Non-Operating Income | 72.28 | 73.55 | 43.59 | 50.78 | 46.35 |
| 5. Other income | 55.91 | 82.89 | 87.57 | 97.44 | 144.16 |
| Total income | 1510.17 | 1790.2 | 2079.43 | 2479.62 | 3420.59 |

Source: Annual report of Nabil

Table 4.42 shows the total income composition of Nabil bank over 5-year period. Interest income has the dominance over all other sources of income. Interest income is in increasing trend it increases from 1068.74 million in 2005 to 2798.48 million in 2009. Commission and discount is also in increasing trend in consecutive years. Exchange gain showed fluctuating trend it increases from 184.87 million in 2005 to 209.92 million in 2007 and again decreases to 196.48 million in 2008 and again increases in 2009 and reached up to 251.91 million. Non-operating income was unpredictable. Non-operating income showed 72.28 million and 73.55 million in 2005 and 2006 respectively then it decreased to 43.59 million and further went to 50.78 million and 46.35 million in 2007, 2008 and 2009 respectively. Other income showed increasing trend with 55.91 million in 2005, 82.89 million in 2006, 87.57 million in 2007, 97.44 million in 2008 and 144, 16 million in 2009.

**Table 4.43**

**Total Income of Nabil Bank (percentage)**

| Income | 2005 | 2006 | 2007 | 2008 | 2009 | Composition |
|---|---|---|---|---|---|---|
| 1.Interest Income | 70.75% | 73.17% | 76.35% | 79.79% | 81.81% | 76.37% |
| 2. Commission and discount | 8.5% | 7.7% | 7.2% | 6.3% | 5.25% | 5% |
| 3. Exchange Gain | 12.24% | 10.36% | 10.09% | 7.9% | 7.3% | 9.57% |
| 4. Non-Operating Income | 4.7% | 2.09% | 2.09% | 2.04% | 1.3% | 2.84% |
| 5. Other income | 3.7% | 4.6% | 4.21% | 3.9% | 4.2% | 4.12% |
| Total income | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Annual report of Nabil

Table 4.43 shows the composition of total income of Nabil bank in percentage over 5 year period. The dependency on interest income was felt, each year recorded above 70% of total income.   Average interest income for 5-year period is 76.37%. Commission and discount remained below 9% of total income over the years making an average of 5%. Exchange gains average around 9.57% over the period. Non-operating income and other income contribute negligible share in total income that lie below 2.84% and 4.12% in average.

**Figure 4.18**

**Total Income Composition of Nabil Bank**

**Total Income**

- Interest Income
- Commission and discount
- Exchange gain
- Non-operating income
- other income
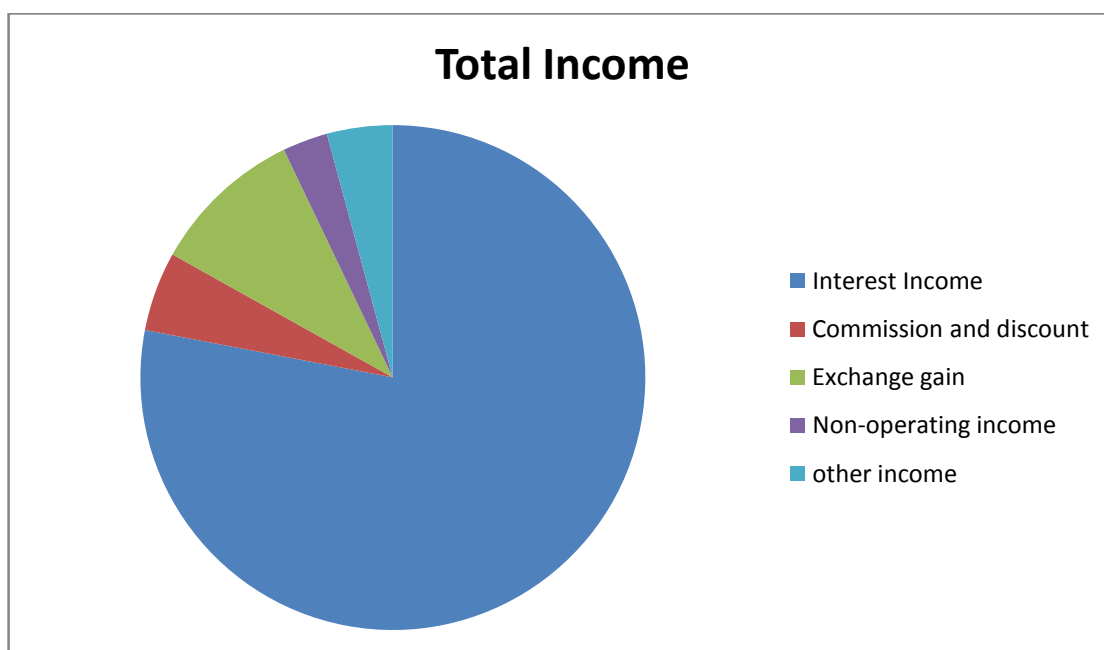
 The pie chart represents the average total income composition of Nabil Bank over five year period. More than 3/4 of the pie is occupied by interest income i.e. 76.37% of total income followed by 9.57% in exchange gain and 5% in commission and discount. Non operating income and other income contribute at an average of 2.841% and 4.125 respectively.

