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, 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 fully deprived of banking services.

At present there are altogether 25 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 ahead.

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 banks 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 survives in the market. The competitions among the banks have 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)

	Mid-July		
	2005	**2006**	**2007**
Nepal Rastra Bank			
Bank Rate	5.5	6.25	6.25
Refinance Rates	2.0-3.5	2.0-3.5	1.5-3.5
Government Securities			
Treasury Bills(91 days)	3.94	3.25	2.77
National Saving Certificate	6.5-13.0	6.5-8.5	6.0-8.5
Development Bonds	3.0-8.0	3.0-8.0	3.0-6.75
Inter Banking Rate	4.71	2.13	3.03
Inter Bank Rate	**4.71**	**2.13**	**3.03**
Commercial Banks			
Deposit Rates			
Saving Deposits	1.75-5.0	2.0-5.0	2.0-5.25
Time Deposits			
1 Months	1.75-3.5	1.5-3.5	1.5-6.75
3 Months	1.5-4.0	1.5-4.0	1.6-6.75
6 Months	2.5-4.5	1.75-4.5	1.75-6.75
1 Years	2.25-5.0	2.25-5.0	2.25-6.75
2 Years and above	2.5-6.05	2.5-6.4	2.75-6.75
Lending Rates			
Industry	8.25-13.5	8.0-13.5	7.0-13 .5
Agriculture	10.0-13.0	9.5-13.0	9.5-13.0
Export Bills	4.0-12.0	5.0-11.5	5-11.5
Commercial Loans	8.0-14.0	8.0-14.0	8-14
Overdrafts	5.0-14.5	6.5-14.5	6.5-14.5
Cash Reserve Ratio (CRR)			
With NRB	5	5	5
Cash in Vault	-	-	-

Source: NRB Bulletin

According to the structure of interest rate presented in table 1.1, both lending and deposit rates are declining during the period of 2005- 2007. This may be due to the decline in the interest rate on government securities. Most of the commercial bank classified their

deposits into two section- Saving Deposit and Time Deposit and offer different interest rate on them. Talking about saving deposit, the interest rate ranges from 1.75% to 5.00% in the year 2005 but this rate increase to 2% to 5.25% in the year 2007. Interest rate on time deposit shows no change in the year 2007 as compared to 2006.

For lending there is increase and decrease in some rates. Industry lending rates, agriculture lending rate and overdrafts shows a decrease of 1% in minimum rate in year 2006 from 2005. These rates remain constant for the year 2006 and 2007. Likewise there is no change in commercial loan in all three-year period.

1.3. Background of the Study

Interest is the price one pays for utilizing certain amount of money for specific time period. It is a rent for using money by the lender or, interest is the price paid to borrowed capital.

Capital in a free economy is allocated through the price system. The interest rate is the price paid to borrow capital. While in the case of equity capital investor's return come in the form of dividends and capital gains. This cost is affected by various factors. "The most fundamental thing that effect cost of money is production opportunity and time preference for consumption. The return available within the economy from investment in productive asset determines the cost of investment or borrowing. Similarly, the preference of the consumers for current consumption as opposed to saving for future consumption also determines the cost of borrowing or return on lending".

"Weston and Brigham in their 11^{th} edition has identified four fundamental factors affecting the cost of money, they are:

a. Production Opportunity
b. Time preference for consumption
c. Risk
d. Inflation

Weston and Brigham have added risk and inflation as fundamental factors to determine interest rate. Risk is the borrower's ability to repay loan. In the context of financial market, risk is the chance that financial assets will not earn the promised return. Likewise, inflation is the tendency of prices to increase over time.

Interest rate is set by the interaction of supply and demand. Interest rate at times is referred as financial oil of the economy. So, a vision on its development is of vital importance to every financial organization and its clients. Predicting the interest rate is however impossible, nevertheless identifying the driving forces behind the interest rate will help to create an image of its 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 role of commercial bank in every nation of the world is in pursuit 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 that's why commercial bank prosper in all condition. While addition of increase horizon of work area and entrance of new market , innovative product and services put the bank a step ahead of other type of banks and financial institution.

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 as 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 movements 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 to 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. The 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 relate 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

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 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 of money- the interest rate plays a vital role in the allocation of resources and in the decision making of consumers and businesses. For example, an increase in the interest rate provides additional incentives to individuals and other to postpone current consumption (save) and thereby free resources for investment. Interest arte send 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 of 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 savings are always influenced by the interest rates. 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 production process. The saving and investment in the economy, which are influenced by the interest rates, are the real economic variables. The incomes and expenditures of the variable sector of the economy result in excess savings or excess investment in each of the sectors.

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, K 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. There are different securities. Hence different rates are quoted.

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.

- High and positive rate of interest is necessary to attract the resources from the public in terms of raising prices.
- Cheap interest rate does not benefit proper section of the society for whom it is intended.
- Interest rate should change from time to time in accordance with the condition of demand and supply of capital.
- Interest rate should not be fixed at unrealistic level as its principal function is to guide investment opportunities, which are needed in the economy.

1.7. Interest Rate Strategies of Central 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 measure in the beginning or until mid 1980s was 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, administrate 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 in 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 were freed to fix any higher interest rate in their deposits. When the partial liberalization 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 force 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 31, 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 Rasta Bank issued some directives to banks 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

adjustments 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 an 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 the Problem

Recent cash crunch in the money market has caused enormous pressure on the bank and financial institution 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 spreads 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 sensitivities can provide valuable insight into the crisis.

The deregulation of interest rates and the operational flexibility given to financial institutions 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 rates will adversely affect a bank's financial condition. The immediate impact of changes in interest rates is on bank's profit by changing its spread. Due to the stiff competition among the banks to increase the volume of deposit, loans and investments it has been working under very less interest spread which is hardly able to cover total cost. This has resulted because of excessive 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 rates certainly has deep impact on the activities of the commercial banks. This study basically deals with such impacts of interest rate on the deposit mobilization, lending, investment pattern and ultimately the profitability of the company. The main effort of this study will be to answer the following queries:

- What will be the impact of increasing and decreasing interest rate on deposits, loans, investment and profitability of the company?
- Whether or not the interest rate structure effects the investment of commercial bank?
- Is interest rate main factor to attract customers to banks?
- Is there any stability in deposit mobilization policy of the bank?
- What is alternative to interest rate policy if we have to increase or decrease deposit and investment level?

1.10. Objective of the Study

The major objective of this study is to analyze the impact of interest rate on deposit mobilization, lending, investment pattern and its effect on the profitability of the bank. The specific objectives are as under:

- To study the impact of interest rates on deposit mobilization.
- To study the impact of interest spread on the profitability of bank.
- To study the dominance of interest income to total earnings of the bank.
- To test the relationship of interest rate and deposit mobilization.
- To study the impact of interest rates of loan on credit extension by the commercial banks.

1.11. Limitation of the Study

Despite every attempt to bring this research work to a full fledged and recommended version, there are still some shortcomings. To point out few, limitations are as follows:

- The major part of the data used in the report is secondary therefore conclusion may reflect manipulations of the concerned institutions.
- Performance of the commercial banks is affected by many factors, however only interest rate is considered in this study.
- Deposit, loan, investment and profit are year-end figures 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, as year-end figures are not same over the period.
- The conclusion drawn in the report is based on five-year data.

1.12. Organization of the Study

This study has been organized into five chapters. Each chapter has its own importance and deals with important aspect of the study.

Chapter -I: Introduction

It deals with the subject matter of the study consisting introduction, background of the study, statement of the problem, significance of the study, and limitation of the study.

Chapter - II: Review of Literature

It includes the discussion on the conceptual framework, review of books, previous research work, articles, publications and policy documents.

Chapter - III: Research Methodology

It deals with the hypothesis to be tested, research design, source of data, statistical tools and financial tools.

Chapter - IV: Data Presentation and Analysis

It deals with presentation and analysis of relevant data and information in line with set research methodology. It will help in bringing definite direction for drawing conclusion and recommendation.

Chapter - V: Summary, Conclusion and Recommendation

This chapter states summary, finding and highlights of the study, conclusion drawn from there of and provide recommendation from the findings of the study.

1.13. Introduction of Sample Organization Under Study

Kumari Bank Ltd.

Kumari Bank Limited, started its banking operations from Chaitra 21, 2057 B.S (April 03, 2001) with an objective of providing competitive and modern banking services in the Nepalese financial market. The bank has paid up capital of Rs. 900 million, of which 70 % is contributed from promoters and remaining from public.

Kumari Bank Ltd provides wide - range of modern banking services through 16 points of representations located in various urban and semi urban part of the country, 11 outside and 5 inside the valley. The bank is pioneer in providing some of the latest / lucrative banking services like E-Banking and SMS banking services in Nepal. The bank always focus on building sound technology driven internal system to cater the changing needs of the customers that enhance high comfort and value. the bank has been providing 365 days banking facilities, extended banking hours till 7 PM in the evening, utility bill payment services, inward and outward remittance services, and various other banking services.

Visa Electron Debit Card, which is accessible in entire VISA linked ATMs (including 14 own ATMs) and POS (Point of Sale) terminals both in Nepal and India, has also added convenience to the customers.

The bank is able to get recognition as an innovative and fast growing institution striving to enhance customer value and satisfaction by backing transparent business practice,

professional management, corporate governance and total quality management as the organizational mission.

The key focus of the bank is always center on serving unfulfilled needs of all classes of customers located in various parts of the country by offering modern and competitive banking products and services in their door step. The bank always prioritizes the priorities of the valued customers.

Laxmi Bank Ltd.

Laxmi Bank, incorporated in April 2002 as a commercial bank. The current shareholding constitutes of promoters holding 55.42 percent, Citizen Investment Trust holding 9.02 percent and the general public holding 35.56 percent. Promoters represent Nepal's leading business families with diversified business interests. The Bank's shares are listed and actively traded in the Nepalese Stock Exchange.

Laxmi Bank has grown with branches in Birgunj, Banepa, two in Pokhara, Biratnagar, Narayanghat, Pulchowk, Lalitpur, Teku, New Road, Janakpur, New Baneshwor and more recently in Damak. Following the merger with Hisef Finance Ltd., a decade old first generation finance company, its office in Hattisar, Kathmandu was converted to that of Laxmi Bank. This office was converted to a full branch and our corporate office in October 2005.

With a view to providing safe, seamless, quick and advance banking services, the bank has heavily investing in contemporary banking technologies. The Bank provides its services through a host of delivery channels including cell phone, Internet, ATM, Point of Sales (PoS) etc., in addition to a network of physical branches. Through the bank's alliance with Smart Choice Technologies (SCT), the ATM/Debit cardholder of Laxmi Bank has access to a network of ATMs, and PoS terminals located in all major urban centers of the country.

Under a professional management team, the bank has established itself as an emerging key player. Today the bank is recognized as an innovative and progressive bank geared to

providing shareholders and customers with quality earnings and value-added services. Transparency, good governance, and sound business growth are Laxmi bank's driving forces.

Nabil Bank Ltd.

Nabil Bank Limited, the first foreign joint venture bank of Nepal, started operations in July 1984. Nabil was incorporated with the objective of extending international standard modern banking services to various sectors of the society. Pursuing its objective, Nabil provides a full range of commercial banking services through its 19 points of representation across the kingdom and over 170 reputed correspondent banks across the globe.

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

Highly qualified and experienced management team manages operations of the bank including day-to-day operations and risk management. Bank is fully equipped with modern technology, which includes ATMs, credit cards, state-of-art, world-renowned software from Infosys Technologies System, Banglore, India, Internet banking system and Tele-banking system.

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 rates and its relation with the performance of the bank.

2.1.1. Interest Rates and Investment Pattern

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 resource 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 of 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 importance 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 from 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:

- High interest rate accompany high price, and low interest rate accompany low price.

- Interest rate and weighted average of past price level change are co-related with each other.
- Interest rate tends to be high when price is rising and vice-versa.
- 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 to rise further, the expected rate of inflation is added to the interest rate that would have prevailed in the absence of inflation to adjust for the decline in purchasing power represented by price increase.

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.

- It helps guarantee that current savings will flow into investment to promote economic growth.
- It rations the available supply of credit, generally providing loan able funds to those investment projects with the highest expected returns.
- It brings into balance the supply of money with the public's demand for money.
- It is also important tool of government policy to stimulate or discourage saving and investment through its influence on the volume of saving and investment. If the economy is growing too slowly and 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 & 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.

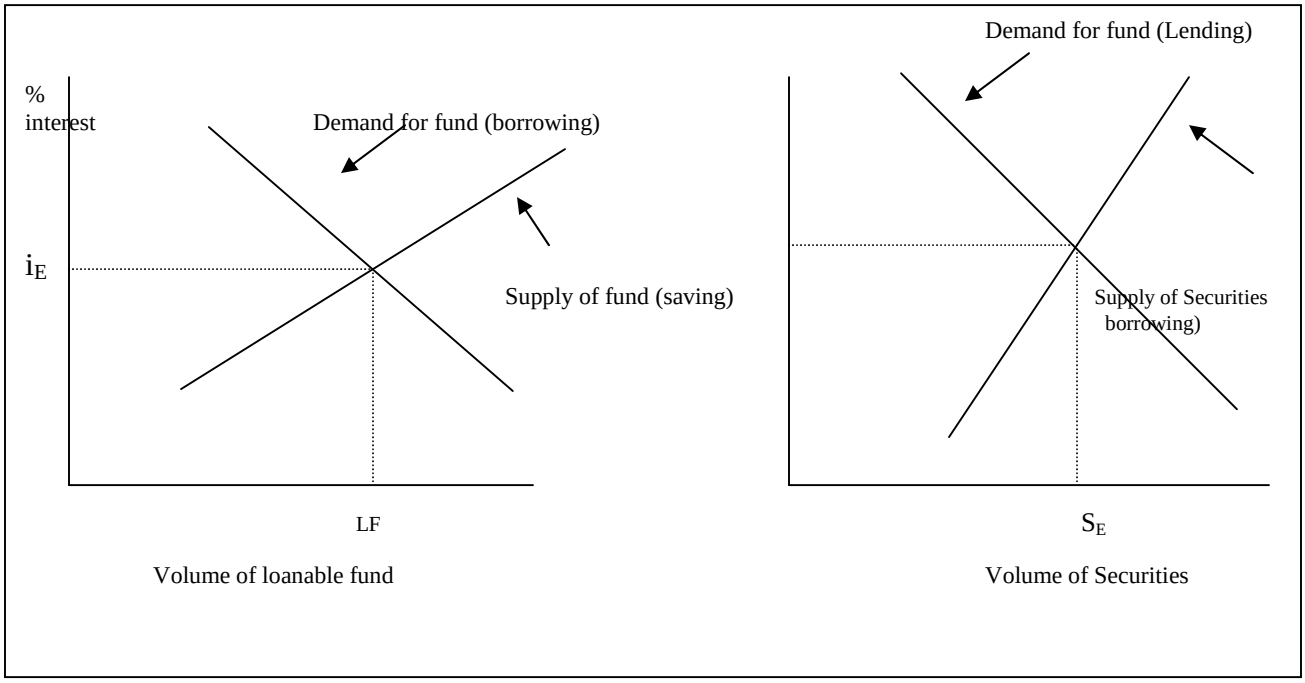
This can be cleared with the help of figure. The fig 2.1 and 2.2 show the demand and supply curves for both the rate of interest and the price of securities. The supply of loan able funds curve (representing lending) in the interest rate diagram 2.1 is analogous to the demand for securities curve (also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

Figure 2.2

Security Price Determination



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 loanable funds at a higher interest rate, while the lenders supply fewer loanable funds at a lower interest rate. The equilibrium interest rate in figure number 2.1 is determined at a point i_E where the demand for loanable funds equals the supply of loanable funds. Similarly, in figure 2.2, 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 or 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 capability 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. The compensation that investors demand to accept this risk is an additional interest spread re offered to as the call option premium.

4. Servicing Cost

Some financial claims are difficult to service. This means that the process of collecting interest and principal payments providing accurate records 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 dept 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 a 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 Economist's Dictionary of Economics. In part they define 'rate of interest' as:

The proportion of a sum of money that is paid over a specified period of time in payment for its loan. It is the price a borrower has to pay to enjoy the use of cash which he does

not own, and the return a lender enjoys for differing his consumption or parting with liquidity. The rate of interest is a price that can be analyzed in the normal framework of demand and supply.

J.M. Keynes in his book' The General Theory of Employed, Interest and Money' brought forward his view about the rate of interest. Community's liquidity preferences and quantity of money determines the level of or 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 preference 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 the interest rate as a price which is determined by market forces: The interest rate is determined by demand an 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 compensate the fact that a dollar will not buy as much a year from now as it does today. Real interest rates are interest rates 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 scare 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 the demand for supply of money cannot affect interest rate except 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 preference 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 partly because of effect 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 Effect
ii. Income Effect
iii. Expectation Effect

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

$$M_t^d = F(Y_t, I_t)\, P_t$$

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 $M^s_t = W^s_t$. The nominal interest rate is equal to the real rate of interest plus the expected rate of inflation.

The basic form is as under:

$I = r + \left(\frac{I}{p} + \frac{Dp}{Dt}\right)^{e}$

Where,

I= Nominal Interest Rate

R= Real Interest rate

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

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

So, the equilibrium form of investment and savings is $\frac{I}{P} = \frac{S}{P}$

Increase in the 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 in 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 expense 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 cases. 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 occur first 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.

Raghab D. Panta in his article "Capita Flight and Interest Rate" showed how interest rate could determine people's wish to deposit where he gets higher interest return. In his words, 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".

Devlal 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:

- The level of interest rate depends upon the internal liquidity situation of external interest rates, change in exchange rate etc. interest rate also depends upon the change in real national income, return on alternative income, number of financial institutions and the capacity of financial institutions.
- 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 institution itself depends upon the liquidity position of the bank and the amount of loan demanded.
- Low rate of interest adversely affects the saving mobilization; flexibility of capital and effective utilization of capital resources while higher interest arte affects investment negatively.
- Less spread shows the ability of financial institutions. But it is necessary to keep appropriate spread level for financial institutions to maintain them qualified in this sector.

2.2.3 Review of Unpublished Thesis

Prior to this study, there are few thesis and research papers submitted to the 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:

- 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.
- Interest rate structure has direct influence on profitability of commercial banks. Decrease in lending rate helps to increase the profitability through increasing the credit.
- Deposits are more interest rate conscious and positively co-related.
- Loans and advances of commercial banks are found to be continuously increasing with the decline in interest arte.
- Effective interest rate structure helps in proper utilization of resources as measured by loan to deposit ratio.
- Most of the banks are having similar interest rate structure, which lessens the importance of liberalization of interest rate.

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

- Most of the commercial banks contradict the general financial theories.
- The relation between amount of deposits 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.
- 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.
- Correlation between interest rate and inflation is not significant.
- Not only interest rate is responsible to shape the profitability of banks but also the operating efficiency also has major influence 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:

- 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.
- 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.
- Analysis shows that interest rates on lending are far higher than deposit rates of sample banks. The correlation coefficient between these two variables, (deposit rate and lending rate) of sample banks comes highly positive.
- The simple correlation coefficient between deposit rate and deposit amount of sample banks were highly negative. But out of them, correlation coefficient analysis of one sample bank is found to be negative. It means that in that case the theory doesn't match the analysis. So writer conclude that the result appears in that study was different than the theory.
- The correlation analysis between lending rate and lending amount of all sample banks under study comes highly negative. This relation between two variables (lending rate and lending amount) of sample banks matches with the theory 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 words is:
"There is significant relationship between deposit rate and 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 not 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:

- The liquidity position of commercial bank is satisfactory.
- The coefficient of correlation of deposit, lending and investment of commercial banks has better position.
- The coefficient of interest rates and deposits of commercial banks do not have better position.
- The trend of deposit, loan and advances and investment of commercial banks 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 their thesis in the same topic the present researcher has selected, there is fundamental difference between those and this present one. The previous researcher focused only the impact of interest rate on deposit mobilization of selected commercial bank. But this thesis tries to explain in the impact of interest rate on overall performance (i.e. deposit, lending and investment). 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 to 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 expense in the present and also visualize the future prospects. Several processes, methodologies and tools are followed to bring thorough 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 technique 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 unreachable factors.