**4.3.2 Composition of Total Income of NIC Bank**

**Table 4.44**

**Total Income of NIC Bank Limited**

| Income | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| 1.Interest Income | 457.60 | 579.97 | 725.81 | 931.40 | 1283.52 |
| 2. Commission and discount | 27.10 | 29.44 | 36.01 | 43.37 | 62.17 |
| 3. Exchange Gain | 24.60 | 25.38 | 34.10 | 43.48 | 98.82 |
| 4. Non-Operating Income | - | - | - | 5.48 | 10.61 |
| 5. Other income | 14.54 | 30.65 | 26.55 | 48.09 | 44.02 |
| Total income | 523.84 | 665.44 | 822.47 | 1071.82 | 1499.14 |

Source: Annual report of NIC Bank

 Table 4.44 shows the composition of total income of NIC over 5 year period i.e. between 2005 and 2009. Interest income showed increasing trend with 457.60 million in 2005 579.97 million in 2006, 725.81 million in 2007, 931.40 million in 2008 and 1283.52 million in 2009. Commission and discount and exchange gain continuously increasing. Non operating income contributed nearly 5.84 million and 10.61 million in 2008 and 2009. While other in income also increased continuously from 14.54 million in 2005 to 30.65 million in 2006 and decreases to 26.55 million in 2007 and increases to 48.09 million in 2008 and again decreases to 44.02 million in 2009.

**Table 4.45**

**Total Income of NIC Bank (percentage)**

| Income | 2005 | 2006 | 2007 | 2008 | 2009 | Composition |
|---|---|---|---|---|---|---|
| 1.Interest Income | 87.35% | 87.15% | 88.24% | 86.89% | 85.61% | 87.04% |
| 2. Commission and discount | 5.7% | 4.4% | 4.3% | 4.04% | 4.14% | 4.91% |
| 3. Exchange Gain | 4.6% | 3.8% | 4.14% | 4.05% | 6.59% | 4.63% |
| 4. Non-Operating Income | - | - | - | 0.00511% | 0.0070% | 0.00242% |
| 5. Other income | 2.7% | 4.65 | 3.2% | 4.4% | 2.9% | 3.56% |
| Total income | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Annual Report of NIC Bank

Table 4.45 shows the composition of total income of NIC over 5 year period between 2005 and 2009. The dependency on interest income averaged around 87.04%. interest income contributed 87.35%, 87.15%, 88.24%, 86.89% and 85.61% respectively. Commission and discount decrease continuously from 5.7 in 2005 to 4.14 in 2009. Exchange gain increases from 4.6 in 2005 to 6.59 in 2009. Non-operating income has negligible percentage of contribution on total income. Other income shows progressive growth over the period with and average of 3.56%.