Nepal Rastriya Bank, Kumari Bank Limited, Laxmi Bank Limited, Nabil 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 25 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 thereof of the banks are as follows:

Population

1. Nepal Bank Limited
2. Rastriya Banijya Bank Limited
3. Agriculture Development Bank Ltd.
4. Bank of Asia Ltd
5. Bank of Kathmandu
6. Citizens Bank International Ltd
7. Development Credit Bank Ltd
8. Everest Bank Ltd
9. Global Bank Ltd
10. Himalayan Bank Ltd
11. Kumari Bank Ltd
12. Laxmi Bank Ltd
13. Lumbini Bank Ltd
14. Machhachapuchhre Bank Ltd
15. Nabil Bank Ltd
16. Nepal Bangladesh Bank Ltd
17. Nepal Credit and Commercial bank Ltd
18. Nepal Investment Bank Ltd
19. Nepal Industrial and commercial Bank Ltd
20. Nepal SBI Bank Ltd
21. NMB Bank Ltd
22. Prime Commercial Bank Ltd
23. Siddhartha Bank Ltd
24. Standard Chartered Bank ltd
25. Sunrise Bank Ltd

Sample

1. Kumari Bank Ltd.
2. Laxmi Bank Ltd.
3. Nabil 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.

- Loan and Advances to Total Deposit Ratio
- Total Investment to Total Deposit Ratio
- Return on Total Deposit Ratio
- Interest Earned to Total Assets Ratio
- Net Interest Margin
- Analysis of Net Interest Income
- Analysis of effective Interest Rate (λ)
- Analysis of effective Interest Cost Rate (β)
- Rate of Return on Capital
- Analysis of Interest Rate Spread
- Risk Ratio

- Capital Risk Ratio
- Growth Ratio
- Analysis of Market Interest Rate
- Comparative Interest Rates of Commercial Banks
- Deposit Mix
- 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:

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

Correlation will help to determine the following variables:

- Coefficient of correlation between Average deposit interest rate and deposit.
- Coefficient of correlation between Average lending interest rate and total credit.
- Coefficient of correlation between Total deposit and total credit
- Coefficient of correlation between interest spread and net profit.

- **Regression Analysis**

Regression analysis measures the average relationship between two or more variables in term of original data. Regression analysis establishes average irreversible functional relationship between two variables. It helps to establish the cause and effect relationship clearly. Regression analysis predicts the value of dependent variable corresponding to a given value of independent variables.
We will be doing regression analysis of the following dependent and independent variables in our study:

Deposit collection (dependent variable) and Deposit interest rate (independent Variable).

Lending (dependent variable) and lending interest rate (independent variable).
Regression equation of Y on X is given by:

$Y= a + bx$……(i)

Where,
Y= dependent variable
X= independent variable
a= intercept of the line
b= slope of the line

The value of constant a and b can be determined by solving following normal equation (applying the least square method)

$\sum Y= na + b\sum X$…….. (ii)

$\sum XY=a\sum X+b\sum X^2$…. (iii)

Substitute the value of 'a' and 'b' in equation (i), we will get required estimated regression equation of Y on X.

- **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 test of following null hypothesis will be examined to draw the conclusion:

- Deposit interest rate does not play a significant role in deposit collection.
- Lending interest rate does not play a significant role in loan 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 =

$$\frac{\text{Rupees of interest earned}}{\text{Rupees amount of interest earning assets}} - \frac{\text{Rupees of interest paid dividend}}{\text{Rupees amount of interest costing liabilities}}$$

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 of Nepalese market can be obtained. In this chapter, the relevant data and information necessary 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, graphs, 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 4 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 the performance of any organization is analysis of its past data; this chapter focuses on the data relating to interest arte 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 a 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. This ratio can be sated as:

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

Table 4.1

Loan and Advances to Total Deposit

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	13446.9	14118.8	14586.6	19,347.40	23342.3
Loans and Advances	8267.8	8769.7	10,946.70	13,278.80	15903
Loan & advances/ Deposits	**61.48%**	**62.11%**	**75.05%**	**68.63%**	**68.13%**
Growth Rate		**1.02%**	**20.83%**	**-8.55%**	**-7.28%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	691.8	1684	3051.759	4444.351	7611.653
Loans and Advances	768.2	1734	2726.143	4280.106	6437.449
Loan & advances/ Deposits	**111.04%**	**102.97%**	**89.33%**	**96.30%**	**84.58%**
Growth Rate		**-7.26%**	**-13.24%**	**7.80%**	**-12.17%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	2513.14	4809.94	6268.95	7768.96	10557.42
Loans and Advances	2137.59	3697.98	5681.01	7007.79	9062.43
Loan & advances/ Deposits	**85.05%**	**76.88%**	**90.62%**	**90.20%**	**85.84%**
Growth Rate		**-9.6%**	**17.87%**	**-4.63%**	**-4.83%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.1 shows the loan to total deposit ratio of Nabil Bank, Laxmi Bank and Kumari Bank in 5 different years. For this study 2003 is taken as initial year and 2007 as final year. The ratio of Nabil and Kumari Banks shows they have invested comparatively high portion of their deposit funds into lending in 2005. While Laxmi Bank lent all of its deposit plus other funds to fulfill the demand of the customers in initial two year of study i.e. 111.04% and 102.97% of lending in 2003 and 2004 respectively. The ratio of Nabil shows it has invested comparatively lower portion of its deposit funds into lending than LXBL and KBL.

Figure 4.1

Loan and Advances to Total Deposit

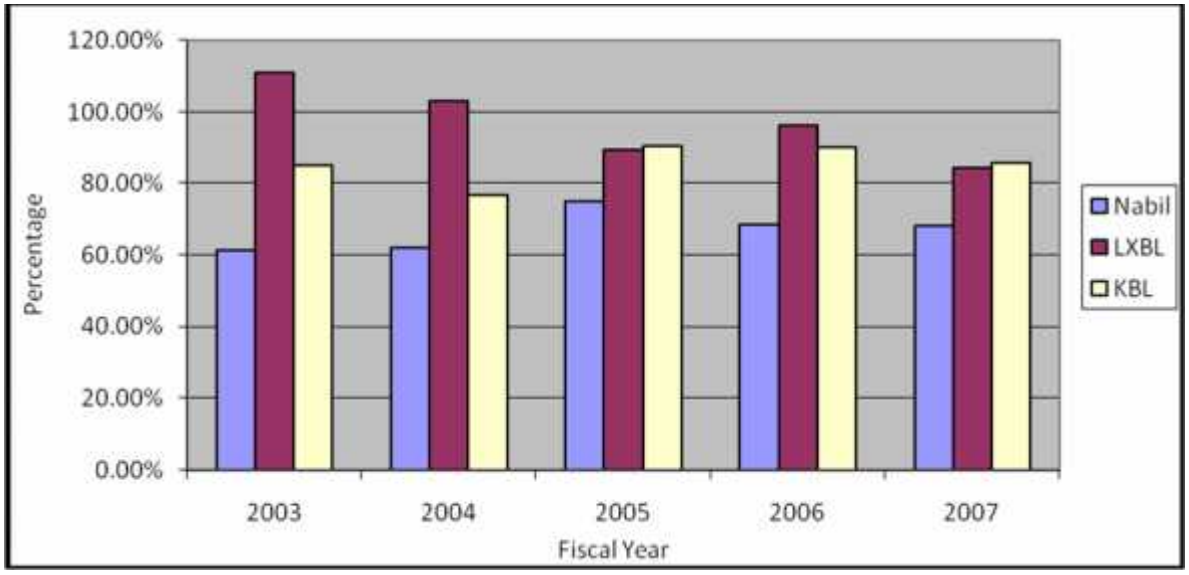


Figure 4.1 shows that old and established bank is very much conservative in lending their deposit as they stick below 70% mark. New banks have lower deposit, aggressive lending policy lending above 75% and as high as 110% the succeeding years.

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:

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

The numerator consists of investment on governing securities, investment on debentures and bonds, share in subsidiary companies, shares in other companies and other investment.

Table 4.2

Investment to Total Deposits

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	13446.9	14118.8	14586.6	19,347.40	23342.3
Investments	3687.8	3697.1	5138	7915.6	9519.8
Investments/Deposits	**27.42%**	**26.19%**	**35.22%**	**40.91%**	**40.78%**
Growth Rate		**-4.48%**	**34.47%**	**16.16%**	**-3.18%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	691.8	1684	3051.759	4444.351	7611.653
Investments	95	283.9	410.939	499.311	1437.171
Investments/Deposits	**13.73%**	**16.86%**	**13.47%**	**11.23%**	**18.88%**
Growth Rate		**22.79%**	**-20.10%**	**-16.62%**	**68.12%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	2513.14	4809.94	6268.95	7768.96	10557.42
Investments	423.15	983.50	1190.27	1394.95	2050.63
Investments/Deposits	**16.83%**	**20.44%**	**18.99%**	**17.96%**	**19.42%**
Growth Rate		**21.45%**	**-7.1%**	**-5.42%**	**8.13%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.2 shows Investment to total deposit ratio of Nabil Bank, Laxmi Bank and Kumari Bank in 5 different years. LXBL and KBL lag behind Nabil in investment. Nabil invest around 41% at the most in the year 2006. Whereas LXBL and KBL shows fluctuating investment with decreasing pattern in three preceding years. LXBL and KBL invest less than 21%. Investment of LXBL increase from 13.73% to 16.86% in 2004, decrease to

13.47% and 11.23% in 2005 and 2006 respectively and again increases to 18.88% in 2007. Kumari bank invests almost 19% in 2005, which decreases to 17.96% in 2006 and again increase to 19.42% in 2007.

Figure 4.2

Investment to Total Deposits

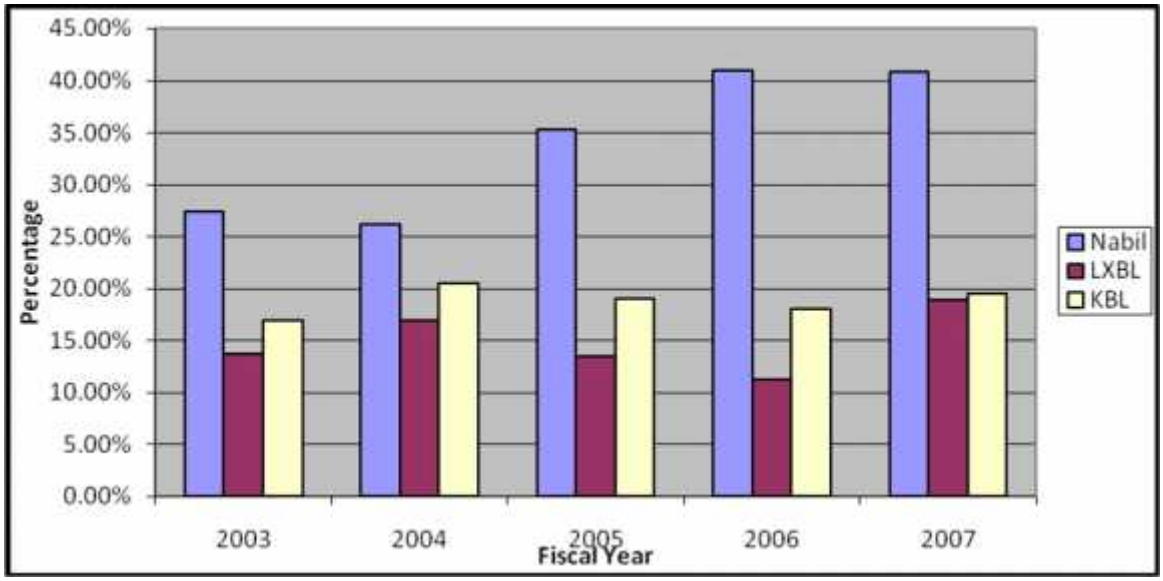


Figure 4.2 shows bigger banks do not depend on lending of its deposit; they foresee the future prospects in investments and take risk to uncertain venture that is why they invest as high as 40% in investment. However bank with small deposit prefer lower investment and lent large amount of deposit as 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 to Total Deposit Ratio can be computed by using following formula:

$$\text{Return to Total Deposit Ratio} = \frac{\text{NPAT}}{\text{Total Deposits}}$$

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	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	13446.9	14118.8	14586.6	19,347.40	23342.3
Net Profit after Tax (NPAT)	416.24	455.31	520.1	635.3	674
NPAT/Deposits	**3.10%**	**3.22%**	**3.57%**	**3.28%**	**2.89%**
Growth Rate		**3.87%**	**10.86%**	**-8.10%**	**-11.89%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	691.8	1684	3051.759	4444.351	7611.653
Net Profit after Tax (NPAT)	1.03	10.45	26.265	35.385	65.579
NPAT/Deposits	**0.15%**	**0.62%**	**8.61%**	**7.96%**	**8.62%**
Growth Rate		**31.33%**		**-7.55%**	**8.29%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	2513.14	4809.94	6268.95	7768.96	10557.42
Net Profit after Tax (NPAT)	12.47	48.69	84.2	103.67	170.26
NPAT/Deposits	**0.49%**	**1.01%**	**1.34%**	**1.33%**	**1.61%**
Growth Rate		**106.12%**	**32.67%**	**-7.46%**	**21.05%**

Source: Annual Report of Nabil, LXBL and KBL

The table 4.3 shows the return on total deposit of Nabil, Laxmi and Kumari Bank. The ratio of Nabil bank shows 'U' curve as it increased to 3.57% from 3.22% and 3.10% in 2005, 2004 and 2003 respectively followed by steady decrease to 3.28% and 2.89% in 2006 and 2007 respectively. Whereas ratio of LXBL and KBL shows zigzag curve i.e. a decline and a progressive growth in ratio. As the ratio of LXBL increase to 8.61% in 2005 from 0.62% and 0.15% in 2004 and 2003 respectively and declines to 7.96% from 8.61% in 2006 and increased to 8.62% in 2007. Ratio of KBL shows the same signal. The

ratio increase to 1.34% in 2005 from 1.01% and 0.49%, decreases from 1.34% to 1.33% in 2006 and then increases to 1.61% in the consecutive years.

Figure 4.3

Return on Total Deposit

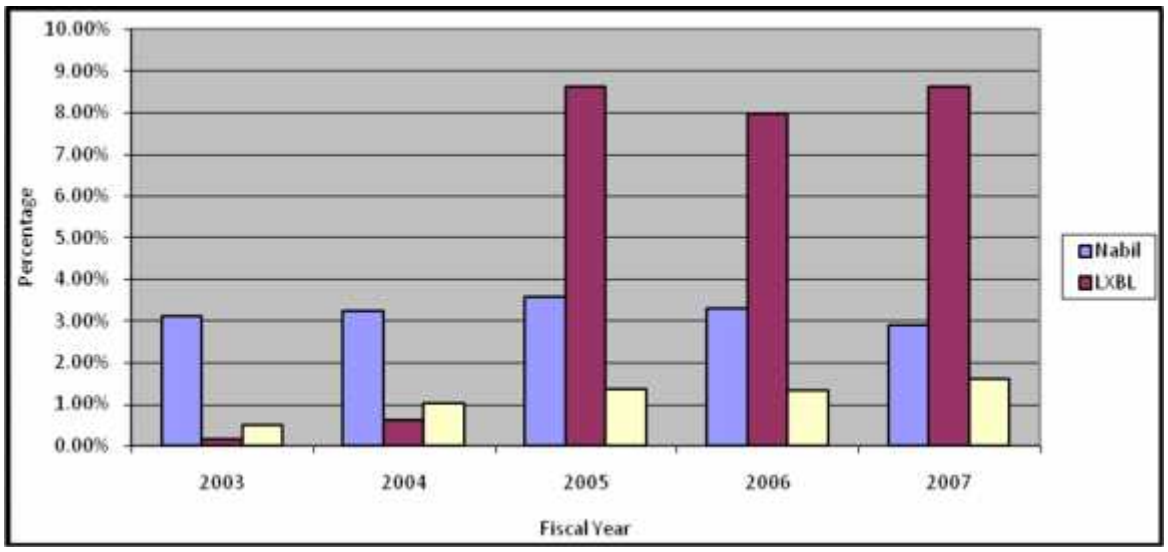


Figure 4.3 shows LXBL mobilized its deposit more effectively than Nabil and KBL from 2005 onwards. The ratio of Nabil lies between 2.89% and 3.57% while the ratio of KBL lies below 2%.

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, overdrafts 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	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Earned	1017.87	1001.62	1069	1310	1587.8
Total Assets	16562.61	16745.49	17186.33	22329.97	27253.39
Interest Earned/Total Assets	**6.15%**	**5.98%**	**6.22%**	**5.86%**	**5.82%**
Growth Rate		**-2.76%**	**4.01%**	**-5.78%**	**-0.68%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Earned	49.79	124.05	214.13	319.25	470.49
Total Assets	1096.55	2585.49	3038.17	5205.19	8582.68
Interest Earned/Total Assets	**4.54%**	**4.80%**	**7.04%**	**6.13%**	**5.48%**
Growth Rate		**5.72%**	**46.67%**	**-12.93%**	**-10.60%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Earned	185.09	310.22	499.92	605.53	791.28
Total Assets	2986.17	5494.17	7437.88	9010.27	11918.31
Interest Earned/Total Assets	**6.19%**	**5.65%**	**6.72%**	**6.72%**	**6.64%**
Growth Rate		**-8.72%**	**18.9%**	**-**	**-1.19%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.4 shows the ratio of interest earned to total deposit of Nabil, Laxmi and Kumari Bank. The data shows Nabil has earned as high as 6.22% of total asset in 2005 but showed steady decrease over the years to 5.86% and 5.82%. Similarly, Both LXBL and KBL has maintained ratio above 4.54%. KBL has impressive figure compared to the growth ratio of LXBL. LXBL has maintained the highest ratio of 7.04% in 2005, which decline at a growing rate to 6.13% and 5.48% in 2006 and 2007 respectively.

Figure 4.4

Interest Earned to Total Asset

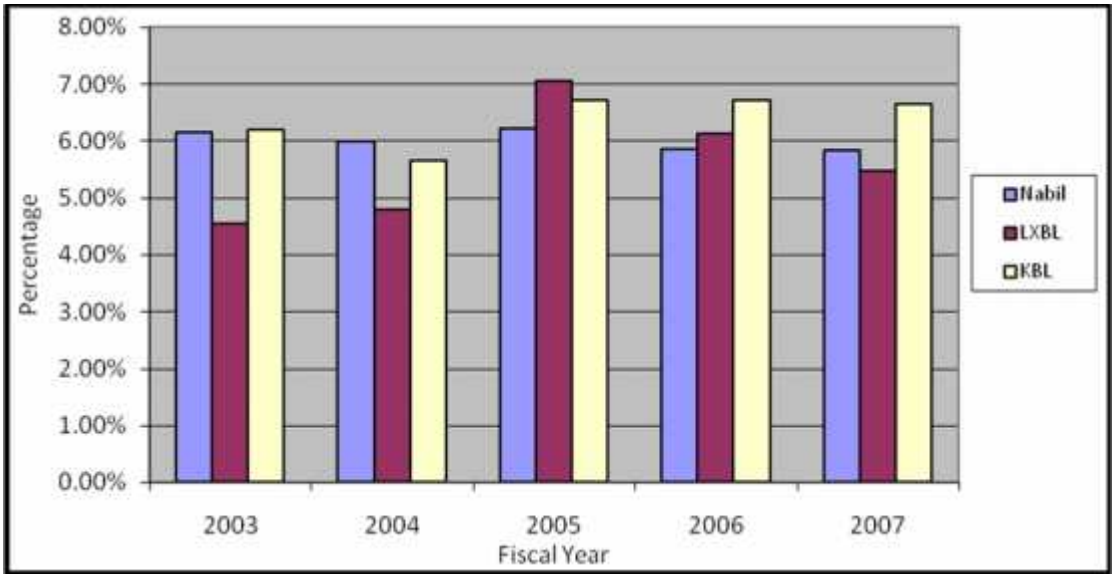


Figure 4.4 shows interest earned to total asset ratio of Nabil, LXBL and KBL. Over the year the ratio of LXBL and KBL are increasing. The ratio of banks lies between 4.5% and 7%.

4.1.5. Net Interest Margin (NIM)

NIM is the difference between interest charged on loan & 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:

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

Table 4.5

Net Interest Margin

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Income	1017.87	1001.62	1069	1310	1587.8
Interest Expenses	317.35	282.95	244	357.2	555.7
Loan and Advances	8267.8	8769.7	10,946.70	13,278.80	15903
Investment	3687.8	3697.1	5138	7915.6	9519.8
Net Interest Margin	**5.86%**	**5.76%**	**5.12%**	**4.49%**	**4.06%**
Growth Rate		**-1.70%**	**-11.11%**	**-12.30%**	**-9.57%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Income	49.79	124.05	214.13	319.25	470.49
Interest Expenses	20.1	63.18	118.44	190.58	280.27
Loan and Advances	768.2	1734	2726.143	4280.106	6437.449
Investment	95	283.9	410.939	499.311	1437.171
Net Interest Margin	**3.44%**	**3.02%**	**3.05%**	**2.69%**	**2.41%**
Growth Rate		**-12.21%**	**0.99%**	**-11.80%**	**-10.40%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Income	185.09	310.22	499.92	605.53	791.28
Interest Expenses	92.95	163.9	240.13	337.05	397.05
Loan and Advances	2137.59	3697.98	5681.01	7007.79	9062.43
Investment	423.15	983.50	1190.27	1394.95	2050.63
Net Interest Margin	**3.6%**	**3.13%**	**3.78%**	**3.19%**	**3.55%**
Growth Rate		**-13.06%**	**20.76%**	**-15.60%**	**11.28%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.5 shows the net interest margin of Nabil, Laxmi and Kumari Bank. . Nabil bank has higher interest and net interest margin than LXBL and KBL. The ratio is at decreasing trend for Nabil bank but has maintained lowest rate of 4.06% in 2007.Here the ratio of KBL is just above 3% over the five year of the study. While LXBL showed decreasing trend of margin, as it decrease from3.44% to 3.02 % in 2004, 3.05% to 2.69% in 2006 and again decreases to 2.41% in 2007.