**Figure 4.19**

**Total Income Composition of NIC bank**
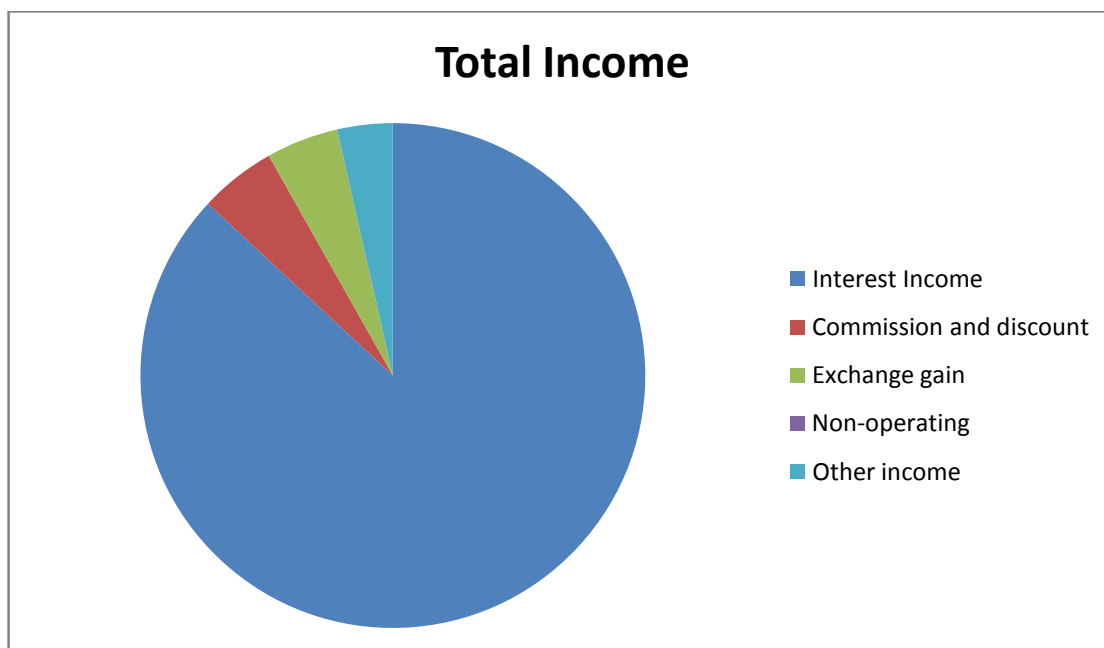
**Total Income**

The pie chart represents average total income composition of NIC bank over 5 year period. Almost 90% of pie is occupied by interest income i.e. 87.04% of total income followed by 4.91% in commission and discount and 4.63 in exchange gain. The share of non operating income and other income was 0.0024% and 3.56% respectively.

**4.3.3 Composition of Total Income of HBL Bank.**

**Table 4.46**

**Total Income of HBL**

| Income | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|
| 1.Interest Income | 1446.46 | 1626.47 | 1775.58 | 1963.64 | 2342.19 |
| 2. Commission and discount | 132.81 | 165.44 | 193.22 | 202.88 | 284.30 |
| 3. Exchange Gain | 137.30 | 198.13 | 151.63 | 192.60 | 249.98 |
| 4. Non-Operating Income | - | (2.90) | (315.89) | 42.38 | 4.99 |
| 5. Other income | 43.76 | 117.19 | 456.47 | 62.10 | 46.34 |
| Total income | 1760.33 | 2104.33 | 2261.01 | 2463.6 | 2927.8 |

Source: Annual report of HBL Bank

Table 4.46 shows the total income composition of Hbl over 5 year period. The share of interest income is dominant than other source of income. The share of interest income on total income was 1446.46 million, 1626.47 million, 1775.58 million, 1963.64 million, 2342.19 million in 2005, 2006, 2007, 2008, 2009 respectively. Commission and discount, exchange gain showed increment over the period. Non-operating income shared (2.90(, 9315.89), 42.38 and 4.99 million in 2006, 2007 2008, 2009 respectively. Other income was increasing from 2005 to 2007 and again decreases from 2008 to 2009.

**Table 4.47**

**Total Income Of HBL Bank (percentage)**

| Income | 2005 | 2006 | 2007 | 2008 | 2009 | Composition |
|---|---|---|---|---|---|---|
| 1.Interest Income | 82.16% | 77.29% | 78.53% | 79.70% | 79.99% | *79.53%* |
| 2. Commission and discount | 7.54% | 7.8% | 8.5% | 8.2% | 9.7% | *8.3%* |
| 3. Exchange Gain | 7.79% | 9.4% | 6.7% | 7.8% | 8.5% | *8.03%* |
| 4. Non-Operating Income | - | -0..13% | -1.39% | 1.7% | 0/0017% | *0/059%* |
| 5. Other income | 2.4% | 5.5% | 20.18% | 2.5% | 1.5% | *6.4%* |
| Total income | 100% | 100% | 100% | 100% | 100% | 100% |

Source: Annual report of HBl bank

Table 4.47 shows the composition of total income of HBL over 5 year period. HBL showed high dependency on interest income as interest income contributed 82.15%, 77.29%, 78.53%, 79.70%, 79.99% in 2005,2006,2007,2008 and 2009 respectively with an average of 79.53%. Commission and discount and exchange gain contributed below 8% of total income. The share of commission and discount being 7.54%.7.8%,8.5%,8.2%,9.7% in 2005,2006,2007,2008,2009 respectively. Non operating income contributed below 0.06%. Likewise other income contributed below 7% in average.

**Figure 4.20**

**Total income Composition of HBL Bank**

**Total Income**

- Interest Income
- Commission and discount
- Exchange Gain
- Non operating Income
- other Income
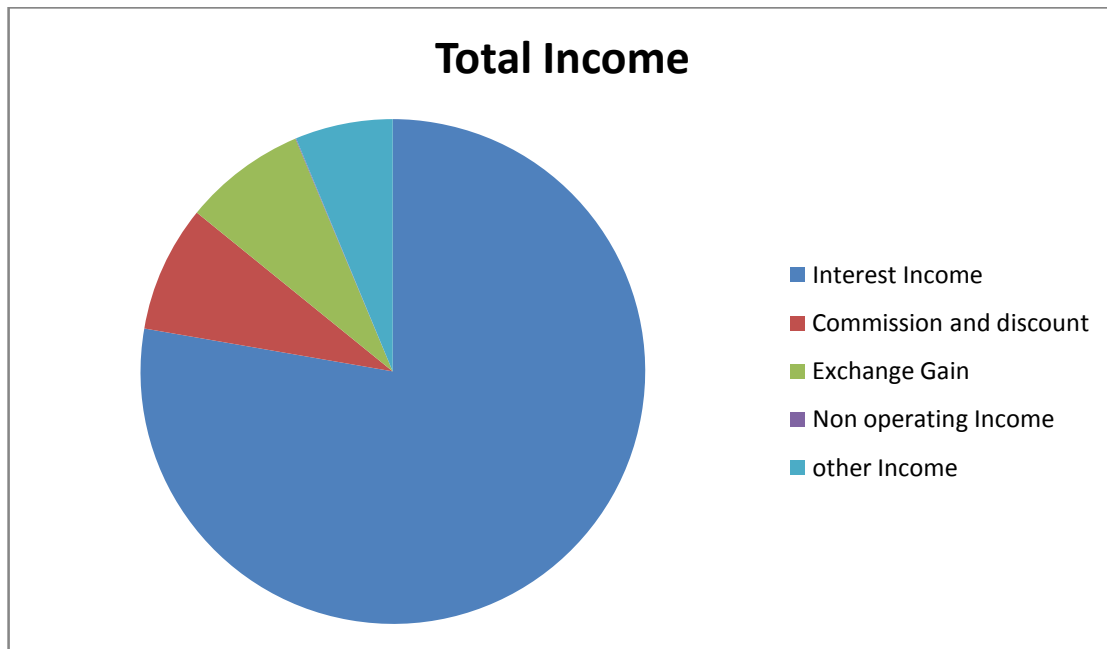
The pie chart represents average total income composition of HBL over 2005 to 2009. Interest income occupied dominant position with 79.53% of total income followed by 8.3 and 8.03% in commission and discount and exchange gain. Other income contributed at an average of 6.4%.

**4.4 Major Findings**

i) All bank showed aggressive lending policy, which stayed above 65% of total deposit, which lead them to bear higher risk. But Nabil bank prefers investing huge amount toward investment in low risk productive assets.

ii) The figure of interest earned to total assets showed all banks are behaving in similar pattern. The ratio of Nabil and HBL are decreasing while the ratio of NIC is increasing at decreasing rate. Over the years the ratio of banks lies between 5% and 7%.

iii) Effective interest rate showing earning capacity of assets showed decreasing trend. Earning capacity of the banks is declining due to the existence of huge competition but after 2008 it is in increasing.

iv) If the cost of acquiring fund for investment is high, there is less income and decreased profit for the bank. Therefore, it is better to have lower interest cost rate. The trend of decreasing the interest cost burden has hit all banks whether its old banks or new in the competitive market. However, the margin for Nabil Bank and HBL bank is lower than 3% for NIC bank the margin is above 3% which is obviously higher (risky) to stay in the market.

v) HBL bank enjoyed comparatively higher interest spread than Nabil and NIC. HBL maintained the spread above 4% and a high as 5.75%. Rate for other bank remained below 4.5% and low as 1.5%. this shows banks with strong base of deposit and

lending will lead market for many years. But it may be a problem for other banks to survive if they continued dependency on fund-based activities.

vi) Older banks are much secured in all departments of liquidity, interest rate and capital risk than newer banks. It is possible as they are less dependent on fund based activities unlike other banks, which have limited sources other than interest income.

vii) All bank shoed growth in deposit lending, interest income and interest expenses.

viii) Small banks have most of the deposit in fixed deposit account, which attract higher interest burden. Volume of non interest bearing deposit determines the market standing and trust of the customer towards the bank, smaller banks have to go a long way to achieve same fetes as that of older banks.

ix) Almost all banks are highly dependent upon the interest income as main source of the income. Banks have almost 75% to 87% of total income as interest income. Higher dependency in interest income makes the banks prone to higher risk and adds many indirect burdens. In order to survive in the competitive environment dependency on interest income must be reduced.

x) The coefficient of correlation between interest rate and deposit showed both positive and negative correlation. The positive result shows there is significant relationship between deposit interest rate and total deposit i.e. deposit of banks is increasing irrespective of decrease in interest rate. The negatively correlated and significant relation conclude that every decrease and increase in deposit interest rate leads to respective increase and decrease in total deposit.

xi) The coefficient of correlation between average lending interest rate and lending for banks were negatively correlated but showed mixtures of reaction. For some bank interest rate is important tool to lead the fund but for some irrespective of interest rate offered by them they always market for their loan facilities. It really depends on how banks market their loan products. Therefore, lending will move accordingly in similar pattern as the lending rate moves.

xii) The correlations of coefficient between deposit and lending for banks have seen significant correlation. Lending will move in the same direction where deposit will move.

xiii) The coefficient of correlation between interest spread and net profit showed mixtures of result. Nothing can be concluded for the banks Nabil and HBL. Nabil and HBL correlation has negative correlation so net profit move in opposite direction.