Figure 4.5

Net Interest Margin

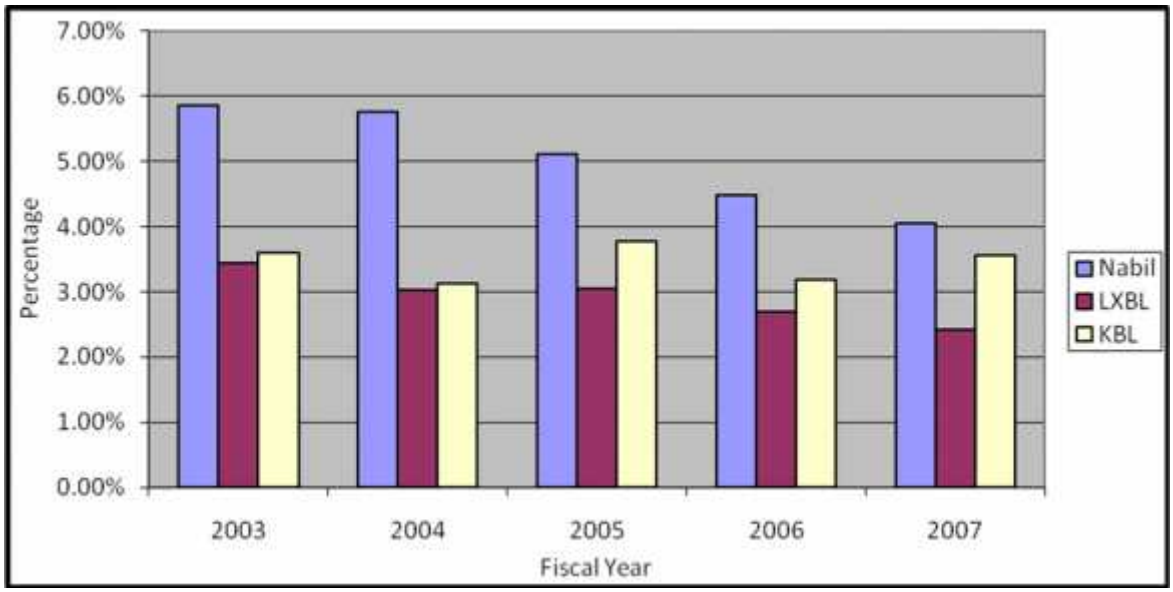


Figure 4.5 shows Net Interest Margin of Nabil, LXBL and KBL over 5-year period. Nabil bank leads all other sample banks in net interest margin. It has maintained margin about 4% over five years while margin for other bank stayed between 2.5% to 3.5%.

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 expense borne by the bank. Higher the spread between interest income and interest expense shows the effective and efficient mobilization of the deposits.

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

$$\text{Net interest Income} = \text{Interest from Assets} - \text{Interest Paid to Liabilities}$$

Table 4.6

Net Interest Income

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Income	1017.87	1001.62	1069	1310	1587.8
Interest Expenses	317.35	282.95	244	357.2	555.7
Net Interest Income (Rs.)	**700.52**	**718.67**	**825**	**952.8**	**1032.1**
Growth Rate		**2.59%**	**14.79%**	**15.49%**	**8.32%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Income	49.79	124.05	214.13	319.25	470.49
Interest Expenses	20.1	63.18	118.44	190.58	280.27
Net Interest Income (Rs.)	**29.69**	**60.87**	**95.69**	**128.67**	**190.22**
Growth Rate		**105.00%**	**57.20%**	**34.46%**	**47.80%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Income	185.09	310.22	499.92	605.53	791.28
Interest Expenses	92.95	163.9	240.13	337.05	397.05
Net Interest Income (Rs.)	**92.14**	**146.32**	**259.79**	**268.48**	**394.23**
Growth Rate		**58.8%**	**77.55%**	**3.34%**	**46.83%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.6 shows the net interest margin of Nabil, Laxmi and Kumari Bank. Nabil edge out LXBL and KBL, as it has been able to maintain figures above 700 million from 2003 to 1032 million in 2007.The net interest margin for both banks is in increasing trend. Initially in 2003 net interest income for LXBL was below 30 million in 2003 but later it increased to 128.67 million and 190.22 million in 2006 and 2007 respectively. Likewise KBL has impressive net interest income, increasing from 92.14 million in 2003 to 146.32 million in 2004, 259.79 million in 2005 to 268.48 million in 2006 and 394.23 million in 2007.

Figure 4.6

Net Interest Income

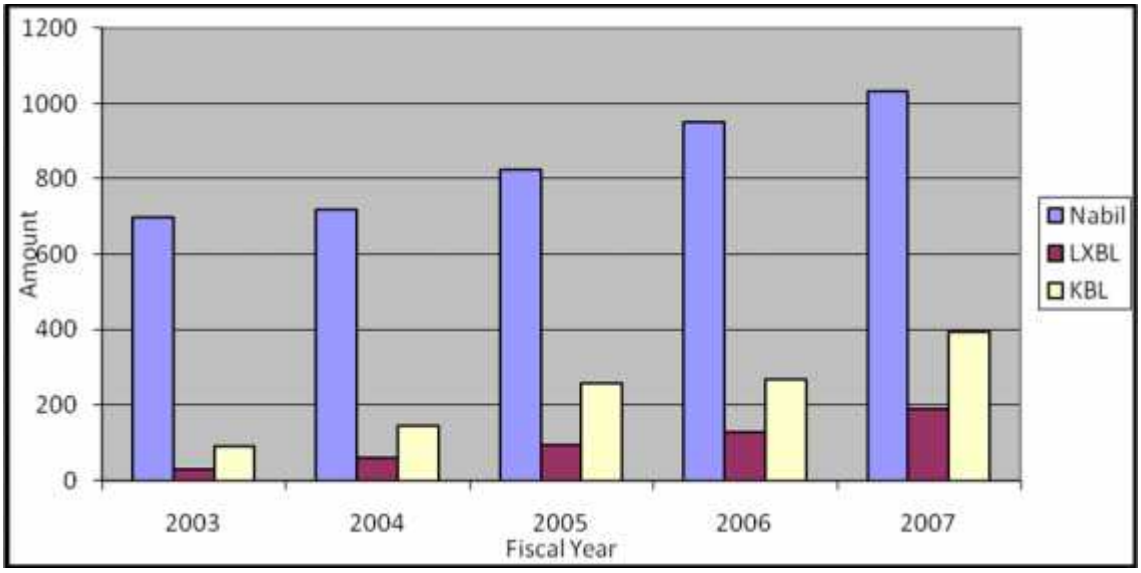


Figure 4.6 shows Net Interest Income of Nabil, LXBL and KBL over 5-year period. Nabil i.e. older bank (i.e. in term of time of establishment) has obviously higher deposit base and loan disbursement, which has been main source in building higher profit margin. While the banks like KBL and LXBL have comparatively lower interest income and expenses. However all these 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 (λ)

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:

$$\text{Effective Interest Rate}(\lambda) = \frac{\text{Interest Earned}}{\text{Interest Earning Assets}} \times 100$$

Table 4.7

Effective Interest Rate (λ)

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Earned	1047.87	1001.62	1069	1310	1587.8
Loan and Advances	8267.8	8769.7	10,946.70	13,278.80	15903
Investment	3687.8	3697.1	5138	7915.6	9519.8
Effective Interest Income Rate	**8.51%**	**8.03%**	**6.64%**	**6.18%**	**6.24%**
Growth Rate		**-5.60%**	**-17.31%**	**-6.92%**	**0.97%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Earned	49.79	124.05	214.13	319.25	470.49
Loan and Advances	768.2	1734	2726.143	4280.106	6437.449
Investment	95	283.9	410.939	499.311	1437.171
Effective Interest Income Rate	**5.77%**	**6.15%**	**6.83%**	**6.67%**	**5.97%**
Growth Rate		**6.58%**	**11.05%**	**-2.30%**	**-11.72%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Earned	185.09	310.22	499.92	605.53	791.28
Loan and Advances	2137.59	3697.98	5681.01	7007.79	9062.43
Investment	423.15	983.50	1190.27	1394.95	2050.63
Effective Interest Income Rate	**7.23%**	**6.63%**	**7.27%**	**7.21%**	**7.12%**
Growth Rate		**-8.2%**	**9.6%**	**0.08**	**-1.24%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.7 shows effective interest rate of Nabil, Laxmi and Kumari Bank. Effective interest rates of all three banks are highly volatile. The ratios of Nabil decreased from 8.51% to 8.03% in 2004, and again decrease to 6.18% in 2006 from 6.64% in 2005 and again increased to 6.24% in 2007. LXBL enjoy excessive decrease in the effective interest rate. Rate of LXBL fall from 6.83% in 2005 to 6.67% in 2006 and end up to 5.97% in 2007. Rate for KBL continuously decrease from 7.23% in 2003 to 6.63% in 2004 to 7.27% in 2005 to 7.21% in 2006 and 7.12% in 2007.

Figure 4.7

Effective Interest Rate (λ)

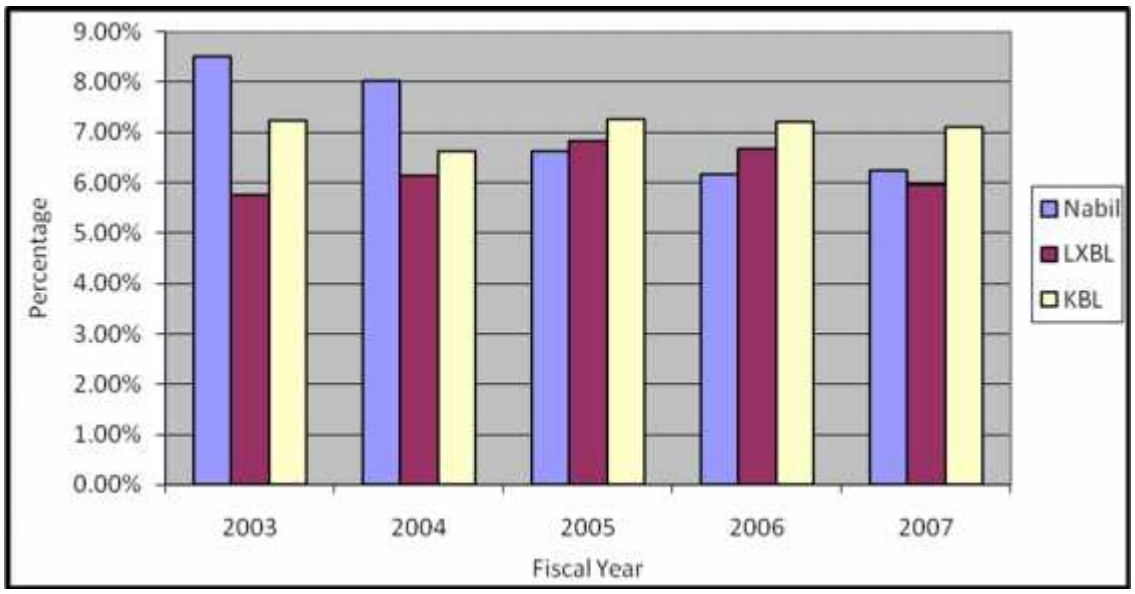


Figure 4.7 shows Effective Interest Rate (λ) of Nabil, LXBL and KBL. Effective interest income of all bank are decreasing. Earning capacity of the banks is declining due to the existence of huge competition. Still some banks are making recovery by few percentages.

4.1.8. Analysis of Effective Interest Cost Rate (β)

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:

$$\text{Effective Interest Cost } (\beta) = \frac{\text{Interest Cost}}{\text{Interest Paying Liabilities}} \times 100$$

Table 4.8

Effective Interest Cost Rate (β)

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Expenses	317.35	282.95	244	357.2	555.7
Deposits	13446.9	14118.8	14586.6	19,347.40	23342.3
Short Term Loan	961.46	229.7	17.06	173.2	882.57
Effective Interest Cost Rate	**2.20%**	**1.97%**	**1.67%**	**1.82%**	**2.29%**
Growth Rate		**-10.45%**	**-15.22%**	**8.90%**	**25.82%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Expenses	20.1	63.18	118.44	190.58	280.27
Deposits	691.8	1684	3051.759	4444.351	7611.653
Short Term Loan	70	317	18.69	29.76	-
Effective Interest Cost Rate	**2.64%**	**3.16%**	**3.85%**	**4.25%**	**3.68%**
Growth Rate		**19.69%**	**21.83%**	**10.39%**	**-13.41%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Expenses	92.95	163.9	240.13	337.05	397.05
Deposits	2513.14	4809.94	6268.95	7768.96	10557.42
Short Term Loan	-	-	401.76	251.4	212.97
Effective Interest Cost Rate	**3.7%**	**3.4%**	**3.59%**	**4.20%**	**3.68%**
Growth Rate		**-8.1%**	**5.6%**	**16.99%**	**-12.38%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.8 shows the effective interest cost rate of Nabil, Laxmi and Kumari Bank. Here Nabil banks have seen increasing trend of rates. Nabil has comparatively lower rates than LXBL and KBL. The rates of Nabil lies in 1.5% - 2.5%, while the rates of LXBL and KBL lies in 2.6% - 4%. The increasing trend in the rate should stop at this point onward to enjoy safe feel. LXBL and KBL are showing same trend i.e. increase 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 (β)

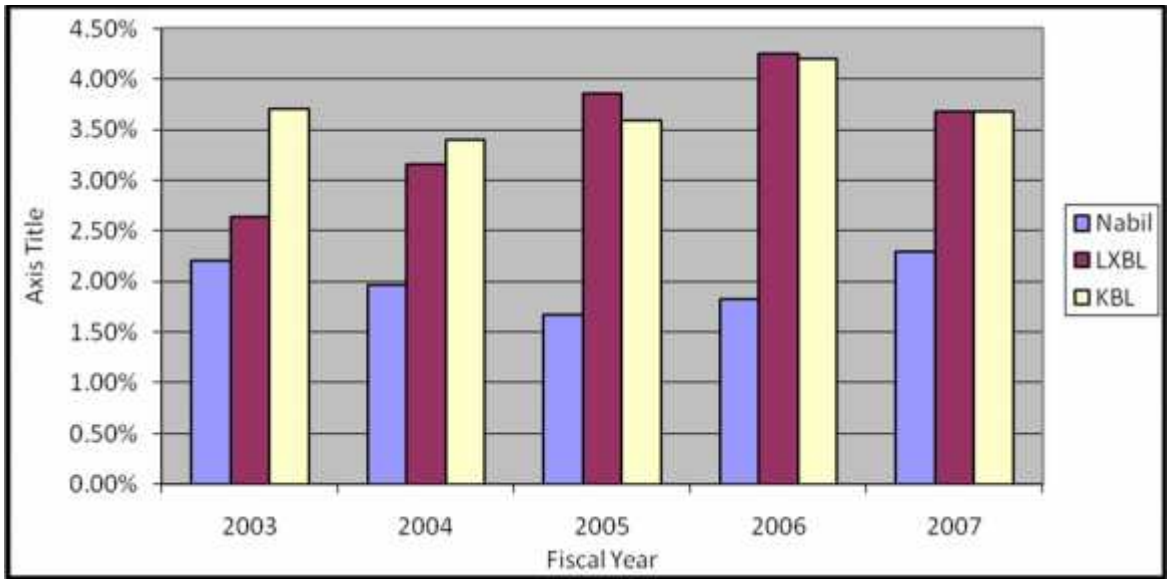


Figure 4.8 shows Effective Interest Cost Rate (β) of Nabil. LXBL and KBL over 5-year period. The trend of decreasing the interest cost burden has hit all banks in the market. However the safer margin for banks is below 2% but banks have above 3% and almost 4.25%, which is obviously higher to stay in the market.

4.1.9. Rate of Return on Capital

$$\text{In general, Return on Capital (ROC)} = \frac{\text{Net Income after Tax}}{\text{Total Capital}} \times 100$$

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 on capital, can be calculated as:

$$ROC = \lambda - (\beta - \lambda) \times \frac{(\text{Interest Paying Liabilities} - \text{Interest Earning Assets})}{\text{Interest Earning Assets}}$$

Where,

β = Effective Interest Cost Rate

λ = Effective Interest Rate

Table 4.9

Rate of Return on Capital

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Effective Interest Income Rate	8.51%	8.03%	**6.64%**	**6.18%**	**6.24%**
Effective Interest Cost Rate	2.20%	1.97%	**1.67%**	**1.82%**	**2.29%**
Interest Paying Liabilities	14408.36	14348.5	11804.88	16610.02	20829.63
Interest Earning Assets	11955.6	12466.8	7551.94	13408.99	20711.35
Return on Capital (ROC)	**4.56%**	**4.85%**	**6.53%**	**2.50%**	**0.06%**
Growth Rate		**6.36%**	**34.64%**	**-61.72%**	**-97.6%**
Laxmi Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Effective Interest Income Rate	5.77%	6.15%	**6.83%**	**6.67%**	**5.97%**
Effective Interest Cost Rate	2.64%	3.16%	**3.85%**	**4.25%**	**3.68%**
Interest Paying Liabilities	761.8	2001	2617.84	4379.5	7233.08
Interest Earning Assets	863.2	2017.9	3058.97	4704.3	7507.05
Return on Capital (ROC)	**3.81%**	**3.04%**	**-1.40%**	**-0.62%**	**-0.30%**
Growth Rate		**-20.21%**	**-146.05%**	**-55.71%**	**-51.61%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Effective Interest Income Rate	**7.23%**	**6.63%**	**7.27%**	**7.21%**	**7.12%**
Effective Interest Cost Rate	**3.7%**	**3.4%**	**3.59%**	**4.20%**	**3.68%**
Interest Paying Liabilities	2513.14	4809.94	6391.35	7669.54	10366.58
Interest Earning Assets	2560.74	4681.48	6704.63	8006.17	10360.49
Return on Capital (ROC)	**-0.20%**	**0.27%**	**-0.51%**	**-0.42%**	**0.01%**
Growth Rate		-	-	-	-

Source: Annual Report of Nabil, LXBL and KBL

Table 4.9 shows the return on Capital for Nabil, LXBL and KBL. ROC for all banks shows steady decline over the period. Nabil shows an increment of 6.53% in 2005 from 4.85% and 4.56% in 2004 and 2003 respectively, and a decline of 2.50% and 0.06% in 2006 and 2007 respectively.

Figure 4.9

Rate of Return on Capital

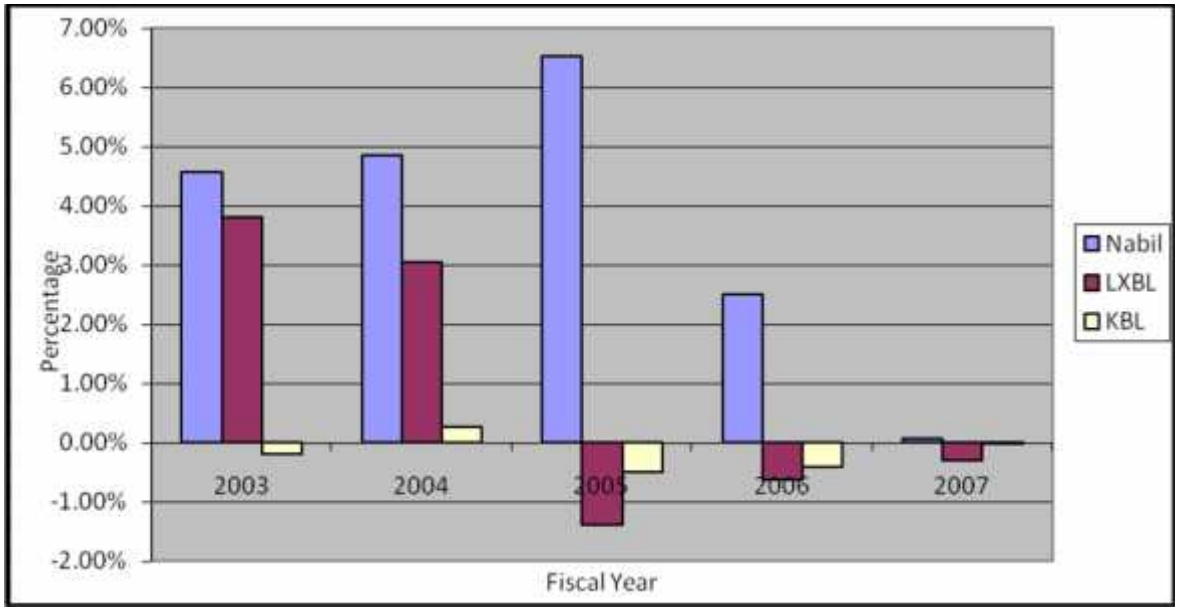


Figure 4.9 shows the Rate of Return on Capital of Nabil, LXBL and KBL over 5-year period. All banks show a decline in the interest rate over the period. While LXBL and KBL shows a negative growth rate from 2005-2007.