## CHAPTER- V

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1. Summary

Economic liberalization policy of the government has encouraged the establishment and growths of commercial banks in Nepal within short span. Commercial banks have benefited over financial institution because of its vast operational area, variety product and techno savvy technology. There is stiff competition for the commercial banks in recent year, due to which commercial banks began entering small customers who were initially customers of finance companies and co-operatives.

Deposit is the main source of commercial banks for lending, higher the deposit higher the bank ability to disburse loan. Commercial banks allocate the funds in different loans and advances and investment giving higher yield than cost of the deposit. Financial intermediaries mobilize the fund by6 collecting the scattered resources from the savers and provide the collected funds to the users. The intermediaries of financial systems sustain by lending the fund on higher interest rate and paying the deposit holder little interest. Commercial banks usually give lower interest to deposit and charge higher interest rate on disbursement of loan. It means that the commercial banks survive by making profit through a large interest spread on deposit and lending. The decision made to charge and provide interest on lending and deposit affects the profit position of the organization. Offering the higher interest rates generally attracts deposit. Similarly, high credit rates demotivate the investors as a result investment in the country shrinks down. Though there are various factors in the economy that affects the deposit amount and lending amount. Interest rate is one of the major factors that affect the performance of commercial banks.

In Nepal, due to the existence of some uncommon practices the interest rate does not seem to have general impacts on deposits and landings. Both deposit and lending rate are continuously decreasing over the year decreasing the interest spread. Though it is quite obvious for increase in demand for loan but deposits are also increasing. This has proved that Nepalese customer's don't care much about deposit rates, but are very sensitive to the lending rates.

## 5.2. Conclusion

Interest is the price one pays for utilizing certain amount of money for specified period of time. Interest rate has been the dominating factor for collection and mobilization of deposits. People prefer to deposit when interest rate is high and wish it take loan when interest rate is low. High and low the market force determines rate. Big banks in present market situation are giving lower interest rate on deposit and expect lower interest in return. On the contrary to this small and new banks are offering comparatively higher interest rates on deposits and disbursed loan at interest rate similar to well established banks. This has decreased interest rate spread of smaller banks. But still huge customer traffic is seen in big banks despite many facilities offered by smaller banks.

The overall performances of commercial banks have been sound over the years despite many changes in the interest rates. As the profit of all banks is increasing it is belived considering interest rates. As the profit of all banks is increasing it is belived considering interest rates on the higher note, impact of the interest rates have been positive. Though interest income and expenses of bigger banks are at decreasing trend but still is much higher than smaller banks, which is growing rapidly. This shows that it is not just interest rate but there are factors other than interest rates that determine the position of the banks. The decreasing deposit base and lending of bigger banks cannot be ignored; currently people are shifting to new banks and other financial institutions for earning reasonable return.

Another important reason why change in interest rate can change the profit position of the banks is its dependency on interest income. The

study showed big bank have comparatively lower dependency than smaller banks, smaller banks are prone to face higher impact of Interest rate on the 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.

We can draw following conclusion from the presentation and analysis of data:

 i) Change in the structure of interest rate can create a competitive environment among commercial banks.

 ii) The wide spread of interest rate help the commercial banks to manage the higher liquidity position and good profitability.

 iii) Higher interest in deposit and lower in lending is important to attract customer to the banks. Facilities offered by the banks also play an important role for the success of the banks.

 iv) An appropriate and realistic interest rate on lending can help in the optimum utilization of available resources.

 Interest plays a significant role in the economic development and the performance of the commercial banks. Banks willing to increase the business should present interest rate structure, which has a positive impact to all. Most of the banks in the market are able to structure interest accordingly, due to which they are enjoying increase in profit.

## 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 recommendation derived from the study is as follows:

1. A common code of conduct to fix the upper and lower limits of the interest rate is felt necessary. If it is made, it will develop a healthy competition between banks and facilitate the customers. Banks will be encouraged to run efficiently and maintain discipline during competition.

2. Expect some well-established bank many commercial banks have interest income as main source of income. The higher dependence in interest income should gradually decrease as it bears higher risk on bank's part. Banks should explore more avenues to increase commission- based income by increasing facilities and networks.

3. Banks should increase its deposit in non-interest bearing deposit than increasing deposit in higher interest bearing account. Higher deposit in non-cost account expresses positive and ever lasting image of the bank in the market.

4. Generally, there is 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 coverage. NRB should

intervene in such cases and make its liberal policy open to take control over such policy of the banks.

**5.** Commercial bank sell different deposits and loans product by offering different incentives but add hidden costs (service charges, fines, commitment fees) in it. Such costs must be told to potential customers before entering into contract.

**6**. The government and NRB should not force the commercial banks to invest more in government and other low-yielding securities. Such forced investment deprives effect on the long run. However, when commercial banks have high amount of idle fund it should be invested in government securities.

**7**. Some unorganized hands attract large numbers of depositor. Commercial banks should try to attract such deposits by developing innovative deposit account offering attractive interest rates and facilities. If commercial banks succeed in attracting such scattered savings, it will contribute to their resources then to the national development.

**8**. Commercial banks should emphasize on the repayment of loans. Borrowers should be encouraged to pay loan by offering services, facilities, fee waivers, discount etc. collection of more savings from the private sectors and its effective mobilization is possible only through good repayment of loans. Good repayment of loans ensures the strength of the commercial banks.

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Annex-1

**Coefficient of correlation between Average Deposit Interest rate and deposit of**

Nabil

| Year | Interest rate (x) | Deposit (y) | dx | dx^2 | dy | dy^2 | dxdy |
|------|------|------|------|------|------|------|------|
| 2005 | 3.3 | 14586.60 | -0.28 | 0.0784 | -10721.31 | 114946488.1 | 3001.96 |
| 2006 | 3.2 | 19347.39 | -0.38 | 0.1444 | -5960.52 | 35527798.67 | 2264.99 |
| 2007 | 2.5 | 23342.28 | -1.3 | 1.69 | -1965.63 | 3863701.29 | 2555.31 |
| 2008 | 4.1 | 31915.04 | 0.52 | 0.270 | 6607.13 | 43654166.84 | 3435.70 |
| 2009 | 4.8 | 37348.25 | 1.22 | 1.4884 | 12040.34 | 14496787.3 | 14689.21 |
| Total | 17.9 | 126539.56 | | 3.671 | | 342961942.2 | 25947.17 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$= \frac{25947.17}{\sqrt{3.671}\sqrt{242961942.2}}$$

=0.73

$r^2=(0.73)^2$

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

=0.141

6P.E=0.847

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

=1.86

NIC

| Year | Interest Rate | Deposit | dx | dx^2 | dy | dy^2 | dxdy |
|------|------|------|------|------|------|------|------|
| 2005 | 2.8 | 6241.3 | -0.55 | 0.3025 | -4506.52 | 20308722.51 | 2478.58 |
| 2006 | 3.2 | 38765 | -0.15 | 0.022 | -1982.82 | 3931575.15 | 297.42 |
| 2007 | 2.8 | 10068.23 | -0.55 | 0.3025 | -679.59 | 461842.56 | 373.77 |
| 2008 | 3.8 | 13084.68 | 0.45 | 0.202 | 2336.86 | 5460914.6 | 1051.58 |

| 2009 | 4.1 | 15579.93 | 0.75 | 0.5625 | 4832.11 | 23349287.05 | 3624.08 |
| Total | 16.78 | 53739.14 | | 1.3915 | | 53512341.87 | 7825.43 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$= \frac{7825143}{\sqrt{1.3915}\sqrt{53512341.87}}$$

=0.91

r2=0.8281

P.E=0.0519

6 P.E=0.311

t=3.82

HBL

| Year | Interest rate | Deposit | dx | dx^2 | dy | dy^2 | dxdy |
|---|---|---|---|---|---|---|---|
| 2005 | 3.25 | 24814.01 | 0.09 | 0.0081 | -4761.46 | 22671501.33 | -428.53 |
| 2006 | 2.8 | 26490.85 | -0.36 | 0.1296 | -0.3084.62 | 9514880.54 | 1110.46 |
| 2007 | 2.4 | 30048.41 | -0.76 | 0.5776 | 472.94 | 223672.24 | -359.43 |
| 2008 | 3.1 | 31842.78 | -0.06 | 0.0036 | 2267.31 | 5140694.63 | -136.03 |
| 2009 | 4.3 | 34681.34 | 1.14 | 1.299 | 5105.87 | 26069908.46 | 5820.69 |
| Total | 15.83 | 147877.39 | | 2.01 | | 63620657.2 | 6007.16 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{6007.16}{\sqrt{2.01}\sqrt{63620657.2}}$$

=0.53

$r^2$=0.2809

P.E=0.207

6P.E=1.24

t=1.082

**Correlation Coefficient between Lending Interest rate and Total Credit**

Nabil

| Year | Interest rate | Lending | dx | dx^2 | dy | dy^2 | dxdy |
|---|---|---|---|---|---|---|---|
| 2005 | 10.7 | 10946.73 | 0.16 | 0.0256 | -7030.67 | 49430320.65 | -1124.89 |
| 2006 | 10.7 | 13278.78 | 0.16 | 0.0256 | -4698.62 | 22077029.9 | -751.77 |
| 2007 | 10.2 | 15903.02 | -0.34 | 0.1156 | -2074.38 | 4303052.38 | 705.28 |
| 2008 | 10.28 | 21759.46 | -0.26 | 0.0676 | 3782 | 14303524 | -983.32 |
| 2009 | 10.85 | 27999.01 | 0.31 | 0.0961 | 10021.61 | 100432667 | 3106.69 |
| Total | 52.73 | 89887 | | 0.3305 | | 186546594 | 951.99 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{951.99}{\sqrt{0.3305}\sqrt{186546594}}$$