4.1.10. Analysis of Interest Rate Spread

Interest rate spread is difference in rate at which bank earn through investments and rate offered in attracting deposits and borrowings. In other words, rate of interest income on loans 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 Spread of Banks

Interest Rate Spread			
Year	**Nabil**	**LXBL**	**KBL**
2003	4.51%	3.03%	3.53%
2004	4.46%	2.96%	3.23%
2005	5.10%	2.47%	3.69%
2006	4.90%	2.43%	3.17%
2007	4.15%	2.39%	3.80%
Average	**4.62%**	**2.66%**	**3.48%**

Table 4.10 shows the interest spread of Nabil, LXBL and KBL. Nabil bank enjoys the highest interest spread among the sample banks. Nabil maintained the spread above 4% over five-year period and even 5.1% in 2005. Nabil bank has the highest average interest spread of five year at 4.62%. KBL maintained interest spread above 3%. On five year average LXBL has 2.66% interest spread.

Figure 4.10

Interest Spread of Banks

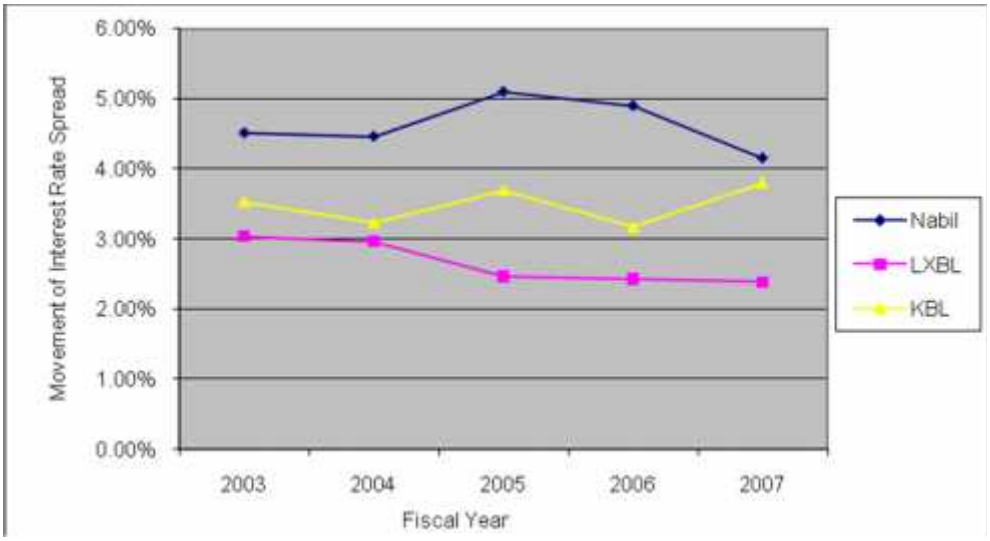


Figure 4.10 represents interest rate spread of Nabil, LXBL and KBL movement of interest rate spread over 5 year period. LXBL maintained steady line of rate. KBL showed fluctuation in rates. Nabil reached up to 5.1% in 2005.

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 is 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 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 of 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 ratio 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 the purpose of satisfying the depositor's demand for cash. Higher the ratio lower is the liquid risk. Dividing cash and bank balance calculate this ratio by total deposits. This is mentioned as:

$$\text{Liquid Risk Ratio} = \frac{\text{Total Cash \& Bank Balance}}{\text{Total Deposits}}$$

Table 4.11

Liquidity Risk Ratio

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	13446.9	14118.8	14586.6	19,347.40	23342.3
Cash and Bank Balance (CB)	4162.1	3916.9	559.38	630.23	1399.82
CB/Deposits	**30.95%**	**27.74%**	**3.83%**	**3.25%**	**5.99%**
Growth Rate		**-10.37%**	**-86.19%**	**-15.14%**	**84.70%**
Laxmi Bank limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	691.8	1684	3051.759	4444.351	7611.653
Cash and Bank Balance (CB)	265	480	469.54	225.12	469.72
CB/Deposits	**38.31%**	**28.50%**	**15.38%**	**5.06%**	**6.17%**
Growth Rate		**-25.60%**	**-46%**	**-67.10%**	**21.90%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	2513.14	4809.94	6268.95	7768.96	10557.42
Cash and Bank Balance (CB)	291.71	685.48	443.37	389.63	672.11
CB/Deposits	**11.6%**	**14.25%**	**7.07%**	**5.01%**	**6.36%**
Growth Rate		**22.84%**	**-50.38%**	**-29.13%**	**26.94%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.11 shows the liquidity risk ratio of Nabil LXBL and KBL. Liquidity risk ratio of Nabil was higher in 2003 i.e. 30.95%and 2004(27.74%) but later it decreased to 3.25% in 2006 from 3.83% in 2005 and again increased to 5.99% in 2007.LXBL and KBL have deposits base higher than cash holding. The liquidity risk ratio of both banks has similar trend i.e. higher ratio at initial year then decline in the ratio and again small rise in the ratio.

Figure 4.11

Liquidity Risk Ratio

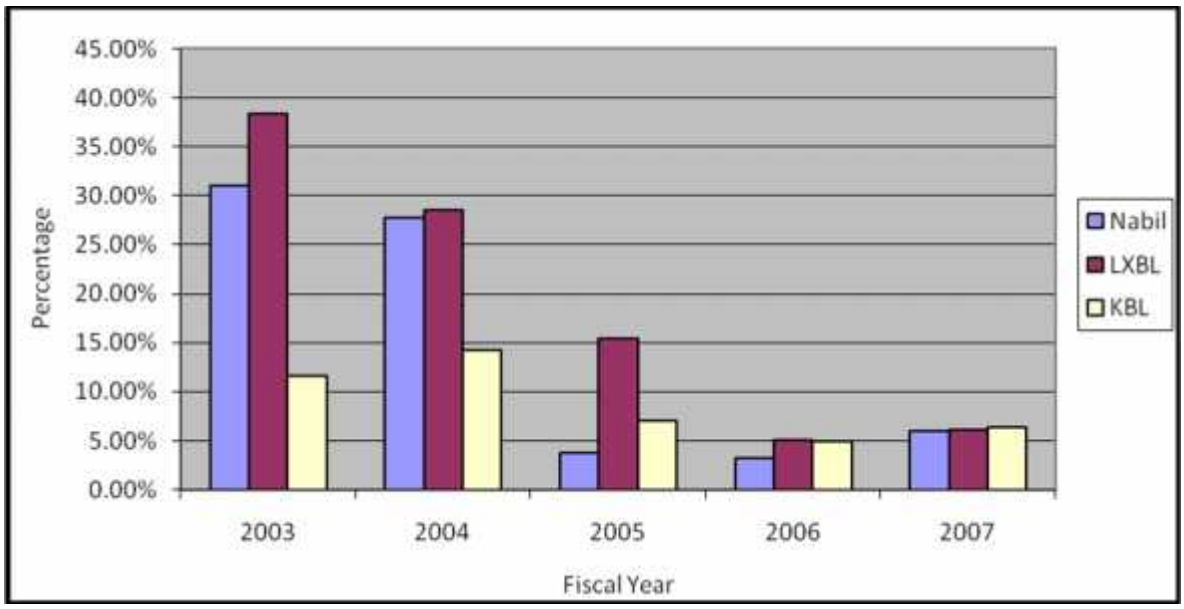


Figure 4.11 shows Liquidity Risk Ratio of Nabil, LXBL and KBL over 5 year period. There is no benchmark regarding the holding of cash to fulfill the needs of the depositors. All banks have hold above 3% of deposit and have not heard cash crisis so far by the public. It is presumed that all banks have 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 upon the interest charged by it. The possibility of loss 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 arte risk ratios suggest the banks to increase the interest rates on deposit and 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,

$$\text{Interest rate Risk Ratio} = \frac{\text{Interest Sensitive Assets}}{\text{Interest Sensitive Liabilities}}$$

Here, the numerator includes treasury bill, development bonds, investment in debenture, mutual fund and other investments and the denominator includes borrowing from NRB and other banks, total deposits excluding current deposits.

Table 4.12

Interest Rate Risk Ratio

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Sensitive Liabilities	14408.36	14348.5	11804.88	16610.02	20829.63
Interest Sensitive Assets	11955.6	12466.8	7551.94	13408.99	20711.35
Interest Rate Risk Ratio	**82.98%**	**86.89%**	**63.97%**	**80.73%**	**99.43%**
Growth Rate		**4.71%**	**-26.38%**	**26.2%**	**23.16%**
Laxmi Bank limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Sensitive Liabilities	761.8	2001	2617.84	4379.5	7233.08
Interest Sensitive Assets	863.2	2017.9	3058.97	4704.3	7507.05
Interest Rate Risk Ratio	**113.31%**	**100.84%**	**116.85%**	**107.40%**	**103.78%**
Growth Rate		**-11%**	**15.88%**	**-8.1%**	**-3.38%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Interest Sensitive Liabilities	2513.14	4809.94	6391.35	7669.54	10366.58
Interest Sensitive Assets	2560.74	4681.48	6704.63	8006.17	10360.49
Interest Rate Risk Ratio	**101.89%**	**97.32%**	**104.90%**	**104.38%**	**99.94%**
Growth Rate		**-4.48%**	**7.78%**	**-0.05%**	**-4.25%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.12 shows the interest rate risk ratio of Nabil, Laxmi and Kumari Bank. The risk ratio of Nabil increases at increasing rate at the initial decreases and again increase at

increasing rate. The risk ratio of Nabil increases from 82.98% in 2003 to 86.89% in 2004, decreases to 63.97% in 2005 and again increases to 80.73% in 2006 followed by 99.43% in 2007. The risk ratio is in increasing trend. LXBL showed decreasing trend of risk ratio i.e. 113.31% in 2003, 100.84% in 2004,116.85% in 2005, 107.4% in 2006 and 103.78% in 2007. While KBL also showed fluctuating trend of risk ratio starting from 101.89% in 2003 to 97.32% in 2004 to 104.9% in 2005 to 99.94% in 2007.

Figure 4.12

Interest Rate Risk Ratio

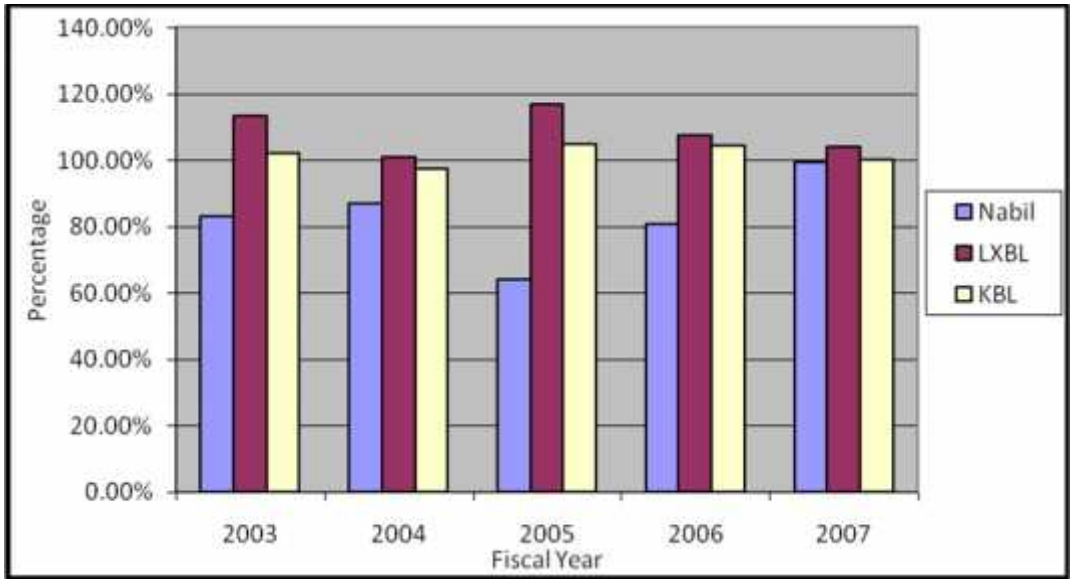


Figure 4.12 shows Interest Rate Risk Ratio of Nabil, LXBL and KBL over 5-year period. Nabil bank has comparatively lower interest rate risk ratio than other banks. This shows LXBL and KBL have higher dependency on interest income. While Nabil depend on interest rate but they are slightly better than LXBL and KBL.

4.1.11.3 Capital Risk Ratio

A bank should maintain adequate capital in relation to the nature and conditions of its assets, its deposit liabilities and the corporate responsibilities. Capital risk ratio measures bank's ability to attract deposits and inter bank funds. It also determines the level of profit, a bank can earn. If a bank chooses to take high capital risk, its ROE will be higher

and vice-versa. The capital risk of bank indicates how much asset values may decline before the position of depositors and other creditors is jeopardized.

The capital risk ratios of a bank indicate how much asset values may decline before the position of depositors and other creditors jeopardized. The capital risk is directly related to return on equity (ROE). Higher the ratio, low is the capital risk. This ratio is computed by dividing capital (paid up capital+ reserves) by risk weighted assets, mentioned as:

$$\text{Capital Risk Ratio} = \frac{\text{Capital (paid up + reserves)}}{\text{Risk Weighted Assets (RWA)}}$$

Table 4.13

Capital Risk Ratio

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Capital (Paid up+Reserve)	1314.18	1481.68	1338.65	1466.65	1475.15
Risk Weighted Assets (RWA)	14747.66	14856.28	14193.07	16976.36	19166.76
Capital Risk Ratio	**8.91%**	**9.97%**	**9.43%**	**8.64%**	**7.70%**
Growth Rate		**11.89%**	**-5.41%**	**-8.37%**	**-10.87%**
Laxmi Bank limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Capital (Paid up+Reserve)	326.82	557.06	617.43	624.58	757.48
Risk Weighted Assets (RWA)	942.92	2105.91	3085.49	4711.71	7416.11
Capital Risk Ratio	**34.66%**	**26.45%**	**20%**	**13.25%**	**10.21%**
Growth Rate		**-23.68%**	**-24.38%**	**-33.75%**	**-22.94%**
Kumari Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Capital (Paid up+Reserve)	352.49	509.74	530.08	675.81	834.86
Risk Weighted Assets (RWA)	2528.77	4449.41	6291.84	7625.05	9959.91
Capital Risk Ratio	**13.94%**	**11.46%**	**8.42%**	**8.86%**	**8.38%**
Growth Rate		**-17.79%**	**-26.52%**	**5.22%**	**-5.42%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.13 shows the Capital Risk Ratio for Nabil, Laxmi and Kumari Bank. The risk ratio for Nabil bank is in decreasing trends. The ratio of Nabil decreases from 9.97% to 9.43% to 8.64% and again to 7.7% in 2004,2005, 2006 and 2007 respectively. The ratio

for LXBL and KBL is in decreasing trend. For KBL the ratio increase from 8.42% in 2005 to 8.86% in 2006 and declines to 8.38% in 2007.

Figure 4.13

Capital Risk Ratio

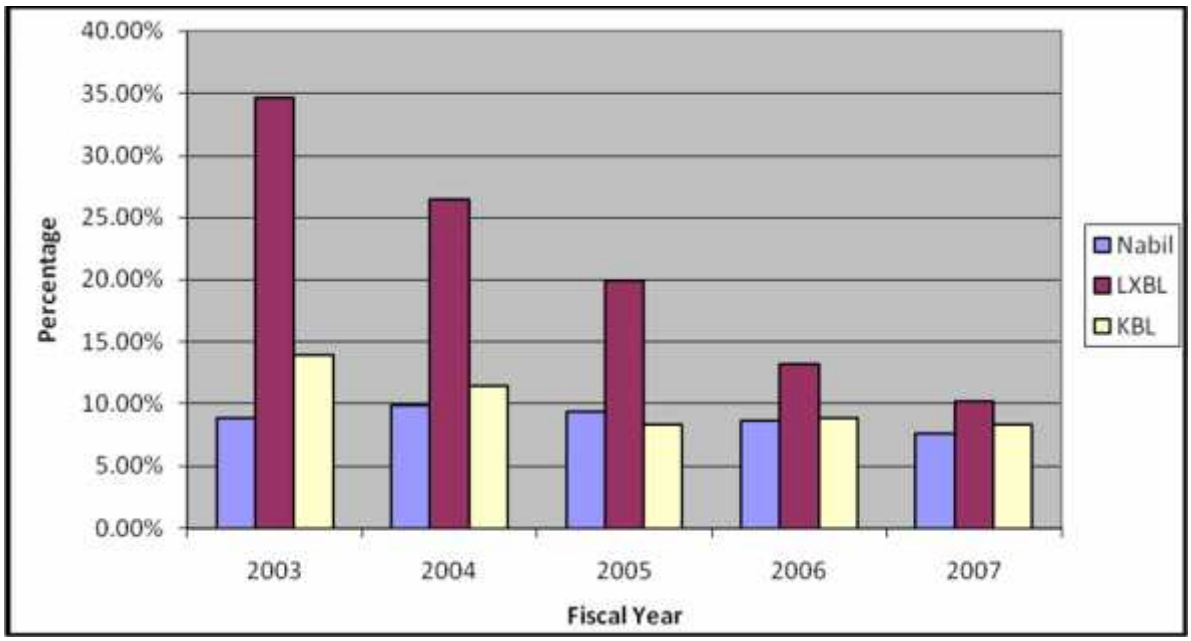


Figure 4.13 shows Capital Risk Ratio of Nabil, LXBL and KBL over 5-year period. Nabil and KBL has cooperatively lower capital risk ratio than LXBL. Nabil and KBL maintained the risk ratio below 10%. LXBL risk ratio is declining from 34% to 10.21%.

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 study period

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

4.1.12.1. Growth Ratio of Total Deposit

Table 4.14

Growth Ratio of Total Deposit

(Rs. In Million)

Total Deposit			
Year	**Nabil**	**LXBL**	**KBL**
2003	13446.9	691.8	2513.14
2004	14118.8	1684	4809.94
2005	14586.6	3051.759	6268.95
2006	19347.4	4444.351	7768.96
2007	23342.3	7611.653	10557.42
Growth Rate	**14.78%**	**82.13%**	**43.16%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.14 shows the growth ratio of total deposit of Nabil, LXBL and KBL. LXBL has higher deposit collection over five year. It maintained a growth rate of 82.13%. The deposit collection growth rate of Nabil and KBL were 14.78% and 43.16% respectively

4.1.12.2. Growth Ratio of Loan and Investment

Table 4.15

Growth Ratio of Loan and Investment

(Rs. In Million)

Total Loan and Investment			
Year	**Nabil**	**LXBL**	**KBL**
2003	11955.6	863.2	2560.74
2004	12466.8	2017.9	4681.48
2005	16084.7	3137.08	6871.28
2006	21194.4	4779.42	8402.74
2007	25422.8	7874.62	11113.06
Growth Rate	**20.76%**	**73.79%**	**44.33%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.15 shows the growth ratio of loan and investment from 2003 to 2007 of Nabil, Laxmi and Kumari Bank. The growth ratio for Nabil for the period of five year was 20.76%. Similarly ratio for KBL exceeds deposit growth rate. The growth rate for LXBL is 73.79%. Total loan and investment for Nabil reached 25.42 billion in 2007.

4.1.12.3. Growth Ratio of Interest Income

Table 4.16

Growth Ratio of Interest Income

(Rs. In Million)

Interest Income			
Year	**Nabil**	**LXBL**	**KBL**
2003	1017.87	49.79	185.09
2004	1001.62	124.05	310.22
2005	1069	214.13	499.92
2006	1310	319.25	605.53
2007	1587.8	470.49	791.28
Growth Rate	**11.75%**	**75.32%**	**43.79%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.16 shows the growth ratio of interest income of Nabil, LXBL and KBL from 2003 to 2007. LXBL and KBL maintains healthy growth rate of 75.32%and 43.79% respectively. LXBL has excessive growth in interest income of 75.32%% with Rs. 470 .49 million in 2007. While Nabil bank has the lowest growth rate of interest income of 11.75% with Rs. 1587.8 million.

4.1.12.4. Growth Ratio of Interest Expenses

Table 4.17

Growth Ratio of Interest Expenses

(Rs. In Million)

Interest Expenses			
Year	**Nabil**	**LXBL**	**KBL**
2003	317.35	20.1	92.95
2004	282.95	63.18	163.9
2005	244	118.44	240.13
2006	357.2	190.58	337.05
2007	555.7	280.27	397.23
Growth Rate	**15.03%**	**93.23%**	**43.78%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.17 shows the growth ratio of interest expenses of Nabil, LXBL and KBL from 2003 to 2007. Nabil showed healthy growth of 15.03% in interest expenses for five-year period. While interest expenses for LXBL is above 90%. KBL showed growth rate of 43.78% 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 three consecutive years.