=0.121

r2=0.0147

PE=0.298

6PE=1.78

t=0.365

NIC

| Year | Interest rate | Lending | dx | dx^2 | dy | dy^2 | dxdy |
|------|------|------|------|------|------|------|------|
| 2005 | 10.62 | 4909.35 | 0.41 | 0.1681 | -4354.9 | 18965154.01 | -1785.50 |
| 2006 | 10.62 | 6902.12 | 0.41 | 0.1681 | -2362.13 | 5579658.13 | 968.47 |
| 2007 | 11.14 | 9128.64 | 0.93 | 0.8649 | -135.61 | 18390.07 | -126.11 |
| 2008 | 9.9 | 11465.33 | -0.31 | 0.0961 | 2201.08 | 4844753.16 | -682.33 |
| 2009 | 8.8 | 13915.85 | -1.41 | 1.98 | 4651.6 | 21637382.56 | -6558.75 |
| Total | 51.08 | 46321.29 | | 3.27 | | 51045337.93 | -10121.16 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{-10121.16}{\sqrt{3.27}\sqrt{51045337.93}}$$

= -0.787

$r^2$=0.6193

PE=0.115

6PE=0.690

t=2.2092

HBL

| Year | Interest rate | Lending | dx | dx^2 | dy | dy^2 | dxdy |
|------|------|------|------|------|------|------|------|
| 2005 | 10.27 | 13451.16 | 0.44 | 0.1936 | -5090.03 | 25908405.4 | -2239.61 |
| 2006 | 10.27 | 15761.97 | 0.44 | 0.1936 | -2779.22 | 7724063.80 | -1222.85 |
| 2007 | 9.17 | 17793.72 | -0.66 | 0.4356 | -747.47 | 558711.40 | 493.33 |
| 2008 | 9.25 | 20179.61 | -0.58 | 0.336 | 1638.42 | 2684420.09 | -950.28 |
| 2009 | 10.2 | 25519.51 | 0.37 | 0.1369 | 6978.32 | 4869650.02 | 2581.97 |
| Total | 49.16 | 92705.97 | | 1.2957 | | 85572550.71 | -1337.44 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{-1337.44}{\sqrt{1.2957}\sqrt{85572550.71}}$$

= - 0.127

$r^2 = 0.0161$

PE=0.297

6PE=1.785

t=2.2176

**Correlation Coefficient between Total deposit and Total lending**

Nabil

| Year | Deposit (x) | Lending (y) | dx | dx^2 | dy | dy^2 | dxdy |
|------|-------------|-------------|-----|------|-----|------|------|
| 2005 | 14586.60 | 10946.73 | -10721.31 | 114946488.1 | -7030.67 | 49430320.65 | 75377992.58 |
| 2006 | 19347.39 | 13278.78 | -5960.52 | 35527798.67 | -4698.62 | 22077029.9 | 28006218.48 |
| 2007 | 23342.28 | 15903.02 | -1965.63 | 3863701.29 | -2074.38 | 4303052.38 | 4077463.55 |
| 2008 | 31915.04 | 21759.46 | 6607.13 | 43654166.84 | 3782 | 14303524 | 24988165.66 |
| 2009 | 37348.25 | 27999.01 | 12040.34 | 144969787.3 | 10021.61 | 100432667 | 120663591.7 |
| Total | 126539.56 | 89887 | | 342961942.2 | | 186546594 | 253113432 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{253113432}{\sqrt{342961942.2}\sqrt{186546594}}$$

=1

$r^2 = 1$

PE=0

6PE=0

NIC

| Year | Deposit | Lending | dx | dx^2 | dy | dy^2 | dxdy |
|------|---------|---------|-----|------|-----|------|------|
| 2005 | 6241.3 | 4909.35 | -4506.52 | 20308722.51 | -4354.9 | 18965154.01 | 19625443.95 |
| 2006 | 38765 | 6902.12 | -1982.82 | 3931575.15 | -2362.13 | 5579658.13 | 4683678.60 |
| 2007 | 10068.23 | 9128.64 | -679.59 | 461842.56 | -135.61 | 18390.07 | 92159.19 |
| 2008 | 13084.68 | 11465.33 | 2336.86 | 5460914.6 | 2201.08 | 4844753.16 | 5143615.80 |
| 2009 | 15579.93 | 13915.85 | 4832.11 | 23349287.05 | 4651.6 | 21637382.56 | 22477042.88 |
| Total | 53739.14 | 46321.29 | | 53512341.87 | | 51045337.93 | 52021940.42 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{52021940.42}{7315.21 \times 7144.60}$$