4.1.13.1 Deposit Rate of Sample Commercial Banks

Table 4.18

Deposit Rate of Commercial Banks for 2003

Deposit Rate for 2003			
Type of Deposit	**Nabil**	**LXBL**	**KBL**
Savings	**2.75%**	**5%**	**4.75%**
Fixed Deposit			
2 Week	2%	3%	3%
1 Month	2.75%	3.5%	3.5%
3 Months	3.25%	4.5%	4%
6 Months	3.75%	5%	4.25%
1 Year	4.25%	5.5%	5.25%
2 Years	4.50%	6%	5.5%
Above 2 Years	4.75%	6%	6%

Source: NRB Bulletin

Table 4.18 shows the deposit rate of Nabil, LXBL and KBL for the year 2003. The saving rates for Nabil, LXBL and KBL were 2.75%,5% and 4.75% respectively. The fixed deposit for Nabil bank ranged between 2% to 4.75%. Similarly fixed deposit rates for LXBL ranged from 3% to 6%. And for KBL interest rate of fixed deposit lies between 3% to 6%.

Table 4.19

Deposit Rate of Commercial Banks for 2004

Deposit Rate for 2004			
Type of Deposit	**Nabil**	**LXBL**	**KBL**
Savings	**2.5%**	**4%**	**4.25%**
Fixed Deposit			
2 Week	1.75%	2.5%	2.5%
1 Month	2.25%	3%	3%
3 Months	2.75%	3.5%	3.5%
6 Months	3%	4%	3.75%
1 Year	3.5%	5%	4.5%
2 Years	3.75%	5.5%	5%
Above 2 Years	4%	6%	5.5%

Source: NRB Bulletin

Table 4.19 shows the deposit rate of Nabil, LXBL and KBL for the year 2004.The saving rate of Nabil slipped down to 2.5% from 2.75% in 2003. Likewise the saving rate of LXBL and KBL also slipped down to 4% and 4.25% in 2004 from 5% and 4.75% in 2003 respectively. The fixed deposit for Nabil bank ranged between 1.75% and 4% and that for LXBL ranged between 2.5% and 6%. Similarly KBL offered the interest rate between 2.5% and 5.5% for the same period.

Table 4.20

Deposit Rate of Commercial Banks for 2005

Deposit Rate for 2005			
Type of Deposit	**Nabil**	**LXBL**	**KBL**
Savings	2%	4.50%	4%
Fixed Deposits			
2 Weeks	2.50%	2%	2%
1 Month	3.00%	2.50%	2.25%
3 Months	3.25%	3%	2.50%
6 Months	3.50%	3.50%	3.50%
1 Year and above	4.00%	5.25%	4.75%

Source: NRB Bulletin

Table 4.20 shows the deposit rate of Nabil, LXBL and KBL for the year 2005. The saving rates for Nabil. LXBL and KBL were 2%, 4.5% and 4% respectively. The fixed deposit for Nabil bank ranged between 2.5% to 4%. Fixed deposit rates for LXBL ranged between 2% and 5.25%. And for KBL interest rate of fixed deposit lies between 2% and 4.75%. Fixed deposit rate for LXBL and KBL has slipped down this year than the previous year.

Table 4.21

Deposit Rate of Commercial Banks for 2006

Deposit Rate for 2006			
Type of Deposit	**Nabil**	**LXBL**	**KBL**
Savings	2%	4%	2.75%
Fixed Deposits			
2 Weeks	1.75%	-	2%
1 Month	2%	2.50%	2.25%
3 Months	2.75%	3%	2.50%
6 Months	3%	3.50%	2.75%
1 Year	3.50%	4.25%	3.75%
2 Years	3.75%	4.50%	4%
Above 2 Years	**4%**	**5.25%**	**4.50%**

Source: NRB Bulletin

Table 4.21 shows the deposit rate of Nabil, LXBL and KBL for the year 2006. The saving rate for Nabil remain constant as 2% as in 2005. The saving rate for LXBL and KBL slipped down to 4% and 2.75% in 2006 respectively. The fixed deposit for Nabil bank ranged from 1.75% to 4%. LXBL for the same period offered the interest rate between 2.5% and 5.25% at the most. Likewise fixed deposit for KBL ranged from 2% to 4.5%.

Table 4.22

Deposit Rate of Commercial Banks for 2007

Deposit Rate for 2007			
Type Of Deposit	**Nabil**	**LXBL**	**KBL**
Savings	2%	4%	2.75%
Fixed Deposits			
2 Weeks	3%	-	2%
1 Month	3.50%	2.50%	2.25%
3 Months	4%	3%	2.50%
6 Months	4.50%	3.50%	3.50%
1 Year	5%	4.50%	4.50%
Above 2 Years	**5.50%**	**5%**	**4.50%**

Source: NRB Bulletin

Table 4.22 shows the deposit rate of Nabil, LXBL and KBL for the year 2007. The saving rate for Nabil, LXBL and KBL remain unchanged as 2%, 4% and 2.75% respectively. The fixed deposit of Nabil ranged from 3% to 5.5%. Likewise fixed deposit for LXBL and KBL ranged from 2.5% to 5% and 2% to 4.5% respectively.

It is clear that the falling gap of interest rate for fixed deposit is large where as for savings the falling gap is small.

4.1.13.2 Lending Rate of Sample Commercial Banks

Table 4.23

Lending rate of Commercial Banks for 2003

Lending Rate for 2003			
Nature of Lending	**Nabil**	**LXBL**	**KBL**
Overdraft	N/A	12.5%	11.5%
Trust Receipt/Importer's Loan	11.50%	12%	11%
Working Capital/Demand Loan	12.50%	12%	13%
Term Loans	13.75%	13.5%	13.5%
Supply Finance	N/A	11.5%	N/A
Hire Purchase	13%	11.5%	12.5%
Home Loans	N/A	12%	N/A
Personal Loans	N/A	13.5%	N/A
Priority Sector Loans	13.5%	13.5%	13.5%
Deprived Sector Loan	9%	11.5%	8.5%
Export Loans	11.25%	11%	11.5%
Loans against Govt. Bonds	9.5%	10%	9%
Loans against Fixed Deposit	8.5%	9%	+2%
Loans against First Class Bank Guarantee	10.5%	9%	12%
Loans against Marketable Securities	N/A	11%	N/A
Other Loans	13.5%	14%	14%

Source: NRB Bulletin

Table 4.23 shows the lending rate for Nabil, LXBL and KBL for the year 2003. Lending rates of banks are very different from one another. All banks have quoted the rates as per the demand of the market. The overdraft is priced at 11.5% by KBL and LXBL enjoyed 12.5%.trust receipt, Demand Loan, Term Loan were priced 0.5% to 1.5% higher by the

bank quoted at average 11.5%, 12.5% and 13.5 % respectively. LXBL had lower hire purchase rate. All three banks had similar rate for priority sector loan. Nabil lowered its deprived sector loan by 0.5% to 2.5% than other banks. Export loan, loan against government bond and loan against first class bank guarantee had been well floated by LXBL. LXBL and KBL had same rate for other loans category at 14% followed by Nabil at 13.5%.

Table 4.24

Lending rate of Commercial Banks for 2004

Lending Rate for 2004			
Nature of Lending	**Nabil**	**LXBL**	**KBL**
Overdraft	N/A	12.5%	13%
Trust Receipt/Importer's Loan	11.5%	12%	12%
Working Capital/Demand Loan	12.5%	12%	13%
Term Loans	13%	13.5%	13.5%
Supply Finance	N/A	11.5%	N/A
Hire Purchase	10%	11.5%	12.5%
Home Loans	N/A	12%	N/A
Personal Loans	N/A	13.5%	N/A
Priority Sector Loans	13%	13%	13.5%
Deprived Sector Loan	9%	11.5%	8.5%
Export Loans	11.25%	11%	11.5%
Loans against Govt. Bonds	7%	10%	9%
Loans against Fixed Deposit	7.5%	9%	+2%
Loans against First Class Bank Guarantee	10%	9%	9.5%
Loans against Marketable Securities	N/A	11%	N/A
Other Loans	13.5%	14%	14%

Source: NRB Bulletin

Table 4.24 shows the lending rate for Nabil, LXBL and KBL for the year 2004. 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. KBL increased its rate for overdraft to 13%. Nabil bank floats most of its loan product at comparatively lower rate than other banks. Nabil bank reduced its term loan by 0.75%, hire purchase by 3% and priority loan by 0.5% in 2004. Other banks did not change the rate actively and maintained a wait and watch passive role.

Table 4.25

Lending rate of Commercial Banks for 2005

Lending Rate for 2005			
Nature of Lending	**Nabil**	**LXBL**	**KBL**
Overdraft	N/A	12.5%	12%
Trust Receipt/Importer's Loan	11%	9.55	11%
Working Capital/Demand Loan	12%	11.5%	12%
Term Loans	13%	11.5%	12%
Supply Finance	N/A	N/A	N/A
Hire Purchase	12.5%	10%	12%
Home Loans	9.25%	N/A	9.75%
Personal Loans	12%	N/A	11.5%
Priority Sector Loans	13%	13%	13%
Deprived Sector Loan	9%	11.5%	7%
Export Loans	11%	11%	10.5%
Loans against Govt. Bonds	7.5%	9%	9%
Loans against Fixed Deposit	7%	9%	+2%
Loans against First Class Bank Guarantee	9%	9%	10%
Loans against Marketable Securities	N/A	N/A	N/A
Other Loans	13%	14%	13%

Source: NRB Bulletin

Table 4.25 shows the lending rate for Nabil, LXBL and KBL for the year 2005. Lending rates of banks are different from one another. The most sellable overdrafts is priced between 12% and 12. 5%, LXBL had priced at 12.5% highest followed by KBL at 12%. Trust receipt, Demand loan, term loan are priced 0.5% to 1.5% higher than the rate quoted by the bank. KBL maintained the lowest deprived sector loan by 2% to 4.5% than other banks. Loan against fixed deposit, loan against government bond and first class bank guarantee had been well floated by Nabil bank, the price is lowered by 1% to 2% than other banks maintaining rate at an average of 8%, 8.5% and 9.25% respectively.

Table 4.26

Lending rate of Commercial Banks for 2006

Lending Rate for 2006

Nature of Lending	Nabil	LXBL	KBL
Overdraft	N/A	11%	12%
Trust Receipt/Importer's Loan	11%	9.5%	11%
Working Capital/Demand Loan	12%	11%	12%
Term Loans	13%	11%	12%
Supply Finance	N/A	N/A	N/A
Hire Purchase	12.5%	10%	12%
Home Loans	9%	N/A	9.75%
Personal Loans	12%	N/A	11.5%
Priority Sector Loans	12%	11%	13%
Deprived Sector Loan	9%	9%	7%
Export Loans	11%	10%	10.5%
Loans against Govt. Bonds	7.5%	9%	9%
Loans against Fixed Deposit	7%	9%	+2%
Loans against First Class Bank Guarantee	9%	9%	N/A
Loans against Marketable Securities	N/A	N/A	N/A
Other Loans	13%	12%	13%

Source: NRB Bulletin

Table 4.26 shows the lending rate for Nabil, LXBL and KBL for the year 2006. Lending rates of banks were determined by the demand and supply of the banks. Similar trend in decreasing rates in the demanded loan and bridging the gap by income from other loan were seen. The overdraft is priced at 10.25% by LXBL and 11.25% by KBL. All the banks have decreased some of their rate by 0.25% to 1%.

Table 4.27

Lending rate of Commercial Banks for 2007

Lending Rate for 2007			
Nature of Lending	**Nabil**	**LXBL**	**KBL**
Overdraft	12%	11%	12%
Trust Receipt/Importer's Loan	11%	9.5%	11%
Working Capital/Demand Loan	12%	11%	12%
Term Loans	13%	11%	12%
Supply Finance	N/A	N/A	N/A
Hire Purchase	12%	10%	11%
Home Loans	9%	N/A	9.75%
Personal Loans	12%	N/A	11.5%
Priority Sector Loans	12%	11%	12%
Deprived Sector Loan	9%	9%	7%
Export Loans	10.5%	11%	12%
Loans against Govt. Bonds	7.5%	9%	9%
Loans against Fixed Deposit	7%	9%	+2%
Loans against First Class Bank Guarantee	9%	9%	9.5%
Loans against Marketable Securities	N/A	N/A	N/A
Other Loans	13%	12%	13%

Source: NRB Bulletin

Table 4.27 shows the lending rate for Nabil, LXBL and KBL for the year 2007.The lending rates were very much similar to preceding year and reduced by the bank as per their need and demand of the market. KBL still enjoys the highest overdraft rate. Nabil bank decrease the hire purchase by 0.75%. Interest rate offered by all banks are almost same to that of 2006. All other banks 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 deposit accounts namely current, saving, fixed, call and other that include margin amount, hold fund etc. 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 4.28

Deposit Mix of Nabil Bank

(Rs. In Million)

Nabil Bank Limited										
Year	**2003**	**%**	**2004**	**%**	**2005**	**%**	**2006**	**%**	**2007**	**%**
Deposits	**13446.9**	**100%**	**14118.8**	**100%**	**14586.61**	**100%**	**19347.4**	**100%**	**23342.3**	**100%**
a. Current	3034	22.56%	2689	19.05%	2799.18	19.19%	2910.59	15.04%	3395.24	14.55%
b. Savings	5229.7	38.89%	5994.1	42.45%	7026.33	48.17%	8770.76	45.33%	10187.35	43.64%
c. Fixed	2252.5	16.75%	2310.6	16.37%	2078.54	14.25%	3449.09	17.83%	5435.19	23.28%
d. Call Deposits	2540.7	18.89%	2801.4	19.84%	2341.33	16.05%	3851.16	19.80%	3961.63	16.97%
e. Others	390	2.90%	323.7	2.29%	341.23	2.34%	365.8	2.00%	362.89	1.55%

Source: Annual Report of Nabil

Table 4.28 shows the deposit mix of Nabil Bank for the period of 2003 to 2007. It has high share of deposit as saving that showed continuous growth over the period. It ranged from 38.89% to 48.17% of total deposit. Deposit received from current, fixed and call came second, third in different years. Other deposit shared 1.55% to 2.90%.

Graphic Representation of Deposit Mix of Nabil

Figure 4.14

Deposit Mix of Nabil Bank

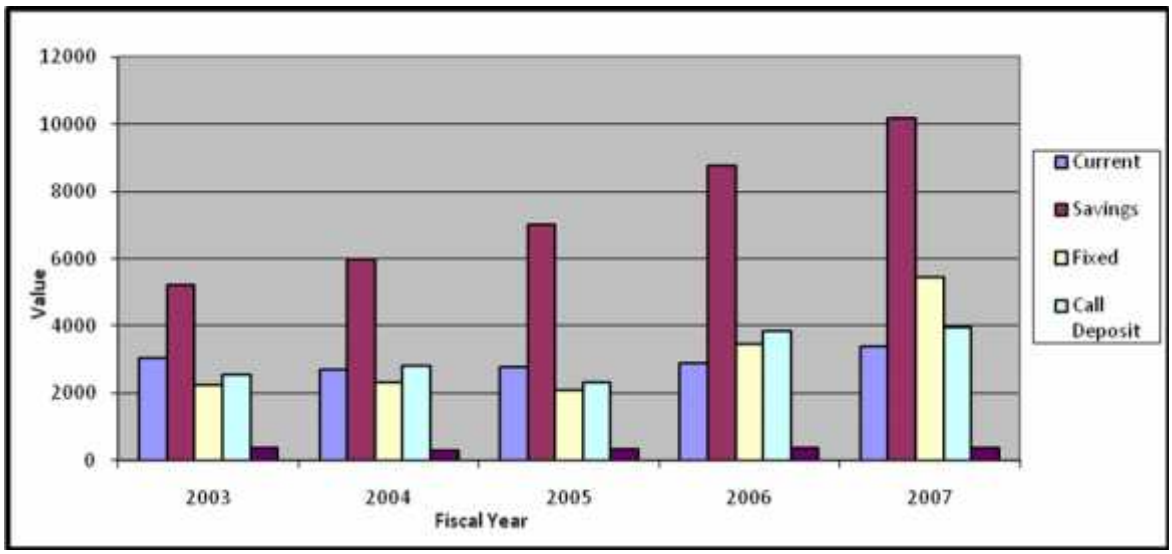


Figure 4.14 shows five-year deposit trend of different type of deposit on Nabil Bank. Savings of Nabil remained above Rs.5 Billion throughout the period. It inclined upward to Rs. 5994.1 million in 2004, Rs. 7026.33million in 2005, Rs. 8770.76 million in 2006 and Rs. 10187.35 million in 2007. Savings showed progressive increment over the period. Current deposit remained between Rs. 2500 million to Rs. 3500 million, its shows some fluctuation but Steadiness. Fixed deposit showed some calmness up to 2005 and take aggressive rise.

Table 4.29

Deposit Mix of Laxmi Bank

(Rs. In Million)

Laxmi Bank Limited										
Year	**2003**	**%**	**2004**	**%**	**2005**	**%**	**2006**	**%**	**2007**	**%**
Deposits	**691.8**	**100%**	**1684**	**100%**	**3051.76**	**100%**	**4444.35**	**100%**	**7565.54**	**100%**
a. Current	49.7	7.18%	211	12.53%	452.61	14.83%	94.61	2.13%	378.58	5%
b. Savings	98.5	14.24%	185.5	11.02%	446.71	14.64%	1000.06	22.50%	1868.38	24.69%
c. Fixed	288.6	41.72%	1082.9	64.31%	1786.38	58.54%	2658.18	59.82%	4245.03	56.11%
d. Call Deposits	247.2	35.73%	187.8	11.15%	339.56	11.13%	650.46	14.63%	947.27	12.53%
e. Others	7.8	1.13%	16.8	1%	26.5	0.86%	41.04	0.92%	126.28	1.67%

Source: Annual Report of LXBL

Table 4.29 shows the deposit mix of LXBL for the period of 2003 to 2007. It has high share of deposit as fixed deposit that showed continuous fluctuation over the period. It ranged from 41.72% to 64.31%. Savings and deposit received from call came second and third, averaging 17.42% and 17% respectively in five-year period. Both account showed steady rise in the collection of deposit over the years. Current account contributes below 15% of the total over the year with 2.13% as the least. Other deposit gave insignificant contribution to total deposit

Graphic Representation of Deposit Mix of LXBL

Figure 4.15

Deposit Mix of LXBL

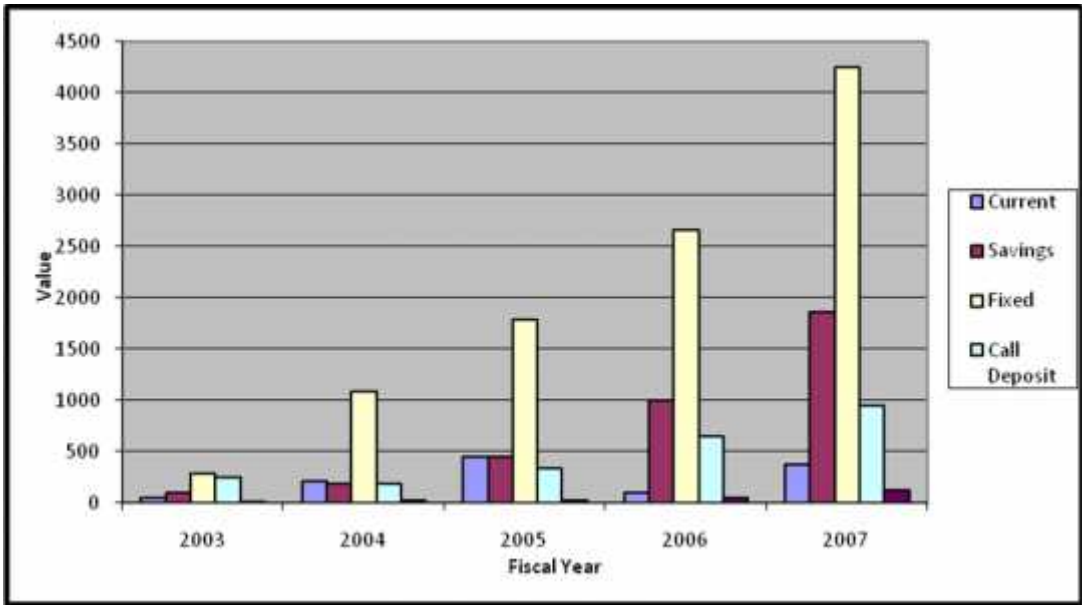


Figure 4.15 shows five-year deposit mix of LXBL between 2003 and 2007. Fixed deposit increase at increasing rate over the period starting with Rs. 288.6 million in 2003 and reaching up to Rs. 4245.03 million in 2007. Savings is also rising at a continuous basis.

Table 4.30

Deposit Mix of Kumari Bank

(Rs. In Million)

Kumari Bank Limited										
Year	**2003**	**%**	**2004**	**%**	**2005**	**%**	**2006**	**%**	**2007**	**%**
Deposits	**2513.14**	**100%**	**4809.94**	**100%**	**6268.95**	**100%**	**7768.95**	**100%**	**10557.42**	**100%**
a. Current	135.08	5.37%	250.8	5.21%	279.36	4.45%	350.82	4.50%	403.8	3.82%
b. Savings	461.94	18.38%	910	18.92%	1515.57	24.18%	2317.84	29.84%	4461.69	42.26%
c. Fixed	795.40	31.65%	1290.74	26.83%	2302.08	36.73%	3162.83	40.71%	2776.48	26.30%
d. Call Deposits	1093.35	43.51%	2293.9	47.69%	2102.83	33.54%	1880.73	24.22%	2827.7	26.78%
e. Others	27.37	1.09%	61.5	1.28%	69.09	1.10%	56.72	0.73%	87.73	0.80%

Source: Annual Report of KBL

Table 4.30 shows the deposit mix of KBL for the period of 2003 to 2007. It has high share of deposit as savings, fixed and call. Deposit received from call ranged from 24.22% to 43.51%. Savings range from 18.38% to 42.26%. Likewise fixed deposit contributes31.65% in 2003, 47.69% in 2004, 36.73% in 2005, 40.71% in 2006 and 26.3% in 2007. Current account remains within 3.5% to 5.37%. And other deposit remains below 1.5% and in decreasing trend.

Graphic Representation of Deposit Mix of KBL

Figure 4.16

Deposit Mix of KBL

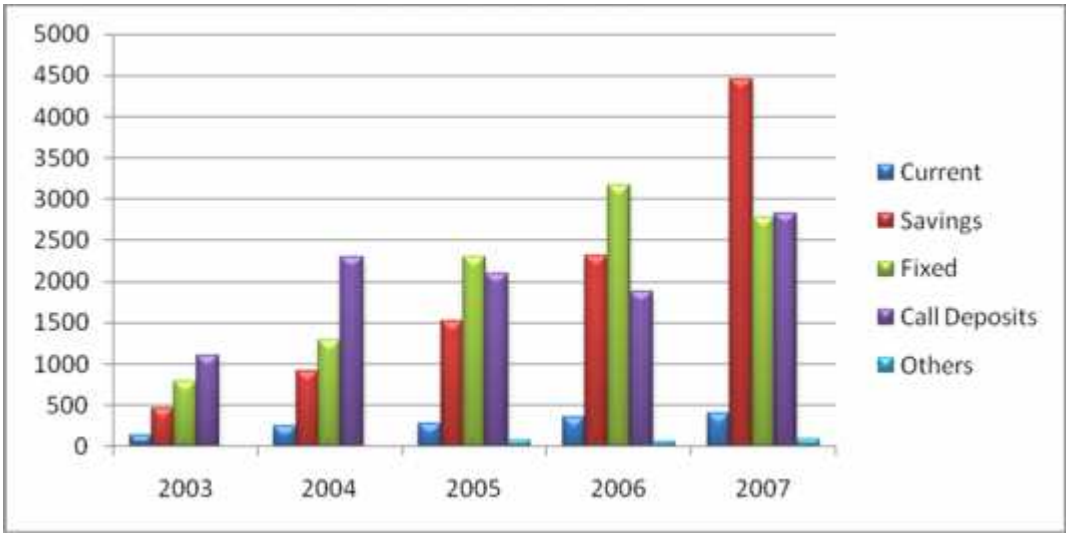


Figure 4.16 shows five-year deposit mix of KBL between 2003 and 2007. Fixed deposit, call deposit and savings have some recommendable contribution in total deposit mix of KBL. Savings is in increasing trend, call deposit and fixed deposit shows some fluctuation over the period.

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 4.31

Fixed Deposit to Total Deposit

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	13446.9	14118.8	14586.61	19347.4	23342.3
Fixed Deposit (FD)	2252.5	2310.6	2078.54	3449.09	5435.19
FD/Total Deposit	**16.75%**	**16.37%**	**14.24%**	**17.83%**	**23.28%**
Growth Rate		**-2.26%**	**-0.79%**	**25.21%**	**30.56%**
Laxmi Bank					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	691.8	1684	3051.759	4444.35	7565.54
Fixed Deposit (FD)	288.6	1082.9	1786.38	2658.18	4245.03
FD/Total Deposit	**41.72%**	**64.31%**	**58.54%**	**59.81%**	**56.11%**
Growth Rate		**54.15%**	**-8.90%**	**2.17%**	**-6.19%**
Kumari Bank					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	2513.14	4809.94	6268.95	7768.95	10557.42
Fixed Deposit (FD)	795.40	1290.74	2302.08	3162.83	2776.48
FD/Total Deposit	**31.65%**	**26.83%**	**36.72%**	**40.71%**	**26.30%**
Growth Rate		**-15.22%**	**36.86%**	**10.86%**	**-35.39%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.31 shows fixed deposit to total deposit of Nabil LXBL and KBL. Nabil bank has lower share of fixed deposit. But still fixed deposit for Nabil is in increasing trend. LXBL has higher share of fixed deposit in total deposit. For KBL the ratio increased to 40.71% in 2006 from 36.72% in 2005 and again decreased to 26.3% in 2007.

Figure 4.17

Fixed Deposit to Total Deposit

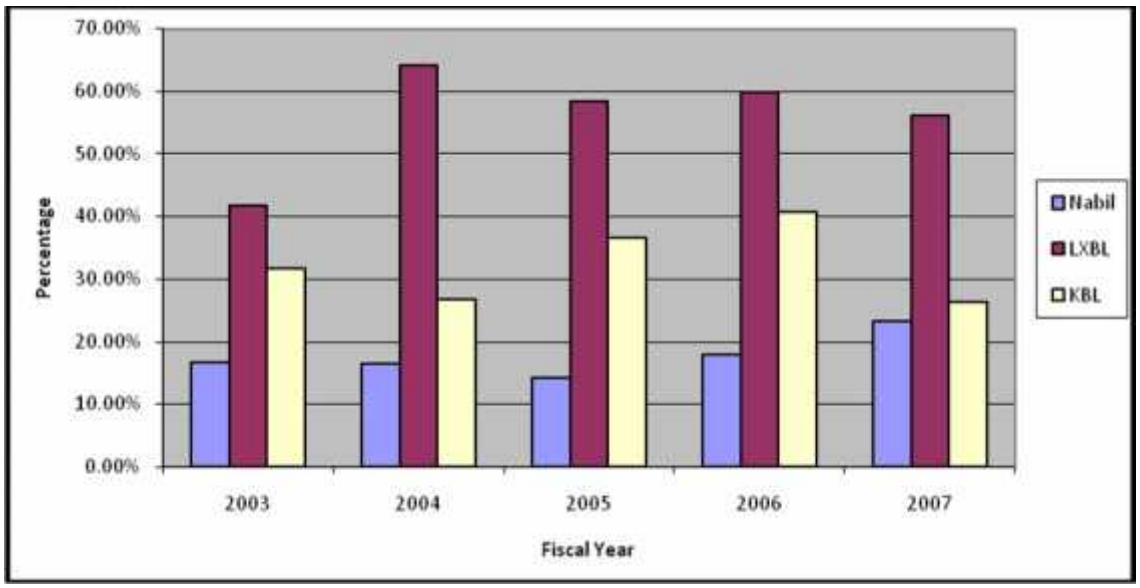


Figure 4.17 shows Fixed Deposit to Total Deposit of Nabil, LXBL and KBL over 5-year period. LXBL has higher share of fixed deposit in total deposit ranging between 41.72% and 64.31%. The ratio of Nabil is in increasing trend.

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.

$$\text{Interest Bearing Deposit to Total Deposit} = \frac{\text{Interest bearing Deposit}}{\text{Total Deposit}}$$

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

Table 4.32

Interest Bearing Deposit to Total Deposit

(Rs. In Million)

Nabil Bank Limited					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	13446.9	14118.8	14586.61	19347.4	23342.3
Interest Bearing Deposit(IBD)	10023	11106	11787.43	16436.8	19947.06
IBD/Total Deposit	**74.54%**	**78.66%**	**80.81%**	**84.96%**	**89.28%**
Growth Rate		**5.53%**	**2.73%**	**5.13%**	**5.08%**
Laxmi Bank					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	691.8	1684	3051.759	4444.35	7565.54
Interest Bearing Deposit(IBD)	634.3	1456.2	2599.15	4349.74	7186.96
IBD/Total Deposit	**91.69%**	**86.47%**	**85.17%**	**97.87%**	**94.99%**
Growth Rate		**-5.70%**	**-1.50%**	**14.90%**	**-2.90%**
Kumari Bank					
Year	**2003**	**2004**	**2005**	**2006**	**2007**
Deposits	2513.14	4809.94	6268.95	7768.95	10557.42
Interest Bearing Deposit (IBD)	2350.69	4556.14	5989.59	7418.13	10153.62
IBD/Total Deposit	**93.53%**	**94.72%**	**95.54%**	**95.48%**	**96.17%**
Growth Rate		**1.27%**	**0.08%**	**-0.01%**	**0.07%**

Source: Annual Report of Nabil, LXBL and KBL

Table 4.32 shows the interest bearing deposit to total deposit of Nabil LXBL and KBL. All banks have maintained a good ratio between 75-95%. LXBL and KBL have higher composition of interest bearing deposit. KBL maintained a composition above 95% every year i.e. 95.54% in 2005, 95.48% in 2006 and 96.17% in 2007. LXBL has also maintained composition above 85%, highest being 97.87% in 2006.

Figure 4.18

Interest Bearing Deposit to Total Deposit

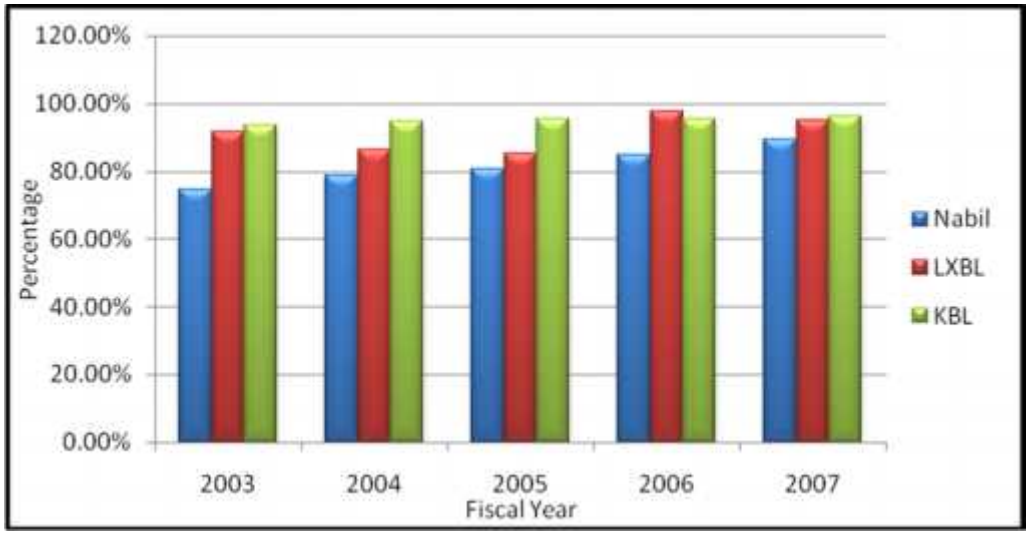


Figure 4.18 shows Interest Bearing Deposit to Total Deposit of Nabil. LXBL and KBL over 5-year period. Nabil bank is able to maintain good amount of non-interest bearing deposit account among all three banks.

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 and
- 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 , trhere is perfect negative correlation.
- When r = 0. There is no correlation.

- When ‘r’ lies between 0.7 to 0.999(or -0.7 to 0.999), there is a high degree of positive 9 or negative) correlation.
- When ‘r’ lies between 0.5 to 0.6999 there is moderate degree of correlation.
- When ‘r’ is less than 0.5, there is low degree of correlation.

Probable Error (P.E)

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 < 6 PE ,

iv) 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, LXBL, and KBL for the period 2003 to 2007. To measure and evaluate the correlation between these variables, deposit interest rate is independent variable(X) and total deposit is dependent variable (Y).

Table 4.33

Correlation Coefficient between Deposit Interest Rates and Total Deposit

Year	Nabil		LXBL		KBL	
	Int Rate	Deposit	Int Rate	Deposit	Int Rate	Deposit
2003	3.5	13446.9	4.81	691.8	4.53	2513.14
2004	2.93	14118.8	4.18	1684	4	4809.94
2005	3.04	14586.61	3.46	3051.759	3.17	6268.95
2006	2.84	19347.4	3.86	4444.35	2.75	7768.95
2007	3.93	23342.3	3.75	7565.54	3.14	10557.42

Source: Annual Report of Nabil, LXBL and KBL

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 4.34

Correlation Coefficient between Deposit Interest Rates and Total Deposit

Banks	Evaluation Criterions			
	r	r^2	P.Er	6P.Er
Nabil	**0.4987**	**0.2487**	**0.2266**	**1.3596**
LXBL	**-0.6343**	**0.4023**	**0.1803**	**1.0818**
KBL	**-0.8246**	**0.6799**	**0.0966**	**0.5796**

Source: Annex-1

Table 4.34 addresses the coefficient of correlation between deposit interest rate (independent) and total deposit (dependent) of Nabil, LXBL and KBL. Nabil showed positive correlation 0.4987 between the two variables. The value of co-efficient of determination (r^2) is 0.2487. It indicates 24.87% of variation in dependent variable (deposit) has been explained by the independent variable (deposit interest rate). Value of P.Er for Nabil is 0.2266 and 6P.Er is 1.3596. There is lower degree of correlation but as r>P.E there is significant relationship between deposit interest rate and total deposit of Nabil. LXBL and KBL show negative correlation of –0.6343 and –0.8246 respectively. The value of coefficient of determination (r^2) is 0.4023 and 0.6799 respectively. It

indicates 40.23%and 67.99% of the variation in the dependent variable (deposit) has been explained by the independent variable (deposit interest rate). Value of P.Er for two banks is 0.1803 and 0.0966. P.Er of LXBL and KBL 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 4.35

t-test between Deposit Interest Rates and Total Deposit

t-statistics			
Banks	**t-calculated**	**t-tabulated**	**Decision**
Nabil	0.9965	3.182	Insignificant
LXBL	1.421	3.182	Insignificant
KBL	2.5244	3.182	Insignificant

Source: Annex-1

Table 4.35 addresses the t-test between deposit interest rate and total deposit of Nabil, LXBL and KBL. The value of t-statistics if calculated then it is 0.9965, 1.421 and 2.5244 for Nabil, LXBL and KBL 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. Deposit interest rate doesn't play a significant role in deposit collection.

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 Nabil, LXBL and KBL for the period 2003 to 2007. To measure and evaluate the correlation between these variables, lending interest rate is independent variable (X) and total credit is dependent Variable (Y).

Table 4.36

Correlation coefficient between Lending Interest rates and Total Credit

Year	Nabil		LXBL		KBL	
	Int Rate	Lending	Int Rate	Lending	Int Rate	Lending
2003	11.5	8267.8	11.72	768.2	11	2137.59
2004	10.75	8769.7	11.69	1734	11	3697.98
2005	10.71	10,946.70	10.96	2726.143	10.34	5681.01
2006	10.62	13,278.80	10.13	4280.106	10.37	7007.79
2007	10.64	15903.0	10.21	6437.449	10.27	9062.43

Source: Annual Report of Nabil, LXBL and KBL

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 4.37

Correlation coefficient between Lending Interest rates and Total Credit

Banks	Evaluation Criterions			
	r	r^2	P.Er	6P.Er
Nabil	-0.6526	0.4259	0.1732	1.0392
LXBL	-0.9103	0.8286	0.0517	0.3102
KBL	- 0.9021	0.8138	0.0562	0.3372

Source: Annex-1

Above table address the coefficient of correlation between lending interest rate (independent) and total loan (dependent) of Nabil, LXBL and KBL. Nabil, LXBL and KBL shows high negative correlation –0.6526, –0.9103 and –0.9021 respectively. The value of coefficient of determination (r^2) of the banks are 0.4259, 0.8286and 0.8138 respectively. This shows 42.59% , 82.86% and 81.38% of the variation in the dependent variables has been explained by independent variables. Value is insignificant for all three banks.

Table 4.38

t-test between Lending Interest rates and Total Credit

t-statistics			
Banks	**t-calculated**	**t-tabulated**	**Decision**
Nabil	1.4918	3.182	Insignificant
LXBL	3.8083	3.182	Significant
KBL	3.6209	3.182	Significant

Table 4.38 addresses the t-test between lending interest rate and total credit of Nabil, LXBL and KBL. The value of t-statistics calculated is 1.4918, 3.8083 and 3.6209 for Nabil, LXBL and KBL 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. This indicates the relationship between correlation coefficient is insignificant. Lending interest rate doesn't play a significant role in total credit. While t-calculated for LXBL and KBL is higher than t-tabulated. So, lending interest rate plays a significant role in credit disbursement. Lending of loan directly depends upon the rate of interest. Lower the lending rate higher is the request for loan and vice versa.

4.2.1.3 Co-efficient of correlation between Total Deposit and Total Lending

The following table shows the total deposit and total lending of Nabil, LXBL and KBL for the period 2003 to 2007. To measure and evaluate the correlation between these variables, total deposit is independent variable (X) and total lending is dependent variable (Y).

Table 4.39

Correlation coefficient between Total Deposit and Total Lending

	Nabil		**LXBL**		**KBL**	
Year	**Lending**	**Deposit**	**Lending**	**Deposit**	**Lending**	**Deposit**
2003	8267.8	13446.9	768.2	691.8	2137.59	2513.14
2004	8769.7	14118.8	1734	1684	3697.98	4809.94
2005	10,946.70	14586.61	2726.14	3051.759	5681.01	6268.95
2006	13,278.80	19347.4	4280.106	4444.35	7007.79	7768.95
2007	15903.0	23342.3	6437.449	7565.54	9062.43	10557.42

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 4.40

Correlation coefficient between Total Deposit and Total Lending

Banks	Evaluation Criterions			
	r	r^2	P.Er	6P.Er
Nabil	**0.9713**	**0.9434**	**0.0171**	**0.1024**
LXBL	**0.9968**	**0.9935**	**0.0019**	**0.0114**
KBL	**0.9941**	**0.9883**	**0.0035**	**0.021**

Source: Annex-1

From the above table, the coefficient of correlation between total deposit (independent) and total lending (dependent) of Nabil, LXBL and KBL has been found. All banks have positive coefficient of correlation(r) i.e. 0.97, 0.99 and 0.99 respectively. Both P.Er and 6P.Er of Nabil. LXBL and KBL 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, LXBL, and KBL for the period 2003-2007. To measure and evaluate the correlation between these variables, Interest Spread is independent variable (X) and Net Profit is dependent variable(Y).

Table 4.41

Correlation Coefficient between Interest spread and Net Profit

Year	Nabil		LXBL		KBL	
	Interest Spread	Net Profit	Interest Spread	Net Profit	Interest Spread	Net Profit
2003	4.51%	416.24	3.03%	1.03	3.53%	12.47
2004	4.46%	455.31	2.96%	10.45	3.23%	48.69
2005	5.10%	519	2.47%	26.46	3.69%	84.20
2006	4.90%	635.26	2.43%	35.38	3.17%	103.67
2007	4.15%	673.96	2.39%	65.58	3.80%	170.26

Source: Annual Report of Nabil, LXBL and KBL

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 4.42

Correlation coefficient between Interest spread and Net Profit

Banks	Evaluation Criterions			
	r	r^2	P.Er	6P.Er
Nabil	- 0.1140	0.0130	0.2977	1.7862
LXBL	-0.8589	0.7377	0.0791	0.4746
KBL	0.4057	0.1645	0.2520	1.5120

Source: Annex-1

From the above table, the coefficient of correlation between interests spread (independent) and Net profit (dependent) of Nabil, LXBL and KBL has been found. Variables of KBL is positively correlated i.e. r= 0.4057. Variables of Nabil and LXBL are negatively correlated i.e. r= -0.114 and –0.8589 respectively. Determination of correlation for banks is 0.013, 0.7377 and 0.1645 respectively for Nabil, LXBL and KBL. 1.3%, 73.77% and 16.45% of the variability in dependent variable is explained by independent variables for the respective banks. Nabil bank has r-value lower than both P.Er and 6P.Er so there is no evidence of correlation. KBL has r- value higher than P.E and lower than 6 P.E it denotes nothing can be concluded and therefore values are insignificant. LXBL have r-value higher than P.E and 6P.E so its value are significant, but since it's r-value is negative so net profit move in opposite direction due to negative correlation between the variables.

4.3 Regression Analysis

4.3.1. Impact of Deposit Interest rate on Total Deposits

The importance of Deposit Interest rate for collection of deposit has always depended upon the standing and network of the bank. Old banks generally give lesser interest rate as compared to new banks trying to enter the market. This has been possible because of the network and confidence of the customer towards the bank. New banks have to use

different option, besides providing higher interest rate they have to provide extra service to generate confidence and trust upon the bank. This has created difference level of services and prices for occupying higher amount of market share.
The analysis of impact of deposit interest rate on total deposits is the combination of all sample commercial banks that gives the aggregate picture of the immediate effect of change in interest rate to deposit holding of the banks.
First of all statistical tool regression analysis is used to develop an equation that helps to estimate the deposit holding of industry for every change in deposit interest rate. The regression equation of total deposit (Y) on deposit interest rate (X) is given by Y= 6369.99- 10261.55X (See calculation in Appendix 2).