=0.9953

$r^2$=0.9906

PE=0.0028

6PE=0.0170

HBL

| Year | Deposit (x) | Lending(y) | dx | dx^2 | dy | dy^2 | dxdy |
|------|-------------|------------|----------|-------------|----------|-------------|-------------|
| 2005 | 24814.01 | 13451.16 | -4761.46 | 22671501.33 | -5090.03 | 25908405.4 | 24235974.24 |
| 2006 | 26490.85 | 15761.97 | -0.3084.62 | 9514880.54 | -2779.22 | 7724063.80 | 8572837.59 |
| 2007 | 30048.41 | 17793.72 | 472.94 | 223672.24 | -747.47 | 558711.40 | -353508.46 |
| 2008 | 31842.78 | 20179.61 | 2267.31 | 5140694.63 | 1638.42 | 2684420.09 | 3714806.05 |
| 2009 | 34681.34 | 25519.51 | 5105.87 | 26069908.46 | 6978.32 | 4869650.02 | 35630394.74 |
| Total | 147877.39 | 92705.97 | | 63620657.2 | | 85572550.71 | 71800504.16 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{71800504.16}{7976.25 \times 9250.54}$$

=0.973

$r^2$=0.9467

PE=0.01612

6PE=0.0967

**Correlation coefficient between Interest Spread and net profit**

Nabil

| Year | Interest spread (x) | (y) Net profit | dx | dx^2 | dy | dy^2 | dxdy |
|------|---------------------|----------------|----|------|----|------|------|
| | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2005 | 3 | 520.11 | 0.4 | 0.16 | -201.25 | 40501.56 | -80.5 |
| 2006 | 3 | 635.26 | 0.4 | 0.16 | -86.1 | 7413.21 | -34.44 |
| 2007 | 3.5 | 673.95 | 0.9 | 0.81 | -47.41 | 2247.70 | -42.66 |
| 2008 | 2 | 746.46 | -0.6 | 0.36 | 25.1 | 630.01 | -15.06 |
| 2009 | 1.5 | 1031.05 | -1.1 | 1.21 | 309.69 | 95907.89 | -340.65 |
| Total | 13 | 3606.83 | | 2.7 | | 146700.37 | -513.31 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{-513.31}{\sqrt{2.7}\sqrt{146700.37}}$$

= -0.815

$r^2$=0.665

PE=0.101

6PE=0.6079

NIC

| Year | Interest spread (x) | Net Profit (y) | dx | dx^2 | dy | dy^2 | dxdy |
|---|---|---|---|---|---|---|---|
| 2005 | 3.75 | 113.75 | 0.22 | 0.0484 | -72.1 | 5198.41 | -15.86 |
| 2006 | 3.75 | 96.58 | 0.22 | 0.0484 | -89.27 | 7969.13 | -19.63 |
| 2007 | 3.75 | 158.47 | 0.22 | 0.0484 | -27.38 | 749.66 | -6.02 |
| 2008 | 3.75 | 243.05 | 0.22 | 0.0484 | 57.2 | 3271.84 | 12.58 |
| 2009 | 2.65 | 317.43 | -0.88 | 0.7744 | 131.58 | 17313.29 | -115.79 |
| Total | | 929.28 | | 0.968 | | 34502.33 | -144.72 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{-144.72}{\sqrt{0.968}\sqrt{34502.33}}$$

= -0.79

$r^2$=0.62

PE=0.114

6PE=0.689

HBL

| Year | Interest Spread (x) | Net profit (y) | dx | dx^2 | dy | dy^2 | dxdy |
|---|---|---|---|---|---|---|---|
| 2005 | 4.25 | 457.45 | -0.2 | 0.04 | -71.79 | 5153.80 | 14.35 |
| 2006 | 4.25 | 308.27 | -0.2 | 0.04 | -220.97 | 48827.74 | 44.19 |

| | | | | | | | |
|------|-------|--------|-------|-------|--------|-----------|---------|
| 2007 | 5.75  | 491.82 | 1.3   | 1.69  | -37.42 | 1400.25   | -48.64  |
| 2008 | 4     | 635.86 | -0.45 | 0.202 | 106.62 | 11367.82  | -47.97  |
| 2009 | 4     | 752.83 | -0.45 | 0.202 | 223.59 | 49992.48  | -100.61 |
| Total| 22.25 | 2646.23|       | 2.174 |        | 116742.09 | -138.68 |

$$r = \frac{\sum xy}{\sqrt{\sum x^2}\sqrt{\sum y^2}}$$

$$r = \frac{-138.68}{\sqrt{2.174}\sqrt{116742.09}}$$

= -0.276

$r^2$=0.076

PE=0.2794

6PE=1.676