The t-test for significance of the regression coefficient revealed following facts

Set of Hypothesis

Null Hypothesis

H_o: b = 0 i.e. value of regression coefficient is insignificant (Deposit interest rate does not play a significant role in deposit collection).

Alternative Hypothesis

$H_{1:}$ b≠0 i.e. value of regression coefficient is significant (Deposit interest rate plays a significant role in deposit collection).

Decision

At 5% level of significance for 3 degree of freedom, interest rate is not important factor for collection of deposit. This shows that in today's context interest rate is not an important factor to generate deposit. i.e. Deposit interest rate doesn't play a significant role in deposit collection.

4.3.2. Impact of Lending Interest Rate on Total Lending

Lending of loan over the years has been increasing drastically despite very less investment opportunities. The lending rates of the banks have seen decreasing trend

resulting huge loan disbursal. Many innovative loan products have also urged customers to utilize the loan facility. This has seriously increased loan disbursement, a person with limits income now have easy access to all the loan facility unlike yester years when it was just a distant dream for them.

Big bank have easy access to fund at the lower rate due to its market standing and larger networks. This helps them float loan at comparatively lower rate than the new and smaller banks having high cost deposits. This on the other way means lending rate of the bank depends much on the rate the bank at which it accepts deposit. As the deposit rate is decreasing, lending rate is obvious to decrease as well; this ultimately has increased the lending of the bank.

The analysis of impact of lending interest rate on total lending is the combinations of all the sample commercial banks that show whether interest rate is an important factor for request of loan.

First of all statistical tool regression analysis is used to develop an equation that helps to estimate the lending of banks for every change in lending interest rate. The regression equation of total lending (Y) on lending Interest Rate (X) is given by Y= 192265.83- 15946.46X(See calculation in Appendix 2)

The t-test for significance of the regression coefficient revealed the following fact.

Set of Hypothesis

Null Hypothesis

H_o**:** b= 0 i.e. value of regression coefficient is insignificant (Lending interest arte does not play a significant role in loan disbursements).

Alternative Hypothesis

H_1: b≠0 i.e. value of regression coefficient is significant (Lending interest rate plays a significant role in loan disbursement).

Decision

At 5% level of significance for 3 degree of freedom, the test of hypothesis reveals lending of loan directly depends upon the rate of interest. Lower the lending rate higher is the request for the loan and vice-versa. For every decrease in interest rate Rs. 15946.46 million loans can be disbursed against loan request. Therefore, sample banks must consider impossible impact before changing the rate of interest.

4.4. 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 earning: Income earned through fluctuation 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 the 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 does not always fetch fruitful return. The only break through for the bank can be 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.

4.4.1. Composition of Total Income of Nabil Bank

Table 4.43

Total Income of Nabil Bank

(Rs. In Million)

Income	**2003**	**2004**	**2005**	**2006**	**2007**	**Average**
1. Interest Income	1017.87	1001.62	1068.75	1310	1587.76	1197.2
2. Commission and Discount	144.41	138.57	128.88	138.29	150.61	140.15
3. Exchange Gain	144.08	157.32	184.88	185.48	209.93	176.34
4. Non-Operating Income	86.95	92.78	72.24	0.74	5.28	51.60
5. Other Income	34.15	38.75	55.93	82.90	87.57	59.86
Total Income	**1427.46**	**1429.04**	**1510.68**	**1717.41**	**2041.15**	**1625.15**

Source: Annual Report of Nabil

Table 4.43 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 decline from 1017.87 million in 2003 to 1001.62 million in 2004, after that there is increase in interest income with average of 1197.2 million. Commission and discount showed fluctuating trend, it increases and decreases in consecutive years. Exchange gain showed increasing trend, it increased from 144.08 million in 2003 to 157.32 million in 2004 again rise to 184.88 million, 185.48 million and 209.93 million in 2005, 2006 and 2007 respectively. Non-operating income was unpredictable. Non-operating income showed 86.95 million and 92.78 million in 2003 and 2004 respectively, then it decreased to 72.24 million in 2005 and further went low as 0.74 million and 5.28 million in 2006 and 2007

respectively. Other income showed increasing trend with 34.15 million in 2003, 38.75 million in 2004, 55.93 million in 2005, 82.90 million in 2006 and 87.57 million in 2007.

Table 4.44

Total Income of Nabil Bank (Percentage)

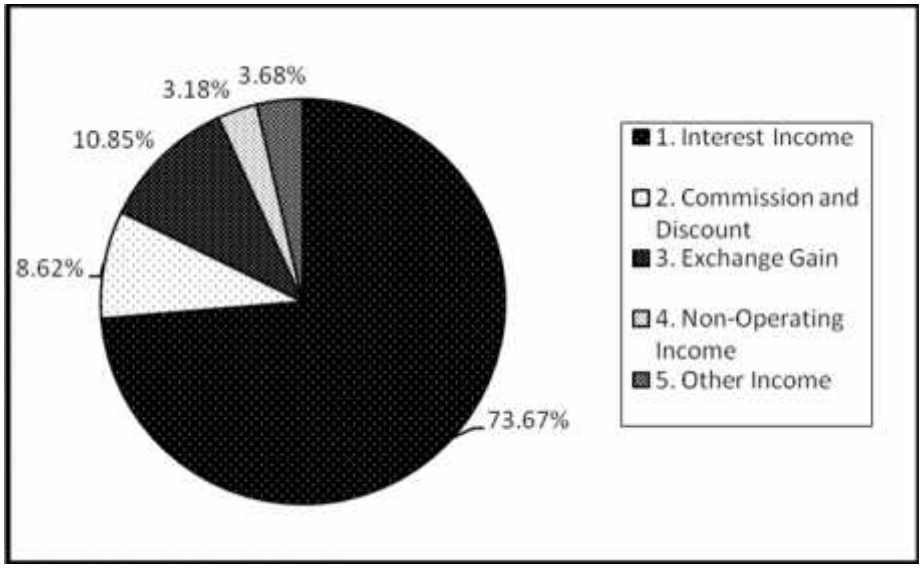
Income	**2003**	**2004**	**2005**	**2006**	**2007**	**Composition**
1. Interest Income	71.31%	70.09%	70.75%	76.28%	77.79%	73.67%
2. Commission and Discount	10.12%	9.70%	8.53%	8.05%	7.38%	8.62%
3. Exchange Gain	10.09%	11.01%	12.24%	10.80%	10.28%	10.85%
4. Non-Operating Income	6.09%	6.49%	4.78%	0.0004%	0.0026%	3.18%
5. Other Income	2.39%	2.71%	3.70%	4.83%	4.3%	3.68%
Total Income	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Annual Report of Nabil

Table 4.44 shows the composition of total income of Nabil Bank in percentage over 5 years period. The dependency on interest income was felt, each year recorded above 70% of total income. It seems there is slightly decline in interest income until 2005 but after 2005 there is continuous increment with 76.28% and 77.79% in 2006 and 2007 respectively. Average interest income for 5-year period is 73.67%. Commission and discount remained below 10.5% of total income over the years making an average of 8.62%. Exchange gains average around 10.85% over the period. Non-operating income and other income contribute negligible share in total income that lie below 3.18% and 3.68% in average.

Figure 4.19

Total Income Composition of Nabil Bank



The pie chart represents the average total income composition of Nabil Bank over five-year period. More than ¾ of the pie is occupied by interest income i.e. 73.67% of total income followed by 10.85% in exchange gain and 8.62% in commission and discount. Non-operating income and other income contribute at an average of 3.18% and 3.68% respectively.

4.4.2. Composition of Total Income of LXBL

Table 4.45

Total Income of LXBL

(Rs. In Million)

Income	**2003**	**2004**	**2005**	**2006**	**2007**	**Average**
1. Interest Income	49.79	124.04	214.13	319.25	470.49	235.54
2. Commission and Discount	4.26	11.3	14.14	15.04	15.16	11.98
3. Exchange Gain	4.53	6.08	5.77	9.43	20.90	9.34
4. Non-Operating Income	0.4	0	0	0	0	0.08
5. Other Income	0.49	1.03	7.59	9.79	15.71	6.92
Total Income	**59.47**	**142.45**	**241.63**	**353.51**	**522.26**	**263.86**

Source: Annual Report of LXBL

Table 4.45 shows the composition of total income of LXBL over 5-year period i.e. between 2003 and 2007. Interest income showed increasing trend with 49.79 million in 2003, 124.04 million in 2004, 214.13 million in 2005, 319.25 million in 2006 and 470.49 million in 2007. Commission and discount and exchange gain continuously increased with an average of 11.98 million and 9.34 million respectively. Non-operating income contributed nearly 0 income in total income, while other income also increased continuously from 0.49 million in 2003 to 1.03 million in 2004, 7.59 million in 2005, 9.79 million in 2006 and 15.71 million in 2007 at an average of 6.92 million.

Table 4.46

Total Income of LXBL (Percentage)

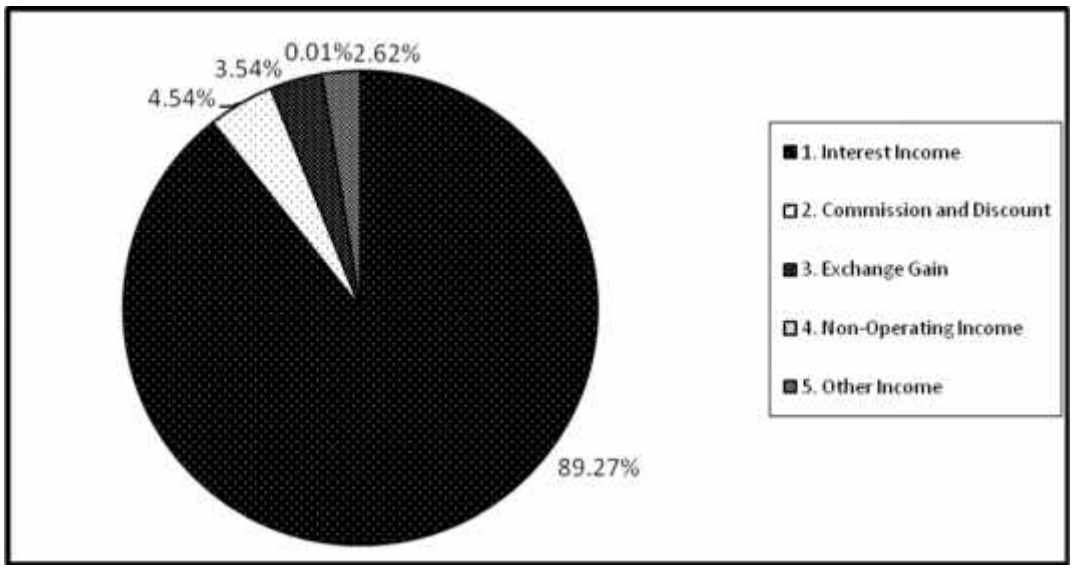
Income	**2003**	**2004**	**2005**	**2006**	**2007**	**Composition**
1. Interest Income	83.72%	87.08%	88.62%	90.31%	90.09%	89.27%
2. Commission and Discount	7.20%	7.9%	5.85%	4.25%	2.90%	4.54%
3. Exchange Gain	7.62%	4.3%	2.39%	2.67%	4%	3.54%
4. Non-Operating Income	0.067%	0%	0%	0%	0%	0.0134%
5. Other Income	0.082%	0.007%	3.14%	2.77%	3.01%	2.62%
Total Income	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Annual Report of LXBL

Table 4.46 shows the composition of total income of LXBL over 5 year period between 2003 and 2007. The dependency on interest income averaged around 89.27%. Interest income contributed 83.72%, 87.08%, 88.62%, 90.31% and 90.09% respectively. Commission and discount decrease continuously from 7.9% in 2004 to 5.85% in 2005 and again decrease to 4.25% in 2006 to 2.90% in 2007. Exchange gain continuously decreases from 7.62% in 2003 to 2.39% in 2005 through 4.3% in 2004, and again increases to 4% in 2007 from 2.67% in 2006. Non-operating income has negligible percentage of contribution on total income. Other income shows progressive growth over the period with an average of 2.62%.

Figure 4.20

Total Income Composition of LXBL



The pie chart represents average total income composition of LXBL over 5-year period. Almost 90% of pie is occupied by interest income i.e. 89.27% of total income followed by 4.54% in commission and discount and 3.54% in exchange gain. The share of non-operating income and other income was 0.01% and 2.62% respectively.

4.4.3. Composition of Total Income of KBL

Table 4.47

Total Income of KBL

(Rs. In Million)

Income	**2003**	**2004**	**2005**	**2006**	**2007**	**Average**
1. Interest Income	185.09	310.22	499.92	605.53	791.28	478.41
2. Commission and Discount	9.41	16.45	23.08	26.28	40.46	23.14
3. Exchange Gain	7.14	14.41	14.99	26.37	20.29	16.64
4. Non-Operating Income	0.003	0	.005	0	0.67	0.14
5. Other Income	0.58	1.77	2.6	10	15.28	6.05
Total Income	**202.23**	**342.85**	**540.60**	**668.18**	**867.98**	**524.38**

Source: Annual Report of KBL

Table 4.47 shows the total income composition of KBL 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 185.09 million, 310.22 million, 499.92 million, 605.53 million and 791.28 million in 2003, 2004, 2005, 2006 and 2007 respectively at an average of 478.41 million. Commission and discount, exchange gain and other income showed increment over the period with an average 23.14 million, 16.64 million and 6.05 million respectively. Non-operating income shared 0.003 million, 0.005 million and 0.67 million in 2003, 2005 and 2007 respectively.

Table 4.48

Total Income of KBL (Percentage)

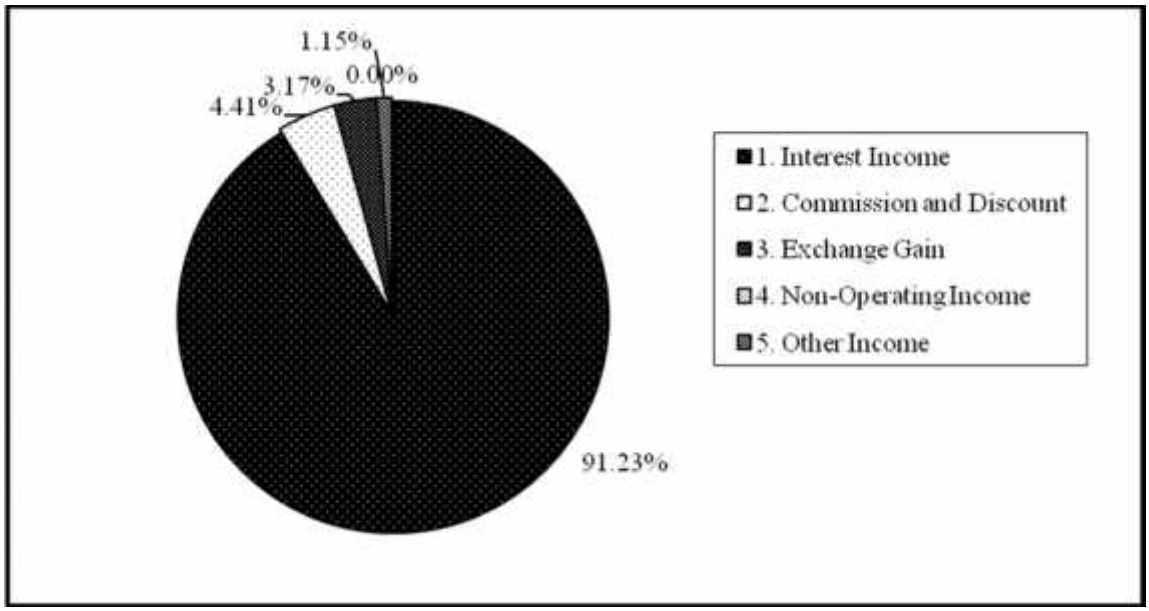
Income	**2003**	**2004**	**2005**	**2006**	**2007**	**Composition**
1. Interest Income	91.52%	90.48%	92.48%	90.62%	91.16%	91.23%
2. Commission and Discount	4.65%	4.80%	4.27%	3.93%	4.66%	4.41%
3. Exchange Gain	3.53%	4.20%	2.77%	3.95%	2.34%	3.17%
4. Non-Operating Income	0%	0%	0%	0%	0.0007%	0.0003%
5. Other Income	0.0028%	0.005%	0.005%	1.5%	1.76%	1.15%
Total Income	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Annual Report of KBL

Table 4.48 shows the composition of total income of KBL over 5-year period. KBL showed high dependency on interest income as interest income contributed 91.52%, 90.48%, 92.48%, 90.62% and 91.16% in 2003,2004,205, 2006 and 2007 respectively with an average of 91.23%. Commission and discount and exchange gain contributed below 5% of total income. The share of Commission and discount being 4.65%, 4.80%, 4.27%, 3.93% and 4.66% in 2003, 2004, 2005, 2006 and 2007 respectively. Non-operating income contributed below 0.05%. Likewise other income contributed below 2% with an average of 1.15%.

Figure 4.21

Total Income Composition of KBL



The pie chart represents average total income composition of KBL over 2003 to 2007. Interest income occupied dominant position with 91.23% of total income followed by 4.41% in commission and discount and 3.17% in exchange gain. Other income contributed at an average of 1.15%.

4.5 Major Findings

- 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.
- The figure of interest earned to total assets showed all banks are behaving in similar pattern. The ratio of Nabil and LBL are decreasing while the ratio of KBL is increasing at decreasing rate. Over the years the ratio of banks lie between 4.5% and 7%.
- Net interest income hovered above 825 Million marks for old bank with a trend seeing rise year after year. New banks have earned above 100 Million but it is rising dramatically over the years reaching above 300 Million at present. These increasing trends of net interest income will increase the profit if the economic environment remains same and flourishing.

- 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.
- 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 is lower than 3%, for other bank the margin is above 3%, which is obviously higher (risky) to stay in the market.
- Nabil bank enjoyed comparatively higher interest spread than LXBL and KBL. The spread showed decreasing trend over the years. Still Nabil maintained the spread above 4% and a high as 5.1%. Rate for other bank remained below 4.5% and low as 2.39%. 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.
- 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 smaller banks, which have limited sources other than interest income. Smaller banks invest huge portion of its fund on fund-based activities making it prone to liquidity, interest rate and capital risk.
- All bank showed growth in deposit lending, interest income and interest expenses.
- The deposit interest rate of older banks reduces down to 2.5% but small banks still offers interest rate above 4%. This itself shows the market standing and confidence of customer upon the bank. While in lending parts all bank offer loan in almost same rate except some loan like hire purchase, home loan, deprived sector loan. The gap between deposit rate and lending rate is obvious enough to increase the interest spread and profitability of the bank.
- 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 fete as that of older banks.

- Almost all banks are highly dependent upon the interest income as main source of the income. Banks have almost 75% to 96% 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.
- 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.

The coefficient of correlation between average lending interest rate and lending for banks were negatively correlated but showed mixture of reaction. For Some bank interest rate is important tool to lend 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.

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.

The coefficient of correlation between interest spread and net profit showed mixture of result. Nothing can be concluded for the banks Nabil and KBL. LXBL 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 other 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 by 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 de-motivate 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 customers do not 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 to 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 believed considering interest rate 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 bank 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:

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

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

- 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.
- Except some well-established bank many commercial banks have interest income as main source of income. The higher dependence in interest income should be gradually decreased as it bears higher risk on bank's part. Banks should explore more avenues to increase commission-based income by increasing facilities and networks.
- 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.
- Generally, there is a tendency of well-established commercial banks to have higher interest spread. These banks should not be allowed to have such higher

margin due to their market coverage. NRB should intervene in such cases and make its liberal policy open to take control over such policy of the banks.

- 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.
- 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.
- 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.
- 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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Appendix - 1

Coefficient of correlation between Average Deposit Interest rate and Deposit of Nabil Bank

Year	Int Rate (x)	Deposit (y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	3.5	13446.9	0.25	0.0625	-3521.5	12400962.25	-880.38
2004	2.93	14118.8	-0.32	0.1024	-2849.6	8120220.16	911.87
2005	3.04	14586.61	-0.21	0.0441	-2381.79	5672923.6	500.18
2006	2.84	19347.4	-0.41	0.1681	2379	5659641	-975.39
2007	3.93	23342.3	0.68	0.4624	6373.9	40626601.21	4334.25
N=5	**16.24**	**84842.01**		**0.8395**		**72480348.22**	**3890.53**

We have,

N= 5

$$\bar{X} = \left[\frac{\sum x}{n}\right]$$

$$\bar{X} = \frac{16.24}{5} = 3.25$$

$$\bar{Y} = \left[\frac{\sum y}{n}\right]$$

$$Y = \frac{84842.01}{5} = 16968.4$$

Correlation coefficient ‘r’ can be calculated by using the following formula

$$r = \frac{\sum x\, y}{\sqrt{(\sum x^2\, y^2)}}$$

$$= \frac{3890.53}{0.8395 \times 72480348.22}$$

= 0.4987

r^2= 0.2487

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

$= 0.6745 \times \frac{1-0.2487}{\sqrt{5}} = 0.2266$

6 P.E(r)= $6 \times 0.2266 = 1.3596$

t-statistics for hypothesis test:

Formula to compute t-calculation

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

For Nabil , t-calculation for Total Deposit and Deposit Rate is

t= $\frac{0.4987}{\sqrt{(1-0.2487)}} \times \sqrt{5-2}$

= 0.9965

Coefficient of correlation between Average Deposit Interest rate and Deposit of LXBL

Year	Int Rate(x)	Deposit(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	4.81	691.8	0.8	0.64	-2795.69	7815882.576	-2236.55
2004	4.18	1684	0.17	0.0289	-1803.49	3252576.18	-306.59
2005	3.46	3051.759	-0.55	0.3025	-435.73	189860.63	239.65
2006	3.86	4444.35	-0.15	0.0225	956.86	915581.06	-143.53
2007	3.75	7565.54	-0.26	0.0676	4078.05	16630491.8	-1060.29
N=5	**20.06**	**17437.45**		**1.0615**		**28804302.25**	**-3507.31**

We have,

N= 5

X= $\frac{20.06}{5}$= 4.01

Y= $\frac{17437.45}{5}$= 3487.49

Correlation coefficient 'r' can be calculated by using the following formula

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

$$= \frac{-3507.31}{\sqrt{1.0615 \times 28804302.25}}$$

= -0.6343

r^2= 0.4023

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

$$= 0.6745 \times \frac{1-0.4023}{\sqrt{5}} = 0.1803$$

6 P.E(r)= 6×0.1803= 1.0818

t-statistics for hypothesis test:

Formula to compute t-calculation

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

For LXBL , t-calculation for Total Deposit and Deposit Rate is

t= $\frac{0.6343}{\sqrt{(1-0.4023)}} \times \sqrt{5-2}$

= 1.4210

Coefficient of correlation between Average Deposit Interest rate and Deposit of KBL

Year	Int Rate(x)	Deposit(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	4.53	2513.14	1.01	1.0201	-3870.54	14981079.89	-3909.25
2004	4	4809.94	0.48	0.2304	-1573.74	2476657.89	-755.39
2005	3.17	6268.95	-0.35	0.1225	-114.73	13162.97	40.16
2006	2.75	7768.95	-0.77	0.5929	1385.27	1918972.97	-1066.66
2007	3.14	10557.42	-0.38	0.1444	4173.74	17420105.59	-1586.02
N=5	**17.60**	**31918.40**		**2.1103**		**36909979.31**	**-7277.16**

We have,

N= 5

X= $\frac{17.6}{5}$ = 3.52

Y= $\frac{31918.4}{5}$= 6383.68

Correlation coefficient 'r' can be calculated by using the following formula

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

= $\frac{-7277.16}{\sqrt{2.1103 \times 36909979.31}}$

= -0.8246

r^2= 0.6799

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

$= 0.6745 \times \frac{1-0.6799}{\sqrt{5}}$ = 0.0966

6 P.E(r)= 6 ×0.1803= 0.5793

t-statistics for hypothesis test:

Formula to compute t-calculation

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

For KBL , t-calculation for Total Deposit and Deposit Rate is

t= $\frac{0.8246}{\sqrt{(1-0.6799)}} \times \sqrt{5-2}$

= 2.5244

Coefficient of correlation between Average Lending rate and Total Credit of Nabil Bank

Year	Int Rate(x)	Lending(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	11.5	8267.8	0.66	0.4356	-3165.4	10019757.16	-2089.16
2004	10.75	8769.7	-0.09	0.0081	-2663.5	7094232.25	239.72
2005	10.71	10,946.70	-0.13	0.0169	-486.5	236682.25	63.25
2006	10.62	13,278.80	-0.22	0.0484	1845.6	3406239.36	-406.03
2007	10.64	15903.0	-0.2	0.04	4469.8	19979112.04	-893.96
N=5	**54.2**	**57166**		**0.549**		**40736023.06**	**-3086.18**

We have,

N= 5

X= $\frac{54.2}{5}$=10.84

Y= $\frac{57166}{5}$=11433.2

Correlation coefficient ‘r’ can be calculated by using the following formula

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

= $\frac{-3086.18}{\sqrt{0.5490 \times 40736023.06}}$

= -0.6526

r^2= 0.4259

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

$= 0.6745 \times \frac{1-0.4259}{\sqrt{5}}$ = 0.1732

6 P.E(r)= 6 × 0.1732= 1.0392

(Similarly, t-test between Total credit and Lending of Nabil, LXBL and KBL are done in the same way as above i.e. 2.3).

Coefficient of correlation between Average Lending rate and Total Credit of LXBL

Year	Int Rate(x)	Lending(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	11.72	768.2	0.78	0.6084	-2420.98	5861144.16	-1888.36
2004	11.69	1734	0.75	0.5625	-1455.18	2117548.83	-1091.39
2005	10.96	2726.143	0.02	0.0004	-463.04	214406.04	-9.2608
2006	10.13	4280.106	-0.81	0.6561	1090.93	1190128.27	-883.65
2007	10.21	6437.449	-0.73	0.5329	3248.27	10551257.99	-2371.24
N=5	**54.7**	**15945.9**		**2.3603**		**19934485.29**	**-6243.9**

We have,

N= 5

$\bar{X} = \frac{54.7}{5}$ =10.94

$\bar{Y} = \frac{15945.9}{5}$ =3189.18

Correlation coefficient ‘r’ can be calculated by using the following formula

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

$= \frac{-6243.9}{\sqrt{2.3603 \times 19934485.29}}$

= -0.9103

r^2= 0.8286

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

$= 0.6745 \times \frac{1-0.8286}{\sqrt{5}}$ = 0.0517

6 P.E(r)= 6×0.0517= 0.3102

Coefficient of correlation between Average Lending rate and Total Credit of KBL

Year	Int Rate(x)	Lending(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	11	2137.59	0.4	0.16	-3379.77	11422845.25	-1351.91
2004	11	3697.98	0.4	0.16	-1819.38	3310143.58	-727.75
2005	10.34	5681.01	-0.26	0.0676	163.65	26781.32	-42.55
2006	10.37	7007.79	-0.23	0.0529	1490.43	2221381.59	-342.80
2007	10.27	9062.43	-0.33	0.1089	3545.07	12567521.3	-1169.87
N=5	**52.98**	**27586.8**		**0.5494**		**29548673.04**	**-3634.88**

We have,

N= 5

$\bar{X} = \frac{52.98}{5} = 10.6$

$\bar{Y} = \frac{27585.8}{5} = 5517.36$

Correlation coefficient 'r' can be calculated by using the following formula

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

$$= \frac{-3634.88}{\sqrt{0.5494 \times 29548673.04}}$$

= -0.9021

r^2= 0.8138

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

$$= 0.6745 \times \frac{1-0.8138}{\sqrt{5}} = 0.0562$$

6 P.E(r)= 6×0.0562= 0.3372

Coefficient of correlation between Total Deposit and Total Credit of Nabil Bank

Year	Deposit(x)	Lending(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	13446.9	8267.8	-3521.5	12400962.25	-3165.4	10019757.16	11146956.1
2004	14118.8	8769.7	-2849.6	8120220.16	-2663.5	7094232.25	7589909.6
2005	14586.61	10946.70	-2381.79	5672923.60	-486.5	236682.25	1158740.84
2006	19347.4	13278.80	2379	5659641	1845.6	3406239.36	4390682.4
2007	23342.3	15903.0	6373.9	40626601.21	4469.8	19979112.04	28490058.22
N=5	**84842.01**	**57166**		**72480348.22**		**40736023.06**	**52776347.16**

We have,

N= 5

$\bar{X} = \frac{84842.01}{5} = 16968.40$

$\bar{Y} = \frac{57166}{5} = 11433.2$

Correlation coefficient 'r' can be calculated by using the following formula

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

$$= \frac{52776347.16}{\sqrt{72480348.22 \times 40736023.06}}$$

= 0.9713

r^2= 0.9434

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

$$= 0.6745 \times \frac{1-0.9434}{\sqrt{5}} = 0.01707$$

6 P.E(r)= 6× 0.01707= 0.3372

Coefficient of correlation between Total Deposit and Total Credit of LXBL

Year	Deposit(x)	Lending(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	691.8	768.2	-2795.69	7815882.58	-2420.98	5861144.16	6768309.58
2004	1684	1734	-1803.49	3252576.18	-1455.18	2117548.83	2624402.58
2005	3051.759	2726.14	-435.73	189860.63	-463.04	214406.04	201760.42
2006	4444.35	4280.106	956.86	915581.06	1090.93	1190128.27	1043867.28
2007	7565.54	6437.449	4078.05	16630491.8	3248.27	10551257.99	13246607.47
N=5	**17437.45**	**15945.9**		**28804392.25**		**19934485.29**	**23884947.33**

We have,

N= 5

$\bar{X} = \frac{17437.45}{5}$ =3487.49

$\bar{Y} = \frac{15945.9}{5}$= 3189.18

Correlation coefficient ‘r’ can be calculated by using the following formula

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

$= \frac{23884947.33}{\sqrt{28804392.25 \times 19934485.29}}$

= 0.9968

r^2= 0.9935

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

$= 0.6745 \times \frac{1-0.9935}{\sqrt{5}}$ =0.0019

6 P.E(r)= 6×0.0019= 0.0114

Coefficient of correlation between Total Deposit and Total Credit of KBL

Year	Deposit(x)	Lending(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	2513.14	2137.59	-3870.54	14981079.89	-3379.77	11422845.25	13081534.98
2004	4809.94	3697.98	-1573.74	2476657.59	-1819.38	3310143.58	2863231.08
2005	6268.95	5681.01	-114.73	13162.97	163.65	26781.32	-18775.56
2006	7768.95	7007.79	1385.27	1918972.97	1490.43	2221381.59	2064647.97
2007	10557.42	9062.43	4173.74	17420105.59	3545.07	12567521.3	14796200.46
N=5	**31918.4**	**27586.8**		**36809979.01**		**29548673.04**	**32786838.93**

We have,

N= 5

$\bar{X}$= $\frac{31918.4}{5}$ = 6383.68

$\bar{Y}$= $\frac{27586.8}{5}$= 5517.36

Correlation coefficient ‘r’ can be calculated by using the following formula

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

$$= \frac{32786838.93}{\sqrt{36809979.01 \times 29548673.04}}$$

= 0.9941

r^2= 0.9883

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

$= 0.6745 \times \frac{1-0.9883}{\sqrt{5}}$ =0.0035

6 P.E(r)= 6×0.0035= 0.021

Coefficient of correlation between Interest Spread and Net Profit of Nabil Bank

Year	Int Spread(x)	Net Profit(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	4.51%	416.24	-0.11	0.0121	-123.71	15304.16	13.61
2004	4.46%	455.31	-0.16	0.0256	-84.64	7163.93	13.54
2005	5.10%	519	0.48	0.2304	-20.95	438.90	-10.06
2006	4.90%	635.26	0.28	0.0784	95.31	9083.99	26.69
2007	4.15%	673.96	-0.47	0.2209	134.01	17958.68	-62.98
N=5	**23.12**	**2699.75**		**0.5674**		**49949.66**	**-19.2**

We have,

N= 5

$\bar{X} = \frac{23.12}{5} = 4.62$

$\bar{Y} = \frac{2699.75}{5} = 539.95$

Correlation coefficient 'r' can be calculated by using the following formula

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

$$= \frac{-19.2}{\sqrt{0.5674 \times 49949.66}}$$

= -0.1140

r^2= 0.0130

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

$$= 0.6745 \times \frac{1-0.0130}{\sqrt{5}} = 0.2977$$

6 P.E(r)= 6×0.2977= 1.7862

Coefficient of correlation between Interest Spread and Net Profit of LXBL

Year	Int Spread(x)	Net Profit(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	3.03%	1.03	0.37	0.1369	-26.75	715.56	-9.8975
2004	2.96%	10.45	0.3	0.09	-17.33	300.33	-5.199
2005	2.47%	26.46	-0.19	0.0361	-1.32	1.74	0.2508
2006	2.43%	35.38	-0.23	0.0529	7.6	57.76	-1.7480
2007	2.39%	65.58	-0.27	0.0729	37.8	1428.84	-10.206
N=5	**13.28**	**138.9**		**0.3888**		**2504.23**	**-26.7997**

We have,

N= 5

$\bar{X} = \frac{13.28}{5} = 2.66$

$\bar{Y} = \frac{138.9}{5} = 27.78$

Correlation coefficient ‘r’ can be calculated by using the following formula

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

$$= \frac{-26.7997}{\sqrt{0.3888 \times 2504.23}}$$

= -0.8589

$r^2 = 0.7377$

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

$$= 0.6745 \times \frac{1-0.7377}{\sqrt{5}} = 0.0791$$

6 P.E(r)= 6×0.0791= 0.4746

Coefficient of correlation between Interest Spread and Net Profit of KBL

Year	Int Spread(x)	Net Profit(y)	dx=x-$\bar{X}$	dx^2	dy=y-$\bar{Y}$	dy^2	dxdy
2003	3.53%	12.47	0.05	0.0025	-71.39	5096.53	-3.5695
2004	3.23%	48.69	-0.25	0.0625	-35.17	1236.93	8.7925
2005	3.69%	84.20	0.21	0.0441	0.34	0.1156	0.0714
2006	3.17%	103.67	-0.31	0.0961	19.81	392.44	-6.1411
2007	3.80%	170.26	0.32	0.1024	86.4	7464.96	27.648
N=5	**17.42**	**419.3**		**0.3076**		**14190.98**	**26.8013**

We have,

N= 5

$\bar{X} = \frac{17.42}{5} = 3.48$

$\bar{Y} = \frac{419.3}{5} = 83.86$

Correlation coefficient 'r' can be calculated by using the following formula

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

$$= \frac{26.8013}{\sqrt{0.3076 \times 14190.98}}$$

= 0.4057

r^2= 0.1645

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

$$= 0.6745 \times \frac{1-0.1645}{\sqrt{5}} = 0.2520$$

6 P.E(r)= 6×0.2520= 1.5120

Appendix 2

Regression analysis of Total Deposit (Y) on Deposit Interest rate (X)

Here,

Total Deposit (Y) = Total Deposit of Sample Banks

Deposit Interest Rate (X)= Average Deposit Interest Rate of Sample Banks

Year	**X**	**Y**	**XY**	**X^2**	**$(X-\bar{X})^2$**	**$(Y-\bar{Y})^2$**
2003	4.28	16651.84	71269.88	18.32	0.473344	103789842.6
2004	3.7	20612.74	76267.14	13.69	0.011664	38773411.85
2005	3.22	23907.32	76981.57	10.37	0.138384	8598090.06
2006	3.15	31560.7	99416.21	9.92	0.195364	22289068.48
2007	3.61	41465.26	149689.59	13.03	0.000324	213910808
N=5	**17.96**	**134197.9**	**473624.39**	**65.33**	**0.81908**	**387361221**

Let the regression equation of Y on X be,

Y= a + bx……(i)

To find the values of a and b we have the following two normal equations

$$Y \; X na \; \Gamma b \quad X \text{.....} (ii)$$

$$XY \; X a \quad X \; \Gamma b \quad X^{\,2} \text{……} \text{(iii)}$$

Substituting the value of n, Y , Σ X, Σ XY, Σ X^2 in (ii) and (iii), we get

134197.9 = 5a + 17.96 b……. (iv)

473624.39=17.96a + 65.33b……(v)

Now, multiplying equation (iv) by 3.592 and then subtracting from equation (v), we get

482038.86= 17.96 a +64.51b

473624.39= 17.96a + 65.33b

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8414.47= -0.82b

or, b= -10261.55

Putting the value of 'b' in equation (iv), we get

134197.9= 5a +17.96(-10261.55)

or, a = 6369.99

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

Y= 6369.99- 10261.55X

Test of Significance of the regression coefficient

Setting of Hypothesis

Null Hypothesis H_o: b= 0 i.e. value of regression coefficient is insignificant
(Deposit interest rate does not play a significant role in deposit collection)
Alternative Hypothesis H_1: b≠0 i.e. value of regression coefficient is significant
(Deposit interest rate plays a significant role in deposit collection)

Since the number of observation is less than 30, we use t-test to know the significance of the regression coefficient.
Formula of t-test is given by

$T \text{ X} \frac{b}{SE}$

The standard deviation of the Deposit Rate

$\pm \text{ X} \sqrt{\frac{(X \text{ Z} x)2}{n}}$

$\pm x = \sqrt{\frac{0.81908}{5}} = 0.4047$

The standard deviation of the Total deposit is

$\pm X\sqrt{\frac{(YZy)}{n}}$

$\pm y\, X\sqrt{\frac{387361221}{5}} = 8801.83$

Correlation of Coefficient between Deposit Interest Rate and Total Deposit

r= 0.1148

r^2= 0.0132

Standard error (SE)= $\frac{dy}{dx} \times \sqrt{\frac{1-r^2}{n}}$

= 9598.07

Value of t when b= -10261.55 and S.E. = 9598.07

$T\, X\frac{-10261.55}{9598.07} = 1.069$

Degree of freedom (d.f.) = n-2= 5-2= 3

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

Decision: Since the calculated value of t is lower than the tabulated value of t. null hypothesis H_o is accepted. That is value of regression coefficient is insignificant i.e. deposit interest rate doesn't play a significant role in deposit collection.

Regression analysis of Total Lending (Y) on Lending Interest rate (X)

Here,

Total Lending (Y) = Total Lending of Sample Banks

Lending Interest Rate (X)= Average Lending Interest Rate of Sample Banks

Year	X	Y	XY	X2	$(X-\bar{X})^2$	$(Y-\bar{Y})^2$
2003	11.41	11173.59	127490.66	130.19	0.3795	80391845.82
2004	11.15	14201.68	158348.73	124.32	0.1246	35259962.76
2005	10.67	19353.85	206505.58	113.85	0.0153	617623.09
2006	10.37	24566.69	254756.58	107.54	0.1798	19597886.3
2007	10.37	31402.88	325647.87	107.54	0.1798	126858322.7
N=5	**53.97**	**100698.7**	**1072749.42**	**583.44**	**0.879**	**262725640.7**

Let the regression equation of Y on X be,

Y= a + bx……(i)

To find the values of a and b we have the following two normal equations

$Y = na + b\sum X$ .....(*ii*)

$XY = a\sum X + b\sum X^2$…….(iii)

Substituting the value of n, $\sum Y$, $\sum X$, $\sum XY$, $\sum X^2$ in (ii) and (iii), we get

100698.7 = 5a + 53.97 b……. (iv)

1072749.42=53.97a + 583.44b……(v)

Now, multiplying equation (iv) by 10.794 and then subtracting from equation (v), we get

1086941.77= 53.97 a +582.55b

1072749.42= 53.97a + 583.44b

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14192.35= -0.89b

or, b= -15946.46

Putting the value of 'b' in equation (iv), we get

100698.7= 5a +53.97(-15946.46)
or, a = 192265.83

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

Y= 192265.83- 15946.46X

Test of Significance of the regression coefficient

Setting of Hypothesis

Null Hypothesis H_o**:** b= 0 i.e. value of regression coefficient is insignificant
(Lending interest arte does not play a significant role in loan disbursements)
Alternative Hypothesis H_1: b≠0 i.e. value of regression coefficient is significant
(Lending interest rate plays a significant role in loan disbursement)

Since the number of observation is less than 30, we use t-test to know the significance of the regression coefficient.
Formula of t-test is given by

$T \text{ X} \frac{b}{SE}$

The standard deviation of the Deposit Rate

$\pm \text{ X} \sqrt{\frac{(X \text{ Z} x)2}{n}}$

$\pm x = \sqrt{\frac{0.879}{5}} = 0.4193$

The standard deviation of the Total deposit is

$\pm \text{ X} \sqrt{\frac{(Y \text{ Z} y)}{n}}$

$\pm y \, X \sqrt{\frac{262725640.7}{5}} = 7248.80$

Correlation of Coefficient between Deposit Interest Rate and Total Deposit

r= 0.9279

r^2= 0.8609

Standard error (SE)= $\frac{dy}{dx} X \sqrt{\frac{1-r^2}{n}}$

= 2883.50

Value of t when b= -15946.46 and S.E. = 2883.50

$T \, X \frac{-15946.46}{2883.50} = 5.5302$

Degree of freedom (d.f.) = n-2= 5-2= 3

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

Decision: Since the calculated value of t is higher than the tabulated value of t. Alternative hypothesis H_1 is accepted. That is value of regression coefficient is significant. Lending of loan directly depends upon the rate of interest. Lower the lending rate higher will be the request for loan and vice-versa.